ECONOMIC ANALYSIS AND WORKERS'
MANAGEMENT, 1, XXIII (1989), 55—77

INDUSTRIAL POLICY AND INTERNATIONAL TRADE* (SHAPING COMPARATIVE ADVANTAGE)

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This article analyses industrial policy and its impact on international trade. First, it devotes attention to the main reasons for the introduction of an industrial policy a decade ago in the developed countries. Second, it presents various definitions of industrial policy. The next chapter considers the implementation of industrial policy in the selected countries. Finally, the article recommends the industrial policies of Japan and W. Germany as examples of successful circumventing numerous pitfalls which lie on the way which shapes a country's comparative advantage.

INTRODUCTION

Explicit industrial policy as a part of overall economic policy had not been in the center of research interest in the industralised countries up to mid-1970s. This is due to the underlying economic development. During the 1960s and early 1970s these countries experienced relatively fast economic growth with very low rates of unemployment. Prices of raw materials were stable and relatively low while labour was flowing without major disturbances from agriculture to the manufacturing and service sectors. Excess demand for labour was met by a steady inflow of labour from abroad. This period was also characterised by sporadic government intervention to influence the pattern of national industrial production. Relatively free markets were operating smoothly without significant disruption. During this period the General Agreement on Tariffs and Trade (GATT) was active in the lowering of tariffs. Foreign trade was growing faster than national production.

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* This article was written during my research programme (1986-87) at Queen's University, Kingston, Ontario. I am grateful to the World University Service of Canada and the Department of Economics of Queen's University for full financial support. Michael Spencer and a referee gave a number of helpful comments. The usual disclaimer applies.
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The "golden sixties" were followed by a period whose first characteristic was a sharp increase in the price of oil in 1973. This triggered rises in inflation, unemployment and reduction in the rate of growth throughout the world. International competition increased sharply because suppliers were fighting on the shrinking markets. The free market system was not capable of coping satisfactorily with this situation. There appeared an awareness that there is a need for alternative (other than free market) industrial and trade strategies to cope with this situation.

The European Economic Community (EEC) and the US have responded to these circumstances primarily by protectionism. These and other industrialised countries realised that the solution to lagging productivity, recession and deteriorating export performance may be found in policies which affect the development of national industry. Adams (1983, p. 405) argues that inadequate economic performance is not a sufficient condition for the justification of industrial policy. His point is that the question was not whether the economy was operating (un)satisfactorily but rather whether an industrial policy might have achieved a better result than a free market system. Any policy has to be tested according to its gains and losses in a dynamic context.

Once free markets lose credibility as efficient conductors of economic life, the introduction of intervention (economic policies) seems inevitable. Curzon Price (1981, p. 20) states that the choice might be between the risk of leaving the economy to the imperfect enterpreneurs and possibly even greater risk of having it run by imperfect governments. Risk taking (enterpreneurship) has been a significant engine of economic growth. These benefits are not without risk, of course. The cost of adjustment is borne by those who are powerless. The socialisation of risk in the form of various economic policies may introduce a safer life, but may prevent both a free operation of enterpreneural activity of individuals and an even greater increase in the economic pie. Blais (1986, p. 41) suggests that this process may be seen as a reconciliation of the public's desire to see a happy marriage between progress and stability. But those which have full confidence in the operation of a free market system say that the market will take care of itself. Why bother to change those things which will happen anyway?

Lipsey (1987a, p. 117) states that the most influential reasons for intervention may be found in the loss of a competitive position, the management of expansion of new and decline of old industries, the management of industries subject to scale effects and spillovers and attracting footloose industries.

The relative share of industry and agriculture in GNP and employment has been continuously declining in the industrialised countries over the last three decades. The GNP of the industrialised countries on average consists mostly of services (60%), while the rest is distributed between manufacturing, 35% and agriculture, 5%. Hence, the process of de-industralisation leads countries to the post-industrial society. These economies may be named service economies rather than industrialised because industry is a relatively dying sector in relation to services. One has to be cautious with such generalisations. Many services (around a

half) are directly linked to the production of goods like transport, financial and other business services. These services are not directly aimed to individuals for their their personal consumption. If they are added directly to the relative share of manufacturing and agriculture, these sectors may significantly increase their relative share.

Tyson (1987, p. 79) classifies services and jobs which they create as business, financial, engineering, consulting and legal which require high skills and pay on the one hand, and other services geared to consumer and welfare needs like jobs in shops and restaurants which require poor training and have a high turnover and low pay on the other. Economic development in its post-industrial phase should be aimed at the creation of jobs in the former group rather than in the latter.

A relative increase in the demand for services and growth of this sector was made possible by an increase in the productivity of the manufacturing sector. This has made more resources available for the service sector of the economy. Increase in productivity has lowered the price of manufactured goods, hence there appeared an increase in disposable funds for the consumption of services. This makes industrial policy significant for the consideration. We shall first explore the meaning of an industrial policy, then its instruments, approaches to this policy in different countries will be encountered next, and finally we shall cast doubt about the possibility for the implementation of an industrial policy both in single countries and economic unions.

2 WHAT IS THE MEANING OF AN INDUSTRIAL POLICY?

There are various definitions of industrial policy. Before surveying them, we should keep in mind the difference between competition and industrial policy. Geroski (1987, p. 57) states that the former is directed towards the freeing up of the market forces while the latter is seeking to channel them.

Some definitions of industrial policy are very specific. Brander (1987, p. 4) defines industrial policy as coordinated targeting. It is the selection of parts of the economy like firms, projects or industrial sectors for special treatment (targeting), which is coupled with a coordinated government plan to influence industrial structure in defined ways (coordination). McFetridge (1985, p. 1) thinks that industrial policies are those government policies which are intended to have a direct effect on a particular industry or firm.

Other definitions of industrial policy are broad and include many areas of public policy. Curzon Price (1981, p. 17) defines it as any government measure or set of measures to promote or prevent structural change. Adams and Klein (1983, p. 3) use industrial policy to mean all measures which improve the economy's supply potential: anything that will improve growth, productivity and competitiveness. Tyson and Zysman (1987a, p. 19) look at industrial policy as a governmnet policy aimed at or motivated by problems within specific sectors. The "problems" are presumably in both sunset and sunrise industries. The solutions to

these problems need not necessarily be sector specific although that is a possibility. Blais (1986, p. 4) defines industrial policy as the set of selective measures adopted by the state to alter industrial organisation. Whalley (1987, p. 84) states that an industrial policy implies intervention by a government which seeks to promote particular industries in some way. This may be either to stimulate production and growth of industry's size or to promote export sales. He does not include government influence on the decline of an industry.

Industrial policy may mean different things for various countries at different times. Developing countries look at industrial policy as a means of economic development. Once they become developed, industrial policy may be directed towards fostering free competition. In the centrally planned economies, industrial policy means planning and imposing targets to each production sector.

Industrialised countries have had industrial policies in their implicit form for a long period. They were embodied in trade and other policies which have secondary effects on industrial policy. This is due to the interdependence of economic policies within the economic system. Therefore some countries have joint ministries of industry and international trade. This is the case in the British Ministry of Trade and Industry and the Japanese Ministry of International Trade and Industry (MITI).

The whole period after World War II was characterised by reductions in tariffs as well as measures to prevent the demise of sunset industries in most developed countries. Pinder, Hosomi and Diebold (1979, p. 9) draw our attention to the fact that governments' industrial policies may be a simple continuation of old protectionism by more sophisticated means. The governments' tax and transfer policies have had their impact on demand which affected industrial production. By direct production and supply of public goods governments influenced, at least in part, the industrial structure of their economies. Other gvernment policies, like foreign policy have nothing to do with the increase in the economic pie of the country. This is the case when some governments ban the export of high technology abroad.

Various economic policies have their impact on industrial policy. It is not only trade policy, but also social, regional, energy, transport and others. Hence most definitions of industrial policy include at least implicitly the need for a stable economic environment and coordination of various economic policies. Only then may specific targeting of industrial policy have its full contribution to economic growth and improvement in productivity and competitiveness. On those grounds broad definitions of industrial policy may embrace all of these facets. Hence we take industrial policy to mean such an economic policy which shapes a country's comparative advantage. Its aim is to influence the change in national economic structure in order to enhance the creation and growth of national wealth rather than to distribute it. The need for industrial change comes from an increase in GNP, changes in technology, foreign competition as well as changes in demand and the economic environment.

Adams and Bollino (1983, p. 15) identify several types of industrial policy with respect to its scope:

1. General or nonselective industrial policies are available to all industries on equal terms. They include credits, education of manpower and provision of public services.

2. Activity-specific policies are selective with respect to particular activities of the production process like support of research and development (R&D).

3. Region-specific policies are not targeted to a particular industry or activity but rather to a selected area of the country.

4. Sector-specific policies are directed towards broad sectors of the economy like agriculture and manufacturing.

5. Industry-specific policies deal with specific industries within a broad sector like computers or candy production.

6. Firm or project-specific policies are designated to affect particular firms. These policies range from the provision of infrastructure to subsidies and bailouts.

These types of industrial policies, though, do not appear in pure form because any of the mentioned actions may affect several types of these policies simultaneously.

We find three types of industrial policy. First, this policy may be market oriented. This policy approach fosters competition and free markets. Second, industrial policy may be directed as in the centrally planned economies. Third, in practice industrial policy is often a mixture of these two. Industrial policy may be adjustment-prone and adjustment-averse. Adjustment-prone industrial policy stimulates adjustment of various industries to enter new production, remain competitive or ease exit from some lines of production. Adjustment-averse industrial policy is the policy of protection which impedes changes in an economy by preserving the *status quo*.

3 IMPLEMENTATION OF INDUSTRIAL POLICY

The standard comparative advantage and factor proportions theories of international trade may be satisfactory for the explanation of trade in primary goods. They are, however, less so in the explanation of trade in industrial goods. Harris (1985, p. 148) views manufacturing as a collection of industries with no factor abundance base. On those grounds it is difficult to explain why France exports perfumes while Japan exports copiers. Tyson (1987, pp. 67—68) writes that a country's comparative advantage is not given by resource endowment but is shaped over time by actions of both business and government. Economic policies of the government may affect comparative advantage over time by influencing the quantity and quality of labour, capital and technology. She also states that the comparative advantage in manufacturing industries is not an unchangeable facet of nature but rather the outcome of economic policies which affect incentives to save, invest, innovate, diffuse technology and acquire human capital. As one of the most fervent advocates of industrial policy, Tyson (1987, p. 71) notes that market imperfections were at the margin of orthodox economic analysis, but these imperfec-

tions are in the center of analysis of contemporary industrial policy and trade theory literatures. A country's size; regional disequilibria; skill, mobility and unionisation of labour; antitrust and bankruptcy laws are just a few imperfections. She states that to ignore them is to miss the point that their effects can be mitigated by policy. This does not dismiss the traditional theory, but rather moves it closer to reality because the traditional theory ignored costs of adjustment to free trade and technological changes.

A reduction in tariffs may increase a country's market. Free markets are imperfect to make the necessary structural adjustments. These are the shifts of resources from the lagging to the growing industries whose future is not certain in the long run. The adjustment is not necessarily a swift and smooth process. Adjustment policies may facilitate these shifts. But may imperfect governments make this shift any better than imperfect markets? In some cases they may. The time horizon of private markets is relatively short. They may not foresee a countries' long term needs with a high degree of accuracy. Private markets may seek quick payoffs. Japanese manufacturing is financed to a large extent by bank credits while the US industry uses this source of finance to a much lower extent. Hence, the US industrial production is much more affected by the short term interests of shareholders than the Japanese. A government policy may change this short term outlook towards longer term economic considerations. In a different case, risk-averse governments may organise stockpiling in order to cushion the effect of a possible crisis which private markets may not have the wish and funds to do in the long run. Moreover, basic research provides significant spillovers throughout the economy. These social gains are difficult for private markets to grasp in most cases because the private risk and costs may be very high. The fruits of successful basic research fuel technological progress in the country. This research is funded in full or in part by the government in direct (subsidy) or indirect (tax relief) ways in most countries. Industrial policy may facilitate economic adjustment in a more efficient and equitable way than free market forces. This policy may provide investment subsidies, unemployment benefits and vocational training, protection and other support in the early fragile times of a new industry which free market forces fail to do. Yet another reason for the introduction of an industrial policy is that it may be able to respond with different internal and external measures to foreign countries' economic policies. Left alone, the market forces may take the advantage of foreign policies in the short run but if the foreign long term strategy is to undermine the importing country's home production by means of predatory princip in order to create a monopoly, then the long term effect may be detrimental for the importing country's economic situation. An industrial policy may be a suitable response because it may change the possible free market outcome.

Tariffs were historically the most important instrument of industrial policy. However, due to a number of rounds of multilateral reduction in tariffs under the GATT, the use of this instrument was restricted and reduced, but there appeared other instruments. Some of them per-

sonify protectionist pressures against adjustment, while others are adjustment oriented. They include subsidies for export, production, R&D and investment; tax and credit policy; public purchases; price and exchange controls; technical standards; direct production by the state; competition and concentration policy.

Many of these instruments may be applied to a single target simultaneously. They may sometimes be in conflict. If the aim is an increase in efficiency, then competition and concentration may be conflicting. It is accepted that many industries may not operate efficiently without a certain degree of concentration which is dictated by minimum economies of scale. So, a certain degree of concentration has to be accepted. Small countries usually do not have very restrictive anti-monopoly laws because efficient production for their home market and possibly foreign markets often allows the existence of only one production unit. Countries like France foster the policy of concentration and efficiency, while others like the US, due to the huge home market, have strong anti-monopoly legislation which favours free competition.

It was a strong belief in Europe in the 1960s that big American-style companies are the key factor of economic growth in a country. These companies may, among other things, spend substantial funds on R&D. Hence, mergers were encouraged. But experience has shown that those countries which spend most on R&D do not necessarily have the highest rates of growth. It was also realised that small and medium size firms are the important factors for economic revival and employment. Subsequently the policy which strongly encouraged mergers was abandoned. It is recognised that the jobs created by small and medium size companies are greater in number than those created by large companies. However, jobs created by small and medium size companies often have the disadvantage of being relatively less secure than the ones in big companies.

Production subsidies

The effect on a tariff on imports of a commodity is equivalent to a combination of a tax on domestic consumption and a subsidy to home production of the same good. Tariffs and production subsidies act like close substitutes. A reduction of one of them may be compensated for by an increase of the other. A domestic tariff increases prices both of imported goods and home-made protected goods (at least in the short run). This distortion has as its cost both the loss of gains from exchange and gains from specialisation. A cost due to a subsidy is a loss of gains from specialisation due to the distortions of prices of home-made goods. Both a tariff and a subsidy move resources out of exports into import-substituting industries. Thus, at least in the long run, a restriction of imports is concomitant to a reduction in potential exports when a fixed amount of resources is fully employed prior to the introduction of distortions.

Brander and Spencer (1985, p. 84) cite the referee to their article and indicate that firms play Cournot-Nash games against all other players (each firm decides on a course of action, e.i. *output*, on the assumption that the behaviour of other firms remains constant), while

governments play a Stackelberg game (an agent knows the reaction of others) against firms and Cournot-Nash against other governments. They forget that these are all games which may produce relatively unstable solutions and price fluctuations. Collusion among the players may lead to relatively stable Chamberlin solution.

If country A is subject to subsidised supplies of good X from country B, country A should consider the consequences of such circumstances. If country A obtains the good at a lower price from country B than from her domestic producers, then her consumers are better off, although her home producers of good are worse off. All this is at the expense of country B's taxpayers. If country B is willing to supply country A with the subsidised good X indefinitely, then a smart policy for country A is to accept these supplies and shift domestic resources to activities where the return is higher in relation to the return to home production of the good X. However, if country B subsidises her exports of good X in order to discharge cyclical surpluses or in order to prevent the entry of country A's firms into the market of good X or to drive them out of it in the long run, and intends later to charge monopoly prices, then country A needs not accept this offer as the only source of supply.

Although tariffs introduce two distortions (in production and consumption) while subsidies only one, the GATT does not prohibit tariffs while its Code on Subsidies and Countervailing Duties prohibits export subsidies (with the exception for primary products) if such subsidies cause injury to the importing country. In the situation of a balance of payment deficit the International Monetary Fund recommends a tariff but does not advise the use of export subsidies.

Wonnacott (1987, p. 86—87) finds that these preferences for tariffs are due to compelling political realities. He argues that we are used to tariffs while subsidies personify unfair competition. We can not force foreigners to eliminate their tariffs on our exports but we may, if we identify their subsidies, make them remove these by the threat of imposing countervailing duties. An international abolition of tariffs would be ignored while a prohibition of export subsidies legitimises retaliation by means of countervailing duties. Of course, there are other incentives for the introduction of subsidies. Let us consider them in turn.

Firms invest because of the anticipation of profits in the future. Investments are undertaken because markets are foreseen, costs of production make profits possible, and funds at acceptable rates are available. If profit opportunities are fading away, then unemployment may rise. Governments are reluctant to accept such a state of affairs so they offer subsidies (investment, production and export), among other things, to firms in order to alter these trends. If a country wants to protect all the firms in an industry, then an outright subsidy may be a better alternative to reduced tax rates. A subsidy might help all firms while reduced tax rates may help only those that are profitable. The latter instrument may be preferred if the policy aim is to remove the lame ducks.

A valid case for subsidies can be market imperfections. Unemployment was a cyclical phenomenon in the past. Nowadays, its nature is different. In many cases labour needs retraining in order to be hired.

A subsidy for vocational training may be a valid case for its introduction.

A special type of a subsidy may be present in government procurement policies. By discriminating in the award of government contracts, a government may sharpen the competitive edge of an economy which is very important during the first steps in the development of an industry, commodity or service. A firm's shareholders thus receive income transfers from home taxpayers. If the industry is successful and if sunk costs are high, then late-comers may not enter the market. This strategic pre-emption of the market may provide the firm and the country with super-normal profits from sales on foreign markets. One example is the purchase of defence equipment as a subsidy to high-technology firms. A special type of subsidy may be also present in goods and services supplied to firms and citizens by the government. These goods and services are offered at lower prices by government enterprises than by private firms which must pay taxes. Brander (1987, p. 28) notes that when managers of companies start spending more time lobbying for government grants than worrying about the actual operation of their companies, taxpayers and consumers should get nervous. The long term prosperity of a country cannot be promoted by subsidies to inefficient firms. By doing so, new wealth is not created but an extra tax is imposed on the prosperous.

Flam and Helpman (1987, p. 94-5) state that an output subsidy is preferable to an export subsidy. The rationale is that an output subsidy does not necessarily lead to higher domestic prices of differentiated products as is the case with a tariff or an export subsidy. One may add that output subsidies are often tacitly accepted, while export subsidies are often subject to countervailing duties. They argue that an R&D subsidy always expands these activities, more varieties appear and more firms enter the industry. The price of differentiated goods may increase or decline, as an increased number of firms may result in lower output per firm. This R&D subsidy may therefore improve or deteriorate welfare.

Foreign subsidies may induce countervailing duties of injured countries, if the injured countries do not either produce or have some potential for the production of a good, then there are no grounds for the imposition of these duties. The relative size of trading partners and their relative openness to trade plays a crucial role. Thirsk (1985, p. 145) argues that relatively small countries are more reliant on external trade than larger countries. He notes that a small subsidy to an import-competing industry in a large country may have a more distorting impact than a large subsidy applied to a small country's exports.

One of the most obvious expressions of subsidies was the United States Domestic International Sales Corporation (DISC) which supplied tax benefits to US exporters. Caves and Jones (1985, p. 253) state that initially, the DISC allowed exporters an indefinite postponement of the payment of about a quarter of the income tax on their export profits. Thirsk (1985, p. 151) notes that the GATT Council in 1976 found the DISC to be a direct export subsidy programme in conflict with the GATT rules. The current legal embodiment of the DISC is *the Federal* Sales Corporation.

Subsidies may diminish incentives for the advance of profitable firms if they are taxed constantly in order to provide subsidies to inefficient firms. A subsidy which stimulates the introduction of new capital may distort a firm's choice among technologies which use capital and labour in different proportions. If a firm had to pay the full cost of capital it might have chosen another technology. A one-shot subsidy to investment may help a firm buy time and adjust to an unexpected change in demand or technology. If subsidies are provided on a permanent basis for the protection of employment to an industry or firm, its management does not need to perform its role as efficiently as in the firms or industries where market criteria dominate. A permanently subsidised industry or firm is a very likely candidate for nationalisation.

The promotion of the adjustment of some industries does not always go smoothly. Some sunset industries are well established, relatively large employers and possess a strong political lobby. This is often the case with the steel industry. Some steel firms are quite successful in their adjustment. Trebilcock (1986, p. 141) states that the US Steel Company closed thirteen steel making units and diversified out of steel. This company invested funds in a shopping center in Pittsburg, Pennsylvania and chemical facilities in Texas. Steel making accounts for only 11% of the US Steel Company's operating income. Other steel companies like a steady life. They are able to mobilise political forces and government instruments (tariffs, quotas, subsidies) in order to resist adjustment (contraction of protection and making labour redundant).

Curzon Price (1981, pp. 27—29) argues that the policies of shoring up a dying sector is like moving forwards but looking backwards. She proposes that the policy of compensation to redundant labour may be superior to the policy of shoring up sunset firms. Compensation to redundant labour needs to be provided by the whole society because the whole society benefits from the process of industrial change. Shareholders of dying firms should not be compensated for the depreciated value of their shares because they should channel their funds to the growing sectors which need capital, not to the ones which are declining and which do not need it.

The British experience has shown that rescuing sunset industries (coal) to protect jobs is not a safe way for re-election. The taxpayers and consumers have increased their awareness of the costs of such a rescue. However, the influence of trade unions in sunset industries may still mobilise a strong lobbying influence in many countries.

In contrast with the sunset industries, the sunrise industries need venture capital, they may be quite small, numerous and unstable. Their voice may not be able to make as big ado as the voice of sunset industries when they are in trouble. Investment in these firms is risky because many of these firms demise before they reach maturity. But these firms are the most propelling agents of the modern economy. Although many of them disappear from the market, many of them are created. A high rate of natality of new firms is the best expression of the vitality of the system which creates incentives so that many new enterprises may be started and risk accepted.

There is wide agreement that all protectionist measures offered to an industry should be conditional, otherwise the problems of an industry

may be exacerbated. If the protected industry is a sunset industry, then its adjustment may be postponed or reversed by, say, subsidies. This increases costs to the society in the long run because the desired change does not take place.

Direct R&D subsidies or indirect subsidies in the form of government purchases are powerful instruments for the support of industries which introduce new products. In the early unstable phase of the introduction of a new product a secure government demand provides a powerful impetus for the firm to shape the product and open new markets. If this production does not become self-sustaining within a specified period of time, then it may never become profitable and resources which may be allocated for protection in future may be used elsewhere with a greater efficiency in improving competitiveness. A long isolation of an industry from market forces may remove incentives for the swift reaction to signals which come from competition in international markets.

Trebilcock (1986, p. 289) proposes that protection to an industry may be given on the condition that the schedule of protection/intervention will be revised downward over time. This strategy may provide a limited adjustment period to the industry by mitigating the full impact of international competition. This programme does not ensure the existence of inefficient industries and firms but rather their adjustment and exit from the sunset sectors. Tyson and Zysman (1987b, p. 425) argue that the self-liquidation of protection is perhaps the only means for maintaining the incentives to adjust. They argue that if the adjustment programmes offer funds to firms, then there must be an obligation that these funds must be spent on specified activities. The adjustment programmes should be overseen by technical advisory boards which represent a wide community.

We have observed hitherto that state intervention was primarily directed towards the problem industries. They are usually coal, steel, textile, footwear and agriculture. There is a growing interest in intervening in the sunrise industries. Intervention here is in the form of providing or subsidising innovation, R&D in firms, special tax treatment of new technologies (tax holidays and subsidies), training of labour as well as more general instruments like planning, policy guidelines and exchange of information.

Finalising the discussion of subsidies, we come to the point to present reasons for their public avoidance. Lipsey and Smith (1986, p. 100) state that governments dislike direct subsidies because they place the cost within the government's budget, while regulatory measures place the cost on the private sector. If a government subsidises then it must tax elsewhere, take credits and/or reduce supplied benefits. Subsidies are readily measurable and receivers identifiable. Costs incurred by a tariff are spread over numerous consumers and its effects can hardly be measured. A subsidy may be offered on a "one-shot" basis but often it becomes a "multi-shot" commitment which often ends up in the nationalisation of a bankrupt firm.

Robson (1984, p. 53) notes that the costs of financing and disbursing subsidies may be quite high whereas the administrative costs of the implementation of tariffs are relatively low and the proceeds are easy

to collect. The administration for the management of subsidies may be formidable and quite difficult to handle.

Yet another reason which prevents the introduction of subsidies is international commitments like membership in the GATT. Subsidies may lead to foreign retaliation which would make the trade balance even worse. Some countries may enter into a subsidy warfare with other countries in order to attract investment. This action may induce greater distortions than the case with tariffs.

Both tariffs and subsidies, as policy instruments, introduce distortions. Therefore any policy which involves either instrument should be carefully considered. In comparison to free trade, the situation involving imperfect information and either of these instruments is sub-optimal. If a country subsidises, then it might gain an advantage, but only temporarily. Johnson and Krauss (1973, p. 240) conclude that anything that attempts to supply a country with a disadvantage in exporting in the short run, will cause the adjustment of the exchange rate or factor prices in the long run. Protection distorts market signals. Tyson and Zysman (1987a, p. 53) state that even though protection is a second-best strategy by economic criteria it is a workable and often superior political strategy.

The level of industrial policy may be specific and general. The choice is between discrimination and non-discrimination. The level of intervention should be as high as possible and general, that is, available to every firm and sector. Once the policy is installed, the market is the best mechanism for the fine tuning of which sectors or firms should use the policy instruments. The policy should be sector or firm-specific (targeted) only as the last resort because the government does not have perfect knowledge and may well make the wrong choice like the French and British Concorde project.

Picking the winner

If the level of industrial policy is selective, then it is coupled with the policy of picking the winner or national champion. This has always been difficult, risky and demanded considerable and costly information. If it were not, than you would probably not read this piece of work but rather look at the stock market report, invest and increase the value of your assets by several zeros daily.

The policy of singling out industries or firms for special treatment puts the problems of all others aside. The "neglected" activities may be at a relative disadvantage because they may not count on direct support by the state if they happen to be in need. The neglect of sunrise industries may reduce the risk incentive attitude of enterpreneurs and jeopardize growth in the future. Tyson and Zysman (1987a, p. 22) argue that if a government can not formulate the basic structural objectives of national economic policy, then it will have to leave it to the politically strongest segment of industry. They go on and state that the policy will be formulated in a hurry in response to political pressures of the moment with the likely result of protection for troubled industries. Independence, resistance to sectoral pressures and clear economic ob-

jectives of the government remove extemporisations in economic policies. Otherwise, the industrial policy of the country will be an instrument for the support of the obsolete sectors and a brake on the expanding ones.

There are three basic issues with respect to targeting. They are: which industries or firms should receive support, what kind of support should be provided and finally, for how long? The industries singled out are usually the ones which are significant employers and those which have important spillover effects on other parts of the economy. If the private markets favour less risky enterprises, the government may single them out like development of alternative sources of energy for special treatment. If domestic regulations with respect to safety standards are stricter and more costly than abroad, if other things are equal, this may put home firms at a relative disadvantage in competition with foreigners. This may be a valid case for some support. Political reasons like national defence and pride may influence decisions about the support of certain industries. This assistance should be ceased as soon as the beneficiary becomes profitable, once it becomes obvious that it will never happen or after the specified period of time for assistance has expired.

Japan is the example of a country which has reaped the fruits of conscious targeting of certain sectors. During 1960s the targets were production of steel and schipbuilding because of their significant beneficial effect on the economy. During the 1970s the targets were machine tools and cars. The target for the 1980s is electronics (copiers, computers, audio and video equipment). The target for the 1990s is semiconductors. This may be taken as an example of the shaping of comparative advantage in a dynamic context.

McFetridge (1985, p. 29) concludes that the Japanese targeting is most notably an information collecting and interpretation process which helps the individual firms in making investment decisions as well as guiding the government in allocating support. The emphasis is on technological areas rather than on firms.

France is a country whose concern is in the creation of large and efficient firms which may compete in international markets. This country is not very concerned with home competition. France's Interministerial Committee for Development of Strategic Industries targets the key sectors, defines the strategy and picks a firm as a national champion to implement the programme. The means for the implementation of the programme is a contract between the government and the firm. The government does not have perfect foresight. Mistaken judgements have happened in very costly projects like computers and Concorde.

Targeting of certain industries or firms has not been a striking feature of the US industrial system. This system is established in such a way as to foster individual freedom, not to discriminate among firms or industries. The only exceptions are agriculture and sporadic bailouts of firms like Chrysler.

Brander (1987, p. 40) guesses that the government planners in Japan and France are more competent and sophisticated than the managers in the private firms. He states that the best and most ambitious

students aspire to government service just as many talented Englishmen gravitated last century to the Foreign Office and the Colonial Office. In North America, sociology is different. Many people look on government jobs as inferior to private ones. It is not surprising to find Japan and France having an industrial policy, while the US and Canada do not. Brander thinks that shoddy economic policies may be easily amended if civil servants were given a freer hand by the system.

Case of the United States

The objective of the US economic system is to remove impediments to free operation of market forces and to enhance the virtues of private enterpreneurship. Industrial policy has been left predominantly to market forces. The US industrial policy has neither been the widespread use of industry specific policies, nor intentional, coordinated or planned. It has not consciously chosen national champions because of a strong faith in fair play, the *laissez faire* doctrine and non-discrimination. This policy has not supported widespread nationalisation. The administration has been very hesitant to bail out private firms which are in trouble by loan guarantees. The exception is agriculture which has been singled out for special treatment by the government in every Western country. The US administration has occasionally resorted to bailouts in order to help firms like Lockheed and Chrysler. Concerns behind these moves were national defense and employment. The US industrial policy has not relied on nationalisation, cartelisation or merger promotions. The government has not provided strong support for exports. Wescott (1983, p. 88) thinks that the Domestic International Sales Corporation programme was nowhere near to the programmes of other developed countries.

The US industrial policy has been attempting to maintain a favourable climate for business. Rather than having a single coordinated industrial policy, this US policy has been a series of separate policies which affected certain industries. The most notable feature is that these policies stem from various government actions like procurement of military hardware, aircraft, space programmes and others which have substantial spillovers on to the rest of the economy. A permanent US policy may be found in agriculture. The industrial policy has helped the structural adaptation of textiles and footwear industries, it also gave some support in export financing and it has continuously encouraged technological change and innovation. The most planned and conscious part of the US industrial policy ever undertaken according to Wescott (1983, p. 90) is the policy of accelerated depreciation. The adoption of a shorter life of assets and investment tax credits stimulates investment and promotes technological change.

The US firms have the advantage over firms in many other countries of having an unimpeded access to a large domestic market. The US firms capture economies of scale, so they produce standardised products as a rule. Demand for the variety of products has increased the penetration of foreign suppliess who serve specific US market segments. The US domestic competitive inefficiency on these growing sub-

markets has tended to divert attention from the failure to adjust to home demand towards unfair trading practices of some foreign suppliers. The government has offered assistance to the affected industries through protection from trade which is adjustment retarding policy, instead of propping up the restructuring the industry. The adjustment of the protected US industry has not taken place in the form of rationalisation and innovation in order to meet domestic demand and foreign competition, instead the US companies went abroad to take advantage of cheaper foreign labour.

The US has a special responsibility for the proper operation of the market oriented world economic system. Failure to adjust to international competition may undermine this commitment. An industrial policy in the US may be suggested as a solution to this problem of industrial restructuring. There may be a strong case against the US industrial policy if this policy is used to restrict imports and subsidise exports. This may endanger the market-oriented world economic system.

Case of Japan

We have encountered the Japanese industrial policy on several occasions. We shall note here some other interesting facets of this policy. Trebilcock (1986, p. 241) states that there exists an open and institutionalised communication mechanism between the government and the economic community. This system permits the planning and shaping of industries before changes in the international market drive the government and business to take reactive measures to deal with the adjustment of sunset industries. The Japanese system permits the key players to anticipate changes and deal with them in advance rather than to react to changes by the difficult adjustment of obsolete sectors.

Tyson and Zysman (1987a, pp. 35—37) list the objectives of the Japanese intervention. They state that this policy is used to assure that resources for expansion come from domestic financial markets, to assure that the domestic market is safeguarded, to assure competition among home producers and to encourage and assist exports. Taken together, these policy objectives represent a powerful development strategy. They also write that the closure of the Japanese market to foreign competition makes the battle for future markets of industrial products a struggle over the US and the EEC markets. One has to note that despite very limited financial resources in many of the developing countries, they do represent potential markets in the future. The Japanese have a secure market based at home. This means that a single slip by US producers may undermine their long term competitive position, whereas a Japanese slip may be recovered and overcome later by Japanese firms.

Tyson (1987, p. 70) thinks that industrial policy has to be constructed more broadly than trade policy. She states that industrial policy in Japan encompasses traditional trade policies which are used in conjunction with control over foreign direct investment, financial and interest rate policy, R&D policy and others. The strenght of policy intervention has been declining in Japan since the early 1970s.

An interesting feature of the Japanese economic system is the role of banks. They are very much involved in the financing of industrial investment, while shares in equity play a much smaller role. The government proposes the areas for the financial support which the banks follow closely.

Japan does not have a very strong record in basic research in relation to other industrialised countries. In most cases Japan uses the results of basic research in Europe and the US. Japan has an excellent record in the carrying out of applied R&D which has support from the government but is carried out in private companies which respond to market signals while developing products for commercial use.

A fast structural adjustment to changes (or prior to them) in the international trading system has been an exemplary success of Japan. Lipsey (1987a, p. 123) points out the Japanese willingness to permit the phasing out of production in industries which are growing in the newly industrialised countries, allowing Japanese resources to move to higher-income-creating lines of production and providing a ready market in Japan for the products of these countries, thus allowing them to buy "up-market" goods from Japan. Industrialised countries may take a page from this method of adjustment. Lipsey (1987a, p. 139) cites Hamada who asserts that the Japanese industrial policy is a collection of more or less independent policies which do not follow a coherent and well-developed plan.

Brander (1987, pp. 36—37) argues that the comparison of the relative size and growth rates of GNP of Japan on the one hand, and the EEC countries and the US on the other, may be misleading. The Japanese work more days per year than workers in other industrialised countries where wealth is consumed in the form of increased voluntary liesure. Health problems that accrue from the relatively high level of congestion is not properly accommodated in the GNP. Finally, comparing growth rates may also be misleading. Economic growth may be maximised by allowing only enough consumption for subsistence and by investing everything else. However, not many people would like to live permanently in such a society. One may add that the Japanese social system is relatively undeveloped. The primary social concern was fast industrial growth, while it was left to companies to provide health, housing and other benefits to the employees.

Finally, there is the hope expressed by Tyson and Zysman (1987a, p. 37) that the key to the Japanese advantage does not lie in the unique characteristics of the Japanese workers but rather in the Japanese managerial strategies. For it may be simpler to copy managerial technologies than to alter the sociology of the workforce.

Case of France

The French government has the tradition of being profoundly involved in the economic life of the country. The most striking feature is the plan. This feature of the French economic system is often confused with the dirigist planning system in most of the Soviet-style econ-

omies. This is not the case in France. The system of planning creates links between the administration and industry. It is a continuous information-gathering and exchange process among state officials, and business and banking elites who share a common social and educational background. Their common aim is to formulate, coordinate, and implement actions for the smooth advance of the French economy.

A notable feature of this powerful, continuous and silent dealing among high officials is that consumers' and workers' interests play a minor role in the whole process. This is due to a relatively low level of unionisation of labour, their particularisation and weak links with the government.

The state is directly involved in a very wide range of industries in addition to the plan. These undertakings are required to operate on the principles of efficiency. If they become unprofitable they are seldom bailed out for the reason of maintaining employment. This is in contrast with their Britsh counterparts. The French aim is to foster large and efficient national firms which may compete internationally.

Case of West Germany

The property of the W. German economic system is that the government does not play a direct role in economic life. Its aim is to maintain stability in the economic system which will permit the orderly functioning of market forces. The federal government is well-protected from specific sectoral influences and it intervenes rather indirectly through welfare, vocational training and regional programmes.

If an industry is in trouble, then it may ask for assistance from the federal government. This body is very well shielded from various political influences. Trebilcock (1986, p. 278) states that assistance is granted on a regional rather than a specific industry basis. To determine the recipients, a three-quarter majority vote is required. The outcome is that no individual state interest may dominate the process.

The role of banks is vital in both economic adjustment and determining the recipients of government aid. Banks serve as an early warning mechanism for the identification of the lame ducks. They are free from political pressures that may be exerted upon the governments, so they may speak their own mind. All programmes which ask for the government's assistance must be approved by the banks. The banks must commit their own funds to support the adjustment. Inefficient firms are allowed to close down and the bailing out of AEG Telefunken in 1982 was a rare exception. The government's aim is to keep inflation low, an expansion in the assistance to industry would either increase inflation or shrink welfare programmes.

W. German labour organisations have generally been very supportive of the change in the industrial structure. Their cooperation is based on the awareness of the country's exposure to foreign competition. The adjustment is supported by general programmes that give impetus to professional and geographical mobility of labour.

The W. German approach to industrial policy is well-protected from interests of individual sectors or firms. Banks play an important role in this relatively depoliticised industrial policy.

Case of Britain

Industrial policy in Britain stands in sharp contrast to policies which promote adjustment. It may be taken as an example of policies which prevent change rather than promote it. The British industrial policy is based on assistance to inefficient industries. In spite of differences in rhetoric, both Labour (interventionists) and Tories (non-interventionists) pursue very similar policies from the Cabinet. This is not solely the property of the British life.

British industrial policy is geared towards the solution of the regional problem of unemployment rather than towards the shaping of comparative advantage. The problem of unemployment is further exacerbated by the policy of subsidised housing. Labour does not necessarily move towards the growing regions where the lists for this kind of housing are long because it may lose this privilege in the troubled regions where these lists are relatively short.

The British industrial policy has been characterised by scattered attempts y the government to preserve the *status quo* by preserving jobs in obsolete industries. Structural adjustment of the economy does not take place when many inefficient jobs depend on ongoing government assistance. Instead of supporting the exit from declining sectors, this policy ensures their survival and it increases costs to the society in the long run. The British policy personifies the inability of the government to resist the political pressure from influential groups with a notable exception during the coal miners' strike in 1984.

Case of the EEC

The Treaty of Rome has not explicitly asked for the introduction of an industrial policy as was the case with agriculture. The Treaty regulates only the rules of competition in the EEC. These rules, together with foreign trade policy instruments, were the tools which were used by the EEC in the conducting of its industrial policy. The use of all other instruments of industrial policy is severely restricted.

Despite its costs and postponement of adjustment, protectionism has been the instrument of EEC industrial policy. Resistance to abandoning obsolete technologies and industries permitted others, most notably Japan, to gain the competitive edge and penetrate the EEC market with many high technology goods. If the instruments of protection and cartelisation (in the coal and steel sector) are not coupled with other tools of industrial policy which ensure contraction of obsolete industries or assist for a limited time the introduction of new industries, then such a policy may be ineffective. It may be pursued by those who can afford to be wasteful.

The following articles of the Treaty of Rome provide the legal framework to the EEC competition policy. Article 85 forbids all agreements among undertakings which have as their object or effect the prevention, restriction or distortion of competition within the common market. Article 86 outlaws any abuse of a dominant position in the common market. This means that the dominant position is permitted but its abuse is not. This means that the big are provided with power but they are forbidden to exercise it. The EEC cannot control mergers in advance. It may only act upon a charge that a firm abuses its dominant position. Article 92 regulates state aid. Any aid which distorts competition among the member countries is prohibited. There are a few exceptions like aid to regions affected by calamities, aid to projects which are of interest to the EEC and regional development aid which does not endanger competition.

The EEC attempted to change its atrophied industrial policy by the introduction of a more forceful industrial policy. Along these lines Spinelli's Report of 1973 offered the Action Programme in the Field of Technological Industrial Policy. Its aim was the removal of nontariff barriers to trade, liberalisation of public procurement, removal of fiscal and legal obstacles to mergers, promotion of modern technology as well as coordination of industrial with regional, trade and social policies. This broad strategy has not succeeded because of different economic philosophies among the member countries. After the oil crisis the member countries pursued nationalistic industrial policies and were not very interested in a joint approach. Some interest in industrial policy has remained. Certain coordination of regional and social policy affected the adjustment of the sunset industries. There was coordination of technical standards as well as joint actions in research.

The EEC has a very ambitious plan to introduce a genuine common market among its 12 member countries by the end 1992. All nontariff barriers to trade and factor movements are to be eliminated within the EEC. The most important fact is the political will of the member countries to integrate further, permit competition and eliminate economic inefficiency. Citizens of the EEC can look forward to cheaper goods and higher real incomes on average. The adjustment to the genuine common market is unlikely to be traumatic. This was proven by all GATT rounds of tariff reductions as well as the creation of the EEC and its enlargements. New generations of Europeans may look forward to a more competitive economy.

While the EEC creates conditions for competition, its member countries implement their own industrial policies. The member countries are allies in their trade relations with the third countries, they are at the same time competitors on the EEC market. The divergence in the industrial policy philosophies among the member countries and the lack of funds prevented the EEC from playing a more influential role. The variety of the national uncoordinated policies introduced confusion and uncertainty with respect to the future actions of the EEC. Until the member countries take advantage of a vast internal market, they may lose the competitive edge in the industries in the times to come.

4 CONCLUSION

The survey of various problems which appear during the creation and implementation of an industrial policy within a country has given enough insights about the magnitudes of the problems which face an economic union in this field.

A forceful argument by Tyson and Zysman (1987b p. 426) favours the introduction of an industrial policy. They reject the neo-conservative approach which argues that an unfettered market system can solve our economic problems. Neither the economic performance of the US prior to the New Deal nor the contemporary economic performance in the most successful industrialised countries like W. Germany, Japan or Sweden supports this view. They state that strategic government intervention and comprehensive social welfare programmes, rather than free markets have been the engines of economic success throughout the advanced industrial world.

If a country's policy is flexible and adjusts its attitude (policy) towards industry in response to market signals like Japan or if it shapes the market as in France, it has a greater possibility of adapting than countries which prevent changes like Britain. Industrial policy which ignores market signals and supports sunset industries introduces confusion over the future and increases the cost of inevitable change. These costs may be much higher in the future than they were in the past. The success of an industrial policy may be tested by its effectiveness in shifting resources from dying sectors, not how effective they are in preventing this adjustment shift and introducing confusion.

The policy of picking the winner *(ex ante)* who may propel the economic life of the country in the future may have a favourable outcome if the choice is correct, if this policy is coordinated with the suppliers of inputs and if it is limited to a certain period of time in which the national champion is expected to become self-reliant. The other interventionist approach of the rescue *(ex post)* may just postpone the attrition of the assisted industry and increase overall costs to the society.

Lipsey (1987a, p. 151) reports Hong's remark that both Taiwan and South Korea employed such policy measures as administrative support, preferential tax treatment, subsidies and reduction of import substitution tendencies. However, South Korea experienced strong economic growth together with higher inflation, a worsening distribution of income, increases of foreign debt and concentration of economic power. This contrasts with Taiwan which experienced low inflation, improved distribution of income, current account surplus and proliferation of small business. This teaches us that the same instruments of industrial policy in one country may not produce the same results in another. The shaping of an idustrial policy in every country requires detailed data about available factors, competition, linkages among industries, policies of the major trading partners as well as tax, legal and political environment. Even then, industrial policy prescriptions should be taken with great caution.

We are pessimistic about the possibility for the creation and implementation of an effective industrial policy in an economic union or

a decentralised country. There are very many agents and issues which should be taken into account. Various agents have their impact on industrial policy. They include ministries of trade, finance, social affairs, regional development, defence and foreign affairs. Most of these departments exist at the federal, regional and local levels. There are also labour unions, banks and industrial sectors. They all have various and often conflicting goals. Numerous agents may be, of course, a source of creativity, but in practice they often turn out to be a source of disagreement over the distribution of instruments of industrial policy. The interaction of these agents has an amalgamating effect on the national industrial policy. It is unlikely that this policy may reconcile all these various strivings. Luckily, there is contrasting evidence in the cases of Japan and W. Germany which may serve as examples to other countries in the shaping of their industrial policies.

Centrally planned economies and their integration may not result in an efficient industrial policy either. Their rigid decision-making process circumvents market signals so their policy choice may well be wrong. Industrial production in some of the developing countries may have a significant part in the GNP. An economic union may provide these countries with some foundation for the coordination of the development of manufacturing and introduction of a common industrial policy. Of course, these countries must first agree about the desired pattern of production.

Although industrial policy is wider than trade policy, the frontier between the two is obscure. A promising industrial policy must have the effect neither of prolonged shielding of sunrise industries from competition nor of preventing the attrition of sunset industries forever. It should facilitate movements of factors from obsolete to modern industries. It has to be well coordinated on different levels of government with other economic policies which affect industrial sector. This holds both for single countries and for economic unions.

Received: 21. 04. 1988.
Revised: 11. 06. 1988

BIBLIOGRAPHY

Adams, G. (1983). "Criteria for US Industrial Policy Strategies." In *Industrial Policies for Growth and Competitiveness* (eds. G. Adams and L. Klein). Lexington, MA: Lexington Books, p. 393—418.

Adams, G. and Bolino, A. (1983). "Meaning of Industrial Policy." In *Industrial Policies for Growth and Competitiveness* (eds. G. Adams, and L. Klein). Lexington, MA: Lexington Books, p. 13—20.

Adams, G. and Klein, L. (1983). "Economic Evolution of Industrial Policies for Growth and Competitiveness: Overview." In *Industrial Policies for Growth and Competitiveness* (eds. G. Adams and L. Klein). Lexington, MA: Lexington Books, p. 3—11.

Bayliss, B. (1985). "Competition and Industrial Policy." In *The Economics of the European Community* (ed. A. M. El-Agraa). Oxford: Phillip Allan, p. 209—227.

Blais, A. (1986). "Industrial Policy in Advanced Capitalist Democracies." In *Industrial Policy* (ed. A. Blais). Toronto: University of Toronto Press, p. 1—53.

Brander, J. (1987). "Shaping Comparative Advantage: Trade Policy, Industrial Policy and Economics Performance." In *Shaping Comparative Advantage* (eds. R. G. Lipsey and W. Dobson). Toronto: C. D. Howe Institute, p. 1—55.

Brander, J. and Spencer, B. (1985). "Export Subsidies and International Market Share Rivalry." *Journal of International Economics*, p. 83—100.

Caves, R. and Jones, R. (1985). *World Trade and Payments.* Boston: Little, Brown and Co.

Curzon Price, V. (1981). *Industrial Policies in the European Community.* London: Macmillan.

Flam, H. and Helpman, E. (1987). "Industrial Policy under Monopolistic Competition." *Journal of International Economics*, p. 79—102.

Geroski, P. (1987). "Brander's 'Shaping Comparative Advantage': Some Comments." In *Shaping Comparative Advantage* (eds. R. G. Lipsey and W. Dobson). Toronto: C. D. Howe Institute, p. 57—64.

Harris, R. (1985). *Trade, Industrial Policy and International Competition.* Toronto: University of Toronto Press.

Jacquemin, A. (1983). "Industrial Policies and the Community." In *Main Economic Policy Areas of the EEC* (ed. P. Coffey). The Hague: Martinus Nijhoff, s. 27—58.

Johnson, H. and Krauss, M. (1973). "Border Taxes, Border Tax Adjustment, Comparative Advantage and the Balance of Payments." In *Economics of Integration* (ed. M. Krauss). London: George Allen & Unwin, p. 239—253.

Lipsey, R. G. (1984). "Can the Market Economy Survive?" In *Probing Leviathan: An Investigation of Government in the Economy* (ed. G. Lermer). Vancouver: The Frazer Institute, p. 3—37.

Lipsey, R. G. (1987). "Report on the Workshop." In *Shaping Comparative Advantage* (eds. R. G. Lipsey and W. Dobson). Toronto: C. D. Howe Institute, p. 109—153.

Lipsey, R. G. and Smith, M. (1986). *Taking the Initiative: Canada's Trade Options in a Turbulent World.* Toronto: C. D. Howe Institute.

Lipsey, R. G. and Dobson, W. (eds.) (1987). *Shaping Comparative Advantage.* Toronto: C. D. Howe Institute.

McFetridge, D. (1985). "The Economics of Industrial Policy." In *Canadian Industrial Policy in Action* (ed. D. McFetridge). Toronto: University of Toronto Press, p. 1—49.

McKay, D. and Grant, W, (1983). "Industrial Policies in The OECD Countries: An Overview." *Journal of Public Policy*, p. 1—12.

Pinder, J., Hosomi, T. and Diebold, W. (1979). *Industrial Policy and the International Economy.* New York: The Trilateral Commission.

Robson, P. (1984). *The Economics of International Integration.* London: George Allen & Unwin.

Thirsk, W. (1985). "Should Taxes Be Included in Trade Agreements?" In *Canadian Trade at Crossroads: Options for New International Agreements* (eds. D. Conklin and T. Courchene). Toronto: Ontario Economic Council, p. 138—152.

Trebilcock, M. (1986). *The Political Economy of Economic Adjustment.* Toronto: University of Toronto Press.

Tyson, L. (1987). "Comments on Brander's 'Shaping Comparative Advantage': Creating Advantage, An Industrial Policy Perspective." In *Shaping Comparative Advantage* (eds. R. G. Lipsey and W. Dobson). Toronto: C. D. Howe Institute, p. 65—82.

Tyson, L. and Zysman, J. (1987a). "American Industry in International Competition." In *American Industry in International Competition* (eds. J. Zysman and L. Tyson). Ithaca: Cornell University Press, p. 15—59.

Tyson, L. and Zysman, J. (1987b). "Conclusion: What to Do Now?" In *American Industry in International Competition* (eds. J. Zysman and L. Tyson). Ithaca: Cornell University Press, p. 422—427.

Wescott, R. (1983). "US Approaches to Industrial Policy." In *Industrial Policies for Growth and Competitiveness* (eds. G. Adams and L. Klein). Lexington, MA: Lexington Books, p. 87—151.

Whalley, J. (1987). "Brander's 'Shaping Comparative Advantage': Remarks." In *Shoping Comparative Advantage* (eds. R. G. Lipsey and W. Dobson). Toronto: C. D. Howe Institute, p. 83—89.

Wonnacott, P. (1987). *The United States and Canada: The Quest for Free Trade.* Washington: Institute for International Economics.