

The modern structure of international economic policies

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The quantitative importance of transnational corporations has widened the range of international economic policy to include measures that must make governments aware of the need to maintain the attractiveness of their economies to internationally mobile created assets. One important new aspect of international economic policy is that national policies are now interdependent so that the action needed to keep an activity of a transnational corporation "at home" also depends upon the policy stance and the economic attractiveness of other countries. By developing a hierarchy of policies, the intricacies of policy-making in a world of internationally mobile created assets can be better understood, and the degree to which policy makers enjoy the freedom to inaugurate such policies can be explored.

Introduction

The existence of a quantitatively important new type of productive unit, the transnational corporation (TNC), and the concentration of the activities of these firms in goods and services that require substantial inputs of proprietary technology, have outdated the simple Ricardian and factor-proportions theories of international trade and their derivative, the theory of commercial policy. A distinctive feature of modern international involvement is the growth in the relative importance of goods and services that have their direction of trade (their competitiveness) determined by "created assets", such as product and process technology, general and process-specific human capital, and organizational capacity (Behrman, 1993; UNCTAD-DTCI, 1993). These

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products may be distinguished from the products that derived their comparative advantage from endowments of internationally immobile resources (including natural resources) and which form the basis for traditional theories. Created assets are internationally mobile at the discretion of their TNC owners (although there are costs of transfer). In a period in which global competition is becoming steadily more severe, TNCs cannot neglect any opportunity to reduce costs or to enhance the efficiency of their organization (Dunning, 1993, pp. 6-7). At the same time, citizens still identify themselves with national entities, and national currencies are still used as international media of exchange and stores of value, so that governments are required by their electorates to ensure that *national* interests are furthered.¹ A government must confront the potential exodus (entry) of created assets from (into) its economy and, with the loss (gain) of those assets, some impairment of (improvement in) national income and wealth. These possibilities represent the new dimension of international economic policy: their implications for the structure of international economic policy formulation and conduct are the focus of this article.

The article first provides a description of the new dimensions of the globalization of Schumpeterian industries and the way in which their existence can affect the concerns of governments. It then provides a diagrammatic exposition of the interaction among the members and defines the three genera of policy. Examination of the interaction among the members of the policy set precedes identification of the modern structure and the crucial role of the commercial environment. An analysis of the potential conflicts that may exist within a country and the difficulties inherent in developing a coherent holistic set of policies constitutes the final substantive section. It does not address the desirability or costs of impediments to full international involvement but seeks to enlarge the domain of the traditional theories of trade and commercial policy beyond the static equilibrium in which allocative efficiency may be used as the sole criterion.

¹ Close integration, as for example in the European Union, involves the explicit renunciation of nationhood or national identity and transfers the onus for the benefits from external involvement from the national government to the community government.

A nation ceases to be identifiable as a nation in economic matters when it loses its national currency and becomes a member of a union with a common currency. Thus, the successful conclusion of the Maastricht Treaty would make the European Union a single nation in international economic analysis and it would be misleading to consider intra-union trade as "international". Trade would still take place among members, but would revert to "interregional trade" (Ohlin, 1933).

The important new dimension

The modern counterpart of free trade is now *full economic involvement*. It comprises the absence of transborder discrimination (or free trade), complete freedom of establishment—freedom of foreign direct investment (FDI)—and national treatment for foreign affiliates of TNCs (i.e., nondiscrimination among firms by host government on the basis of the nationality of the parent firm). The rapid growth of the internalized transborder activities of TNCs, improvements in communication technology, reductions in the barriers to international exchange and more closely interlocked global financial markets, have made national economies more interdependent. This new state of affairs has been called “globalization” (Dunning, 1992, 1993). The result is that the theories of international trade and commercial policy must be reworked to encompass the new complexities (Gray, 1994).

The major thrust of globalization results from the existence and actions of TNCs. They devise global strategies for the production and marketing of products heavily reliant on created assets proprietary to individual firms (or, where technical alliances exist, groups of firms). Products of this kind may be described as dynamic or “Schumpeterian” goods and/or services: firms producing these goods are in a constant state of flux as changes within an industry (especially the distribution of the stock of proprietary technological assets among the competitors) affect their ability to compete and, therefore, their viability (Aharoni, 1993). Speed-to-market of new products and of new generations of existing products can affect the return on investment in proprietary technology. It is vital that firms maintain a rate of product innovation and development necessary to keep pace with their competitors. Firms engaged in global competition in Schumpeterian goods and services generate quasi-rents from exports and from the use of proprietary assets abroad and are, therefore, important contributors to the economic welfare of a home country.² Natural-resource goods are also capable of generating rents for the home economy, but competition in natural resource industries (and in traditional industries), even among global TNCs, is less prone to sudden shifts in competitiveness as a result of changes in firms’ portfolios of proprietary assets and the geographic distribution of their physical assets. Natural resources and traditional industries are, therefore, less “sensitive” to government policies at home and abroad.

² Affiliates of foreign-based TNCs established in the home country can also be very useful because their presence can strengthen the home country’s industries and its related and supporting industries. But it would be an unwise government that handicapped its national TNCs.

In some Schumpeterian industries, the rate of investment in competitiveness-enhancing assets can be used as a strategic weapon by firms with ample cash flow and easily available external finance. An industry can be described as “explosive” if the loss of competitiveness by a firm in one year (with an attendant diminution of free cash flow) could generate a vicious circle as a diminished cash flow impedes the ability to spend on competitiveness-enhancing activities and causes a firm to fall further behind. In the absence of some favourable external event, established firms could fail. These features of Schumpeterian firms directly involve governments in competition with each other to attract and/or retain value-adding activities in Schumpeterian products (Dunning, 1992).³

Competitiveness in Schumpeterian products is not an absolute condition in that a country will normally both import and export quite similar varieties of dynamic products nor, because of the continuous stream of innovation (including improvements in the managerial efficiency of individual firms), does competitiveness lend itself to static analysis without great sacrifice of realism. Being internationally competitive is then defined for a national industry as having a more-than-proportionate share of the world market (relative to the ratio of gross national to gross world product) and a non-declining share of a globally contested market—these are, respectively, the static and dynamic criteria.⁴ It is possible for a national industry to be internationally competitive in the static sense but to be having its position eroded by not being dynamically competitive.⁵ A concern for static global allocative efficiency is no longer an adequate criterion for analysis of international involvement or for the relevant policy dimensions.

Because Schumpeterian industries in global competition are more sensitive than either traditional or natural resource industries to policy actions

³ Because TNCs are usually multi-product firms, the elimination of a competitor does not always mean the elimination of a corporation: competitive stress could also end in the retreat by the loser from a broad line of products to a niche position.

⁴ Notationally, the two criteria for the competitiveness of industry *i* in country *C* are:

$$(X_{ic}/X_{iw})(GNP_c/GWP) > 1 \quad (1)$$

$$\delta/\delta t[(X_{ic}/X_{iw})(GNP_c/GWP)] \geq 0 \quad (2)$$

where X_i represents total production of good *i* in *C* plus the net revenues generated by foreign affiliates of firms based in *C* and any royalty income from the licensing of patents. The subscript *W* denotes the world.

⁵ Short-run protective arrangements to permit the revitalization of the industry could be appropriate for such an industry (always assuming the firms in the industry are deemed capable of effecting the reversal). For a case study of such a policy applied to the United States machine tool industry, see Dinopoulos and Kreinin (1991).

by home or foreign Governments, national Governments are more likely to be actively involved with the furtherance of the future success of their national firms in these industries.⁶ If the playing field is slanted, proactive policies may be in force and retaliation inevitable. The potential clash between policies necessary for maintaining the competitiveness of their TNCs and the ideal policy set perceived by the electorate means that an analysis of international economic involvement cannot ignore the potential erosion of national values.⁷ As governments try to match the efforts of their rivals in order to allow their own TNCs to compete on, at least, equal conditions (Dunning, 1992, p. 10), they “match the low bidder”, where the cost of policy is seen as the sacrifice involved in departing from an optimal domestic commercial environment (defined in terms of home-country social values). The imposition of such a slant could be a deliberate strategy on the part of a government, or it could be the result of a set of values abroad that permits another government to generate a commercial environment more favourable to its own firms. Thus, a democracy with a docile electorate (Simon, 1991), or an autocratic government, will be able to implement low-bidder policies more easily than a democracy featuring fierce competition among political parties and an electorate likely to punish a non-performing government.⁸ John H. Dunning (1993, p. 13) described a failure to match the “low bidder” as “an unaffordable luxury”.

The multiple layers of policy

There are five levels of government activity.⁹ National values are incorporated in “social policy”, which broadly encompasses the whole range of the philosophy, values and goals of a government and of all segments of a society (the electorate). The goals include economic targets addressing

⁶ Paul Krugman (1994) does not seem to recognize the phenomenon of governmental rivalry in these policies.

⁷ National values may be considered as the components and weights included in a nation's general interest function or as cultural constraints imposed on the use of policy instruments (Tinbergen, 1970, pp. 1-4; North, 1990, chapters 5 and 6). There is no reason to suppose that these values are identical across countries, and they may differ drastically according to the political system of a country.

⁸ For example, the Government of Japan is able to impose a relatively heavy tax burden on households and to use its institutional structure to ensure a very high saving rate.

⁹ Nothing suggests that firms do not have an input into the delineation of policy at all levels by educating governments to industry-specific conditions and through lobbying. The focus of this article is on the national role, but sub-governments (members of a federation, for example) and non-governmental organizations can also affect policies towards TNCs. Their role is relatively small because they lack ability to implement major economic policy.

per capita output and growth rates, such values as inter-generational transfers in the form of ecological concerns or national wealth and social welfare policies that directly confront the desirability of a less unequal distribution of income rather than a complete preoccupation with economic efficiency might generate. Social policy also incorporates the constraints imposed by cultural values on the instruments available to policy makers. It makes its presence felt in its impact on the commercial environment (or "business climate") which also incorporates the three levels of international economic policies as well as domestic concerns. The formation of the commercial environment is the arena in which national concerns and the potential need for active international policy confront each other.

The greater complexity of international economic policy problems inherent in a globalized economy can be shown diagrammatically. Figure 1 contrasts the basis for the traditional theory in which international involvement consisted only of arm's-length international trade and the effects of commercial policy (fig. 1a) with the more modern complex structure of international economic relations in which costly and potentially very beneficial created assets are generated by firms and can be moved internationally (fig. 1b). In the latter, firms are seen to contribute to both domestic and foreign resource endowments through the creation of assets; the international transfer of assets and this more complex system open up a broader range of international involvement and a wider scope for government policy.¹⁰ Both parts of the figure are shown in a two-country format (the focus country and a composite of other industrialized nations).

Figure 1a shows that arm's-length trade is determined by differences in resource endowments and impeded by transborder discrimination. Resource endowments are given. Simple tariff discrimination on goods and services by country of origin (or national content), as these cross-national boundaries, impairs global allocative efficiency and reduces global gains from trade. In practice, tariff structures do not impede the importation of goods that embody natural resources (or advanced technology) not available from domestic sources. These are "non-competitive imports" and generate substantial per-unit gains from trade (Gray, 1976, pp. 45-49). The costs of impediments to international trade also include the ability of protected firms

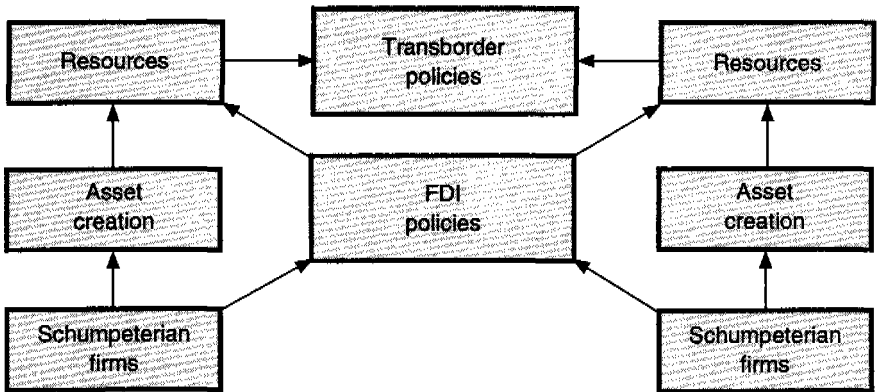
¹⁰ Transnational corporations and FDI have existed for many years but their growth since the mid-1950s has made both phenomena forces that can no longer be neglected. Similarly, the role of firms in the creation of assets (proprietary managerial, product and process technology as well as capital) now exceeds the level at which the existence of created assets can legitimately be neglected in terms of the ostensibly greater precision of a simpler model.

**Figure 1. International interaction:
traditional and modern**

1a: *Traditional*^a



1b: *Modern*^b



^a Proprietary technology is not a component of the resource endowments: “the conditions of production are everywhere the same” (Ohlin, 1933, p. 15).

^b Proprietary technology (created assets) is an important component of the resource endowment.

to be X-inefficient.¹¹ Recognition of the role of non-tariff barriers was broadened by Ingo Walter (1969) who identified three types of non-tariff barriers allowing for them to be: overt or deliberate substitutes for protective tariffs; covert substitutes for protective tariffs under the guise of domestic policies; and the side effects of measures that were genuinely imposed for domestic purposes (accidental effects).¹² Traditional analysis would focus exclusively

¹¹ This is a more costly aspect of protection than misallocation since reduced X-efficiency uses too many inputs to produce a given amount of output: misallocation produces other goods than those that would constitute the ideal output mix.

¹² Walter’s analysis was still effectively limited to current goods and services as they crossed national boundaries.

on static allocative efficiency in the world economy and would identify impediments purely in terms of transborder discrimination.

Figure 1b shows that governments can, in addition to impeding the exchange of goods and services, affect FDI flows through a range of measures that encourage outward FDI or discourage inward FDI. Similarly, governments can influence the pattern of trade through changes in the resource base by means that are apparently domestic but that enhance the rate of creation of proprietary assets by their own firms and therefore change the national resource base relative to competitor nations. Once the time-consuming process of asset creation and the transfer of created assets through FDI is countenanced, static analysis is bypassed and current policies can affect the future magnitude and division of gains from international involvement. Walter's trichotomy of overt, covert and accidental can be applied equally well to measures that affect the rate of creation of assets and their international transfer as to simple transborder discrimination.¹³ National income may be assumed to be positively correlated with the quantity and quality of the resources in a nation.

The three types of policy can now be identified:

- **Transborder discrimination** affects the exchange of goods and services; these measures constitute old-fashioned commercial policy.
- **Industrial policy** consists of measures that enhance the ability of a national stable of firms producing Schumpeterian goods and services to maintain their competitiveness in the face of a given policy stance by competitor nations towards these same industries. There would be no industrial policy if all countries favoured their Schumpeterian industries equally, or if no positive discrimination were given to such industries in any country. Industrial policy includes those government measures that affect the accumulation of created assets; the flow of inward and outward FDI through the refusal (usually covert) to afford freedom of establishment or national treatment to foreign affiliates or to subsidize inward FDI (Guisinger *et al.*, 1985); and activities that affect the ties of TNCs and their mobile assets to the home country. Industrial policy can be considered as the policy set directly affecting the diagonal and vertical lines in figure 1b: it applies to policies that are targeted towards a specific industry or sector and indirectly affect the pattern of international trade.

¹³ The existence of trade-related investment measures (TRIMs) makes the separation of the diagonal from the horizontal lines difficult: see Moran (1992).

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- **Macro-organizational strategy** includes all measures that seek to enhance the international economic performance of the national economy—either through improvements in the innate efficiency of the home productive sector or at the expense of foreign competitors. The components of macro-organizational strategy that are not included in transborder discrimination or industrial policy are applied at the national level and do not seek to discriminate by industry or sector—hence “macro”. They affect the resource base and the production functions and, through that, the pattern of trade.¹⁴

The policy set

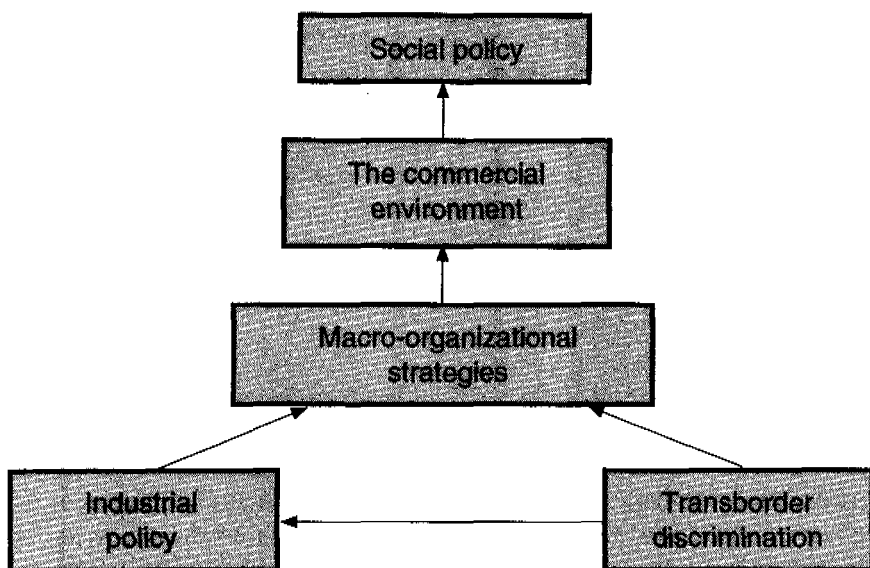
The structure of policies is shown in figure 2. With the exception of social policy, each level comprises the lower levels and additional features. The commercial environment incorporates all of the dimensions of macro-organizational strategy which, in turn, incorporates all of the dimensions of industrial policy and transborder discrimination. Because industrial policy is limited to Schumpeterian goods and services, transborder discrimination measures that apply to other kinds of goods and services are incorporated directly into macro-organizational strategy. Each level of policy is described in sequence:

- **Transborder discrimination** includes overt measures as well as quasi and accidental non-tariff barriers (Walter, 1969). This component of international economic policy is well known and need not be treated in detail here. In practice, except for covert or obstructionist measures that transgress international agreements, most industrialized countries have forfeited their strategic freedom in this dimension through agreements enforcing the principles of the World Trade Organization.¹⁵ Some goods and services escape the World Trade Organization, but these (agricultural goods excepted) are not usually important in the determination of full international involvement. The existence of transborder discrimination can affect FDI flows as it impedes the ability of firms to supply markets by exporting; or, through trade-related invest-

¹⁴ This article broadens Dunning's (1992) concept of macro-organizational strategy significantly by recognizing the fact that government measures may be required in response to measures implemented by other nations.

¹⁵ Where industries are regulated by international agreement, such as banks under the Basel Concordat, it would be possible to aid competitiveness by failing to enforce regulatory restraints.

Figure 2. The structure of international economic policy



NOTE.—Arrows indicate that the measures in the “source policy” are included in the “recipient” policy.

ment measures, transborder discrimination can attract or repel FDI (Gray and Walter, 1983).

- **Industrial policy** is complex. It involves some form of government plan to influence a country’s industrial structure in a clearly-defined way, e.g. to enhance the total value-added in Schumpeterian goods in a country and the rents generated by home-country TNCs. Conflicting definitions set the scope of industrial policy at the level of a region, a sector, an industry, a firm or a project (Brander, 1987, p. 29). The narrower the scope of the policy, the more governmental policy is involved in “picking winners”—a task in which governments historically have proven fallible (Schultze, 1983). The definition of industrial policy used here is sectoral: Schumpeterian industries can be seen as constituting a globalized technology-intensive sector.¹⁶ Industrial policy as defined here would favour industries that compete in globalized

¹⁶ As shown in figure 2, transborder discrimination measures, to the extent that they do not contravene the World Trade Organization principles or are applied covertly, can affect firms in these industries.

markets and rely heavily on created assets: industrial policy would differentiate among these industries only by their capacity to create assets (the most obvious example is a tax subsidy on research-and-development expenditures, which is more generous than that of rival nations).¹⁷ This definition of industrial policy has the advantage that it allows impersonal market forces to “pick winners”. A second feature is that industrial policy is based on the “support” given to a home industry *relative* to the support given to the same industry in a trading partner nation: it can be analysed at first as a retaliatory policy to be undertaken when another nation provides its own Schumpeterian industries with a favourably-slanted playing field.¹⁸ The favourable slant may be the result of either a cultural and/or political feature in another country (Casson, 1993), or may be the result of a deliberate set of policy measures (Yamamura, 1986). Industrial policy (but not including non-retaliatory protective tariffs) can be seen as a set of policies designed to reduce structural market failures with international origins (Dunning, 1993, p. 19).

The best simple definition of deliberate industrial policy can be expressed in terms of the “net tax burden” imposed upon Schumpeterian industries. This definition assumes, temporarily, that countries are similar in other respects so that only policy differences slant the playing field. Schumpeterian industries require a free cash flow to enable them to invest in such competitiveness-enhancing activities as research and development; making (foreign) marketing and distribution activities more efficient; keeping the physical plant and equipment technologically up-to-date; and expanding their productive capacity to maintain their market shares in growing global industries (Milberg and Gray, 1992). The volume of free cash flow needed will vary with the amount of investment in competitiveness-enhancing activities undertaken by foreign TNCs. Any inequality in the burdens imposed upon Schumpeterian firms operating within a national jurisdiction could slant the playing field in favour of the TNCs of the country with the lower tax burden.¹⁹ This probability will be enhanced if that country’s

¹⁷ Since only profit-making firms pay taxes, unprofitable firms could consider themselves to be discriminated against.

¹⁸ Industrial policy could be aggressive and seek to enlarge the share of the global market for Schumpeterian goods in general or an industry in particular. This feature opens the door for industrial policy to include targeting of foreign industries perceived to be vulnerable.

¹⁹ While ownership of foreign affiliates in countries with lower net tax burdens may ease the difference in the total burdens on TNCs of different nationalities, it is unlikely to eradicate it completely.

TNCs use their potentially larger net free cash flow to increase their expenditures on competitiveness-enhancing investments (as distinct from distributing the funds in dividends or using the funds to expand the firm into other, conglomerate lines of endeavour). A heavier tax burden penalizes TNCs based in countries with a high commitment to social welfare and similar policies.²⁰

But the tax burden must have offset against it the value of services rendered by government to Schumpeterian industries.²¹ Thus, in determining the role of government on competitiveness, it is necessary to identify the *net* tax burden. Clearly, this provides countries with a means of affecting the competitiveness of their Schumpeterian industries outside of the jurisdiction of the World Trade Organization. A deliberate policy of providing tax breaks to Schumpeterian industries or of creating a large source of research funding would fall under Walter's covert category of measures, but could be rationalized in international negotiations as being an accidental by-product of domestic strategies.

The description of industrial policy has been based on a retaliatory posture. It can, of course, be used as an aggressive, neo-mercantilist tool. There is an important distinction to be made between retaliation against an aggressive industrial policy that slants the international playing field and against a natural advantage that derives either from cultural phenomena or from a more X-efficient set of policies. Neo-mercantilist industrial policy is simply an exercise in the technique of being "low bidder" and invites a response similar to that justifying the retaliatory tariff. Where one country enjoys a cultural advantage in the supply of Schumpeterian products, a competing government may use industrial policy measures to counter that natural advantage. This would appear to offer little to global allocative efficiency or to global growth. Finally, if the other nation enjoys a favourable position because of greater X-efficiency in the organization of the economy through more effective elimination of market failures, the correct response is for all countries to pursue the elimination of market failures equally effectively to the benefit of global welfare.

²⁰ See the comment on "matching the low bidder" above. Note that the burden of social-welfare policies could, in theory, be borne by the household sector and/or firms producing goods which do not rely heavily on created assets. The tax structure thus becomes an important component of industrial policy.

²¹ The offsets could include government-sponsored research, protection of home markets, direct and indirect subsidies to research and development, etc. For an example of an indirect subsidy to research and development, see Dertouzos *et al.* (1990, p. 214).

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- **Macro-organizational strategy**, as defined in this article, involves all measures that governments adopt to enhance the efficiency of their economies; the range of macro-organizational concerns exceeds international economic ones.²² Dunning (1992), in his original development of this concept, was concerned primarily with the role of government in the elimination of areas of market failure, whether structural or endemic, and the need for an economy to be able to compete for mobile created assets on the basis of its relative efficiency.²³ This analysis included the provision of efficiency-enhancing infrastructure and recognized explicitly the existence of competition among governments to create an efficient economy in order to attract created assets. However, his analysis did not incorporate the full range of potential competitiveness-enhancing governmental measures because its primary focus was indifferent to the nationality of the ultimate owner of the created assets, provided always that they are used in the economy of the government implementing macro-organizational policies (Dunning, 1993, p. 12), and it neglected the obvious interaction between general macro-organizational strategy and industry-specific (industrial) policies affecting the attractiveness of the economy to Schumpeterian firms.²⁴ Any set of international economic policies must confront the need for reactive policies in the face of foreign initiatives, in addition to innately desirable efficiency-enhancing measures.

It is useful here to illustrate some components of macro-organizational strategy that can supplement the effects of transborder discrimination and industrial policy, in addition to those measures that enhance macro-X-efficiency by reducing or eliminating market failures. The most obvious way of improving economic competitiveness in Schumpeterian goods and services is to generate a high rate of saving; this can be done by failing to supply a security net for older citizens and by raising large amounts of total tax revenues by sales and luxury taxes that fall heavily on the household sector. The ability to impose such

²² This raises questions on the definition of efficiency, which is best defined in terms of the ability to increase the national general interest function (growth in GDP per capita will be an argument in that function).

²³ Other measures were not ruled out but were not developed in the analysis. In Dunning (1993), the theme was developed that governments needed to become aware of the importance of their task as a facilitator or enabler of wealth creation.

²⁴ Dunning was obviously aware of the benefits of having created assets owned by home-country residents. His failure to emphasize the nationality of the TNC-generating value-adding Schumpeterian activities may derive from the fact that the view that X-efficiency-enhancing policies will apply to both equally.

measures depends upon both the natural or cultural propensity of a population to save and/or the docility of the electorate in democracies and the degree of authority of non-democratic governments (Simon, 1991). A second advantage is to be a free rider in the supply of global aggregate demand (i.e., to run a current account surplus) or of international public goods (Kindleberger, 1986). Since running a current account surplus constitutes a form of saving, it is possible to avoid the recessionary tendencies that high saving might bring in its train in a closed or only partially open economy—but this requires the existence of a counterpart dis-saver. Finding an optimum degree of regulation and focusing on generating a cost-efficient means of regulating in which compliance costs are identified as a social cost is also a component of macro-organizational strategy.

The commercial environment

Social policy and international economic policy come together in the commercial environment. This set of conditions is the holistic approach of a society towards economic activity. It includes domestic as well as international policies, and its formation is determined by history, culture and the values of the electorate as well as by the attitude and awareness on the part of the government with the success of its national TNCs and the amount of value-added in Schumpeterian goods and services in the country (Dunning, 1993, p. 20). The commercial environment constitutes the embodiment of total economic policy and incorporates the outcome of any inherent clash between the desires of the electorate for short-run benefits against the possible perceived need of the policy makers for longer-term measures—in other words, the desirability of retaining or not losing production of Schumpeterian goods in the economy.²⁵ The difference between the old system of arm's-length trade and the new one in which internationally mobile created assets assume major importance is the strength of the input of the international components of macro-organizational strategy into the commercial environment and the potential for greater friction between social policy and that strategy.

²⁵ The same consideration arises over such concerns as reductions of international net worth, the emphasis on ecological preservation and many other intertemporal aspects of modern policy-making.

Governments are fully capable of sins of commission as well as omission and may not recognize the full scope of macro-organizational measures in commercial policy. Four facts need to be countenanced by any government seeking to enhance the competitiveness of its Schumpeterian industries:

- Because maintaining international competitiveness in Schumpeterian industries requires a high average propensity to save, no nation can enjoy static or dynamic competitiveness in all of them. Here, the constraint is in the bottlenecks created by the flow of saving and the conflicting demands on that flow as well as in the supply of the necessary calibre of people for upgrading. The desire of electorates for current consumption restricts the available flow of saving and limits the ability of a nation to create assets at the requisite rate in all industries.
- Dis-saving internationally by running a current deficit (Gray and Gray, 1988/89) reduces the amount of saving available for Schumpeterian industries and makes a country's Schumpeterian goods and services less competitive in world markets in terms of price. It is true, as Michael Porter (1990) observed, that industries and firms can benefit from a small adversity, but they will also be tempted to shift mobile assets abroad out of a country with a chronically overvalued currency. A low propensity to save can impose a constraint on the ability to maintain a national currency at a rate that permits a nation's TNCs to generate mandated free cash flows (Milberg and Gray, 1992). Countries with chronically overvalued currencies will suffer a diminution in the proportion of GDP consisting of value-added in Schumpeterian goods and services.
- A country that enjoys a comparative advantage in primary products has its Schumpeterian industries handicapped by a stronger currency than would exist in the absence of the advantage in primary products. The existence of a comparative advantage in primary products deriving from immobile assets strengthens the national currency and impedes the ability of Schumpeterian firms and industries to flourish in that country except behind some protective wall. The exception is likely to be found in the competitiveness of downstream activities based on the comparative advantage in natural resources (e.g., Saudi Arabian capabilities in petrochemicals). In these industries, created assets can be profitably used (provided that the economies of common governance and proximity to the raw material can outweigh the rate-of-exchange disadvantage). Recognition of this potential advantage in industrial policy requires a more narrow definition than that given

above and implies an ability to “pick winners” (but from a better informed basis).

- The need of an incumbent government to take into account the needs or desires of its citizens (in order to get re-elected) can oppose those measures required to ensure the continued competitiveness of Schumpeterian industries. To the extent that the macro-organizational strategy components of the commercial environment designed to affect Schumpeterian firms have long-run payoffs, they are likely to be opposed by electorates seeking short-run benefits. Here, the question of the ability to achieve a commercial policy that enhances the competitiveness of Schumpeterian industries will be constrained by the pressures exerted upon policy makers who hope to be re-elected by voters. A docile electorate (or a strong **dirigiste** government with a growth focus) may be a crucial ingredient for the incorporation of a good macro-organizational strategy in the commercial environment.²⁶

Conclusions

The model of the formulation of policies developed in this article emphasizes the crucial clash of interests in a democracy between the short-run interests of the electorate and the longer-term needs of good economic policy (both domestic and international). National values, culture, history and tastes interact with modern economic conditions and modern technologies to produce the commercial environment. In traditional international economic analysis, the commercial environment was free from international policy concerns except for any effect that transborder discrimination (at home or abroad) might generate. The greater complexity of modern analysis inserts international considerations into the heart of the formulation of the commercial environment, and the impact of international factors on social values and nationhood has become much more powerful.

The additional complexities in policy formulation require that explicit recognition be given to the interdependence between a home country's commercial environment and the commercial environments of other countries. International policies now must recognize the sensitivity of home-country economic achievements and potential to foreign values and decisions. Tradi-

²⁶ See Franke *et al.* (1991) on the role of culture in economic performance. Their results could be seen as offering confirmation of the importance of growth-oriented **dirigiste** governments or a docile electorate.

tional analysis cannot incorporate the many dimensions of modern interdependence. ■

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