

**INCREASING RETURNS, IMPERFECT COMPETITION AND  
DEVELOPING COUNTRIES IN INTERNATIONAL TRADE:  
SOME ISSUES<sup>1</sup>**

*Mia MIKIĆ\**

ABSTRACT

The incorporation of details of industrial organization into the trade theory has been the subject of a fast growing recent literature which is surveyed in this paper. "New" trade theory, which assumes imperfect competition, economies of scale and product differentiation provides new insights for the understanding of both positive and normative aspects of trade. Whereas the new literature provides scope for the active use of policy to raise welfare in developed countries, little or nothing has been said about the developing countries. In this paper I attempt to identify the most important implications of the "new" trade theory for developing countries. Although some types of trade described by the new literature justify policy intervention, it has been argued that trade intervention in the developing countries usually has welfare-worsening effects.

I. INTRODUCTION

Recent developments in the theory of international trade have led to a weakening of the traditional presumption against trade policy intervention. Once the assumption of atomistic competition is relaxed, giving the market power to the individual producers and consumers, the determinants and patterns of trade are changed and trade policy affects them in a different way. Most importantly, the idea of creating and shifting comparative advantages through policy intervention in

---

<sup>1</sup> I wish to thank Robert Scollay and Sholeh Maani for their incisive comments on an earlier draft which was presented at the Staff Seminar of the Economics Department, University of Auckland. Comments of the discussants in that seminar are gratefully acknowledged.

\* Economics Department, School of Commerce and Economics University of Auckland.

foreign trade (termed as strategic trade policy) began finding its way into the mainstream trade theory.

The incorporation of imperfect competition and increasing returns to scale allows for welfare-improving trade intervention even in "small" economies. Hence developing countries, the majority of which are "small" economies, should be able to use policy to change their terms of trade. Unfortunately, the recent literature deals almost exclusively with the policy problems of developed countries.

This paper has two objectives. The first is to provide a nontechnical survey of some of the new literature modelling imperfect competition, increasing returns and product differentiation. The second is to explore what implications this new framework of analysis has for developing countries.

The paper is organized as follows. Section II reviews some factors that led to a rise in protectionism. It also examines market structure in developing countries. Section III summarizes some of the recent literature that have occurred in the late 1970's and in the 1980's. In this survey I concentrate on the incorporation of assumptions of economies of scale, product differentiation and imperfect competition into models of international trade. The implications of the recent developments in trade theory for developing countries' commercial policy are not obvious. Some of them are examined in Section IV. Section V offers some concluding observations.

## II. TRADE LIBERALIZATION: DO IMPERFECT COMPETITION AND INCREASING RETURNS MATTER?

The question of free trade, or rather the role of policy intervention in international trade, has returned to centre stage in the 1980's. The rise of protectionism is associated with macroeconomic problems that resulted from oil shocks in the 1970's and imbalances generated by the United States' fiscal deficit in 1980's. A positive correlation between high rates of unemployment, excess capacities and recession in general and protectionist pressures does not come as a surprise. Most developed countries, formally leaders in the establishment of the postwar "liberal" international trade order, found themselves in what Bhagwati (1988) calls the "double squeeze". On one side they had to adjust their sunset industries in the light of the spectacular export performances of the newly industrialized countries (NICs) and new exporting countries (NECs). On the other side, the new high-tech or sunrise industries had to fight against Japan and the more advanced NICs. Not surprisingly, the issue of industrial policy thus became quite important. Even more important became the issue of trade policy because of an increasing attempt to impute to trade policy those problems that really call for industrial policy actions. Recent developments in the area of trade theory appeared at first glance to have created new justification for trade policy intervention, so that analysts in some developed economies started to talk about losses they incur by practising "free" trade.

At the same time, developing countries and some of the NICs were also facing a need for adjustment. In most cases the adjustment was induced by the IMF and the World Bank whose traditional role has been to press for economic liberalization (trade liberalization included). Developing countries found themselves in a somewhat paradoxical situation. On the one hand pressure from international economic institutions and creditors coupled with the example of the "Four Tigers" led them in the direction of admitting the inferiority of the infant-industry argument and of import-substituting strategies. On the other hand, they saw the United States and other developed nations becoming increasingly enthusiastic about strategic trade policy arguments which in some cases seemed to consist of little more than an application of the infant-industry argument to high-tech industries. After all, if learning processes are that important in the United States semiconductor industry, aren't they even more important to industries in the developing countries? Should they then proceed with trade liberalization or not?

Moreover, studies attempting to measure the cost of protection or gains from trade liberalization were not very supportive of the rationale behind either unilateral or universal application of the theory of free trade. Traditionally these measurements have been based on the Harberger-Johnson-Meade welfare triangles, which turned out to be of a discouragingly small size. In the last decade several models<sup>2</sup> have been developed to examine the general equilibrium effects of trade liberalization. The basis for these models was again the standard Heckscher-Ohlin-Samuelson model with constant returns to scale, and again the gains from liberalization appeared to be extremely modest, that is in the order of 0.5 to 2% of GDP. Moreover, in Whalley's model (Whalley, 1984) the developing countries lose about 5% of their GDP by unilaterally liberalizing and about 4% when the rest of the world joins them in trade liberalization.

After the appearance of these estimates it looked for a while as if the "import substituters" had finally found a firmer ground to stand on. Indeed, many jumped to the conclusion that outward-oriented industrialization based on "free" trade (or trade liberalization) is shown to be definitely harmful for developing countries. Luckily for "liberalizers" the results of these estimates were found to lack credibility, for a number of important reasons (Srinivasan, 1986), of which it will suffice to mention only two here. Firstly, the models underlying the estimates do not take account of the rent-seeking and directly-unproductive profit-seeking (DUP) activities triggered by the trade intervention which is the basis for ISI. Such activities divert resources away from producing more socially desirable goods and services. Conventional "triangle" trade liberalization gains should thus be enlarged to allow for the spending by lobbies for and against trade

---

<sup>2</sup> For a synthesis of and reports on several models see Srinivasan and Whalley (1989).

intervention. Although, as Srinivasan (1988) and others have pointed out, rent-seeking may actually produce welfare gain in a highly distorted economy, it would appear that on balance the case for trade liberalization is strengthened by taking into account the welfare effects associated with rent-seeking (Bhagwati, 1989).

The second weakness of the estimates of gains from liberalization is that they take no account of scale economies and imperfect competition. In the case of the developing countries this is particularly misleading because market imperfections there appear to be more serious than in the developed countries. The policies the developing countries have been using to sustain the ISI necessarily result in restricted competition in the domestic market and create domestic oligopolies, even monopolies. Rodrik (1988:110—15) uses the informal evidence provided by the four-firm concentration ratio to illustrate the importance of imperfect competition in developing countries. The conclusion that imperfect competition is more prevalent in developing countries than in developed countries, based on higher concentration ratios in the former, is further supported by the following observations (Rodrik, *ibid.*):

1. the absence of serious anti-trust policies,
2. industrial policies that are biased toward restricting entry,
3. trade regimes biased toward the use of quantitative barriers that are conducive to higher level of price-cost margins domestically,
4. concentration of industrial power in minority (ethnic) groups facilitating collusion,
5. weakness of capital markets acting as added barriers to entry into sectors with supernormal profits,
6. anticompetitive effects of the presence of conglomerates (the close linkages between incumbent firms and their affiliated banks raise the entry costs to outsiders).

There is no direct evidence on the importance of scale economies in developing countries. It has always been (intuitively) argued that the ISI strategies combined with the smallness of developing countries' internal markets limit the exploitation of economies of scale (EOS) [see, for example, Balassa (1987) or Krueger (1978)]. Sheltered domestic markets tend to establish high-cost capacities of non-optimal scale with far too many varieties of products. Note that the latter may seem to be in conflict with the evidence of high concentration ratios. However, the fact that monopolistic and oligopolistic rents discourage innovative activities, learning processes, improvements in capacity utilization and cost reduction via exploiting EOS adds some weight to the above argument of limited exploitation but potential importance of EOS. While it might be argued that availability of cheap labour in developing countries should in theory lead to the choice of less capital-intensive technologies which are generally less subject to EOS, informal and anecdotal evidence suggests that in practice ISI has led to adoption of more capital-intensive manufacturing than is warranted by

their overall factor endowment. This observation lends support to the notion that EOS are important and yet unexploited.<sup>3</sup>

To return to the trade liberalization gains, however, the safe conclusion is that estimates based on perfect competition and constant returns of scale models cannot be used for direct policy advice. To be useful for such a purpose, models have to incorporate procompetitive and scale effects of freer trade regimes.

It might have been expected that the recent developments in trade theory would be oriented primarily in that direction. However, most of the work done recently has been perceived as trying to prove the potential gains of trade intervention, not of trade liberalization. Before I proceed to review some of the "new" theory's conclusions, let me make a brief comment on the "newness" of the trade theory which emphasises imperfect competition and returns to scale. It is perfectly true that both imperfect competition and scale economies received a fair amount of attention in postwar developments in the theory of trade policy with domestic distortions and in informal considerations of scale economies.<sup>4</sup> But they were mostly treated as theoretical curiosae (although not by policy-makers in most countries) and as such were left out of the standard trade model. Only recently, the spillover of some ideas from the area of industrial organization into the trade theory placed these considerations at the centre of explanations of the observed pattern of trade. This intellectual arbitrage between international trade and industrial organization (as Srinivasan (1988) calls it) yields a different perspective from that of the conventional theory of commercial policy, and that is what constitutes its newness.

### III. "NEW" TRADE THEORY — INDUSTRIAL ORGANIZATION APPROACH TO TRADE

The emergence of the industrial organization (IO) approach to trade in the early 1980's was a result of several factors that had pressed trade economists to come to terms with some aspects of reality. First of all there was a need to satisfactorily explain observed trade flows (as intra-industry trade) that do not fit readily into conventional trade theory. The potential of importance of intra-industry trade and its prevalence in industries associated with significant economies of scale and supernormal profits, had been recognised for some time but conventional trade theory mostly ignored them because of the lack of analytical tools to deal with them. With the development

---

<sup>3</sup> For example, Balassa (1987) says: "International trade makes it possible for developing countries to overcome the limitations of their domestic markets in exploiting economies of scale and ensuring full capacity utilization, thereby avoiding the dilemma of building ahead of demand and operating with a low degree of capacity utilization or constructing less than optimal size plants."

<sup>4</sup> For a synthesis and generalization of the theory of commercial policy under distortions see Bhagwati (1971). Almost all work on ISI (and outward orientation) include some observations on economies of scale. See for example Krueger (1978), Balassa (1988) or World Bank Development Report 1987.



of general equilibrium approaches to some forms of imperfect competition those tools became available. On the other hand, the attitude of trade economists towards the partial-equilibrium analysis has changed to the extent that they became willing to trade off some generality for the richness of behavioural analysis that is possible in partial equilibrium models of imperfect market structures (Deardorff, 1985:15). The last factor, but not the least pressing one, was increasing demand for government protection,<sup>5</sup> mentioned already in the introductory section of this paper.

The IO approach, preceded and then joined by developments in the area of increasing returns to scale, provided trade theory with many variants of trade models based on very special assumptions. Despite the apparent specialness of these models, it is possible to group them in two classes. One class of models concern the cases where increasing returns to scale do not result in supernormal profits (that is, models with external economies of scale and models with monopolistic competition). The second class of models relate to cases where EOS are internal to the firm and create partial or complete market power for firms, resulting in supernormal profits. These models include monopoly and oligopoly trade models, the latter typically involving strategic game theory. The cases involving domestic monopoly were extensively researched both within the HOS and the "new" frameworks so I shall not survey them here.

### *1. Models without supernormal profits*

#### a) External Economies of Scale<sup>6</sup>

Trade models with external economies of scale began to appear a decade before the "new" IO approach because they did not require the abandonment of the assumption of perfectly competitive world. Essentially three levels of external EOS are recognized in these models — at the level of the industry, the nation and the world. The work on models with external EOS has yielded some interesting results:

1. The presence of external EOS provides a basis for trade that is logically independent of comparative advantage (such as the case of trade between completely identical countries).

2. External EOS require countries to concentrate on a small number of tasks but, contrary to comparative advantage, the issue

<sup>5</sup> The most interesting is Bhagwati's (1989:17) comment on the effects the new trade approaches have on the supply of protection: "... the resistance to the *supply* of protection by these [EEC's and USA] executives may have been imperilled by careless and incomplete assessments of recent developments in the theory of commercial policy itself."

<sup>6</sup> In treatment of external economies of scale a number of different approaches were explored. See for example Jones (1968), Herberg and Kemp (1969), Melvin (1969), Kemp (1969), Kemp and Negishi (1970), Eaton and Panagariya (1979), Ethier (1979), Markusen and Melvin (1981), Panagariya (1981) and an excellent survey by Helpman (1984).

of which country does what is of secondary importance. Therefore, external EOS introduce a bias toward a multiplicity of equilibria, with patterns of specialization and trade being unpredictable. This however does not mean that they are indeterminate. The pattern of trade in the presence of external EOS depends on whether they pertain to national or to world levels of outputs. In the latter case, that is, when EOS are *international*, Ethier (1979) has shown that patterns of trade continue to be determined by relative factor endowments just as in the standard HOS model. Apart from this case, as Markusen and Melvin (1981) have shown in the case of national EOS, trade patterns depend on country size. In the limiting case of identical relative factor endowments, the larger country will export a product that possesses increasing returns to scale (see Figure 1).

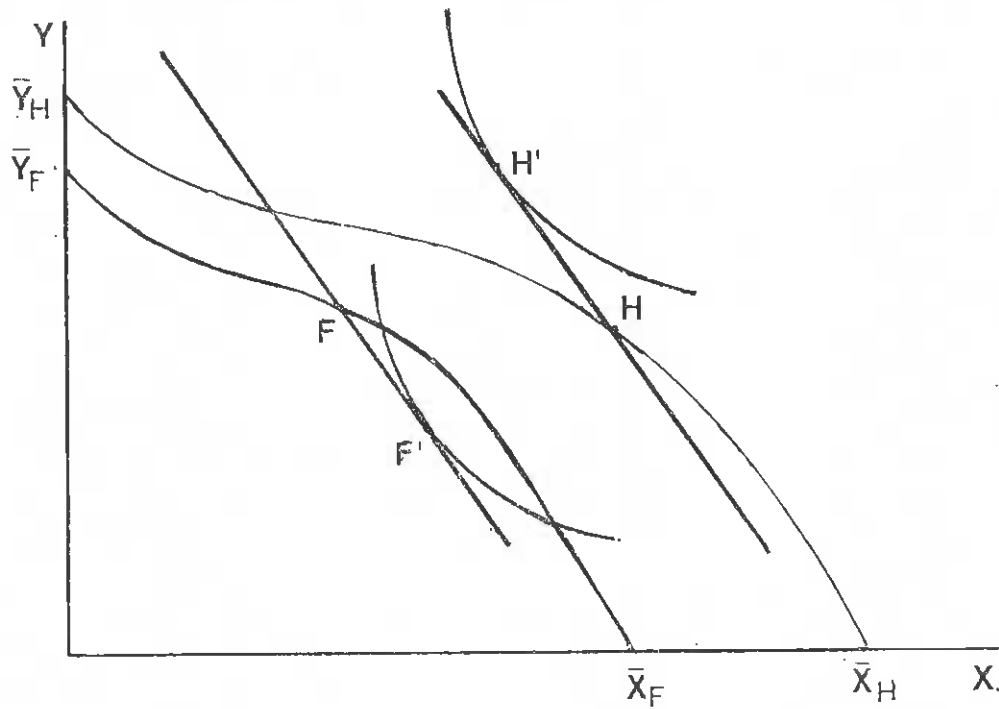


Figure 1

In the above figure industry Y exhibits constant returns to scale and industry X is subject to increasing returns to scale external to the firm in both the foreign (F) and home (H) country. Firms in industry X will behave as price-takers and produce with constant returns in their private inputs. If countries differ in size but have identical relative factor endowments, the marginal rate of transformation along a given ray from the origin will be smaller in the large country (H). At free-trade prices it produces absolutely more X ( $X^H > X^F$ ) and relatively more X ( $X^H/Y^H > X^F/Y^F$ ) and exports X, while country F imports it.

3. The implications of external EOS for the welfare effects of trade are somewhat different from the traditional ones. In fact, the presence of EOS introduces the possibility that trade results in losses. This does not come as a surprise. External EOS do constitute an

externality. Since firms cannot internalize all the benefits from increased production, they tend to underproduce and any free-market equilibrium is therefore only second-best (Deardorff, 1985). Introduction of free-trade in such a situation may be welfare-worsening. Specifically, if trade leads to further contraction of an already under-producing industry with EOS, the economy is likely, instead of moving towards its optimal production mix, to move away from it.<sup>7</sup> This possibility corresponds to Frank Graham's argument for protection as a means of preventing trade from reducing the output of an increasing returns industry. However, there is a strong presumption against the inevitability of losses. Indeed, the presence of EOS provide gains from trade in addition to the exploitation of comparative advantages.

As Helpman and Krugman (1985) suggest, the importance of a possible contraction of an increasing returns industry is not very large. This situation implies a concentration of EOS in a single country. Such concentration creates a presumption of larger scale of production worldwide than any one country would have had in the absence of trade. This in turn means that prices of EOS goods will fall, benefiting even countries that cease their production as a result of trade.

#### b) Monopolistic Competition

Economies of scale internal to the firm do not sit well with perfect competition because firms then tend to expand and to dominate their markets. Thus imperfect competition becomes the rule of the game.<sup>8</sup> Once we accept departure from perfect competition, which is characterized by a large number of firms each producing an identical product it is possible by relaxing one or both of these assumptions to arrive to one of many potential imperfect market structures. The simplest is pure monopoly; the most complex, conceptually and analytically, is oligopoly. Both are associated with the existence of supernormal profits. The intermediate case is *monopolistic competition* (first proposed by E. Chamberlin as the "large group case"), one in which all supernormal profits are competed away through free entry.

Essentially two types of monopolistic competition models are developed: neo-Chamberlinian models building on a closed-economy monopolistic competition model of Dixit and Stiglitz (1977) and neo-Hotelling models grounded on Lancaster (1966). Krugman (1979, 1980), developed a neo-Chamberlinian model by using a utility function that treats different varieties of a good separately but symmetrically. Iden-

<sup>7</sup> Markusen and Melvin (1984) suggested that a sufficient condition for gains from trade in such case is that trade have a certain rationalizing effect on production. In other words, if surviving industries expand output more than in proportion to the number of EOS industries lost due to the opening of trade, losses need not occur.

<sup>8</sup> As Deardorff (1985) points out, once we accept the realm of imperfect competition, the issues that arise from increasing returns to scale themselves may fade into insignificance, compared to the issues of market power and strategic behaviour on the part of the firms.



tical consumers in this model each consume a little of each variety and are better off the more varieties they are able to consume at once.

Lancaster (1980, 1984) and Helpman (1981), following the characteristics approach to consumer theory, assume that consumers are differentiated in terms of their preferences. Each consumer consumes only the single variety of a good that suits him or her best but all consumers together consume a large number of varieties, provided that they are available. In both models an increase in number of varieties raises average utility.

Despite assuming quite different behaviour on the part of consumers, these two models have similar implications concerning trade but not trade policy, as we will see shortly. Most significantly, they emphasize the distinction between intra-industry trade based on product differentiation and scale economies and inter-industry trade based on the traditional factor endowment considerations. Intra-industry trade would be most prominent among similar economies, whilst countries that differ substantially in relative factor endowments would tend to produce all varieties of different goods so that trade among them would be of an inter-industry character.

In these models the gains from trade are over and above the gains from inter-industry trade because of: 1) fuller utilization of EOS (due to decreasing average production cost, exit of redundant firms and specialization of firms and inputs), 2) increased number of varieties offered to consumers<sup>9</sup> and 3) increased competition among firms in producing similar products. In addition, even if two countries are identical in every respect, trade could be gainful for both (in terms of increased welfare relative to autarchy).

These models differ, however, with respect to commercial policy. In neo-Chamberlinian models import protection (say, tariffs) raises the price of imported varieties relative to domestic varieties and results in a reduction of imports. Because domestic consumers increase their consumption of domestic varieties, exports of these varieties fall. A rise in unit costs is not excluded, either. Therefore, import protection is welfare-worsening.<sup>10</sup> In a neo-Hotelling model the effects of tariffs might in certain circumstances be welfare-improving (Lancaster, 1984). In such a situation tariffs in fact promote entry and in turn increase product variety and decrease the price (Figure 2).

An import tariff initially raises the price of imported varieties from  $p_i$  to  $p_i^*$ . This results in the price of domestic varieties rising and profits increasing. Since there is a free entry, increased profits attract new domestic firms into the market. Given decreasing production costs, this leads to a lower price ( $p_i$ ) than under free trade.<sup>11</sup> Greenaway (1985, p. 86–87).

<sup>9</sup> Trade typically reduces the number of varieties produced domestically but total varieties, domestic and imported, available to consumers increase.

<sup>10</sup> However, if trade results in higher than "socially optimal" product variety, welfare might be reduced (Greenaway and Tharakan, 1986).

<sup>11</sup> It also results in product variety increase because new firms have an incentive to supply new varieties in addition to the imported ones.

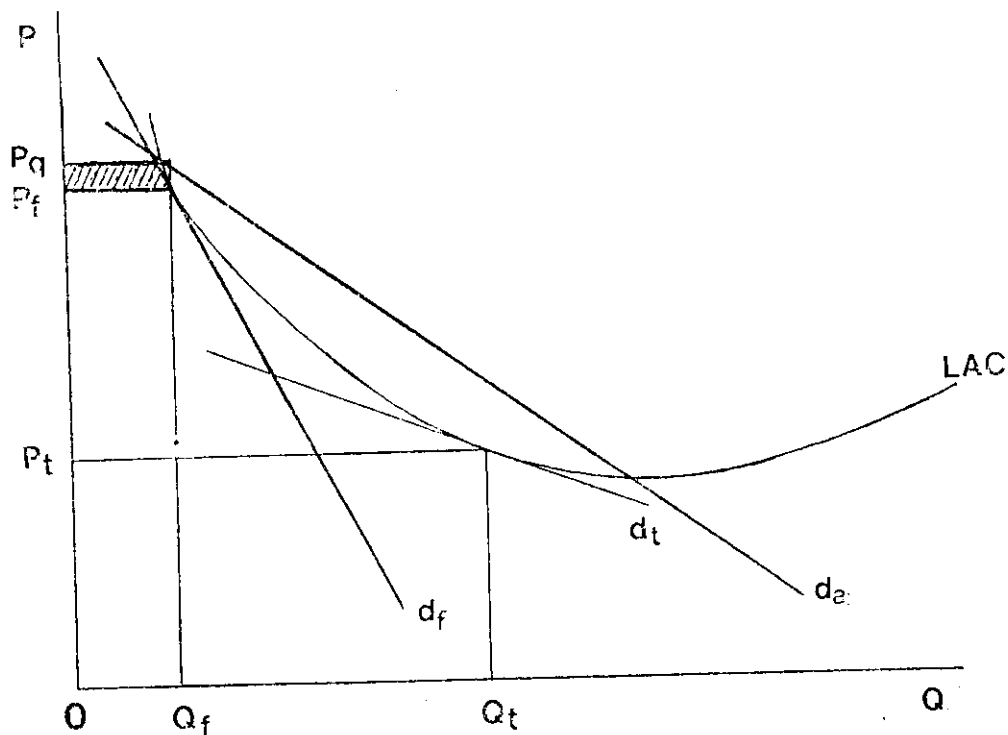


Figure 2

But this of itself should not establish a case for protection. As Greenaway and Tharakan (1986) argue, there are two important questions to consider here. The first is concerned with the optimality of a tariff as the instrument for correcting domestic distortion (in this case inadequate product variety). Obviously, a production subsidy would be more efficient since it would increase the number of domestic varieties without increasing the price of imported ones. The second question relates to the "socially optimal" degree of product variety. To answer that question one has to consider the fixed costs of new product variety development. Only where such costs are less than an increase in consumer surplus resulting from increased variety, does welfare improve under a tariff.

Finally, there is one more interesting result to be noted. Contrary to the effects of the opening of inter-industry trade, intra-industry trade could (under certain circumstances) result in gains for all factors of production. If countries' trade is predominantly of an intra-industry type, with the gains from larger scale and increased choice being large, the income-distributional Stolper-Samuelson effects of trade will be small, making free trade preferable for all with no need for transfers (Krugman, 1981).

## 2. Models of Oligopoly

Work in this area so far consists of special models and examples. I shall not review all of them; instead I have chosen two "representative"

models. One focuses on profit-shifting while the second one reintroduces the infant-industry argument in a somewhat different light.

Oligopolistic markets, as was noted before, are associated with the existence of supernormal profits. The difference that the profit component makes to our model of trade will be discussed shortly. Let me first briefly outline the basis for trade in oligopoly structure.

Consider two identical countries, home and foreign. In each country there is a small and fixed number of firms producing good X (one variety of it, or several varieties that are perceived as perfect substitutes). EOS in production of good X are internal to firms. Production of good Y is characterized by constant returns to scale and perfect competition.

Now, because our countries are identical in every respect, there is no comparative advantage basis for trade.<sup>12</sup> The opening of trade would however have noticeable effects. Each producer in X industry would be faced with more competitors. The exact implications of increased competition cannot be determined without information on firms behaviour. Assuming Cournot-Nash behaviour, it is possible that the price of X drops and quality supplied increases now that competition is more fierce. Oligopoly itself constitutes the basis for trade. More precisely, trade in goods is not actually needed because (in our example) countries remain self-sufficient in both goods. That is why Ethier (1987) says that oligopoly is a basis for the removal of trade barriers rather than a basis for trade.

The procompetitive gains of such trade could be impaired by the introduction of transportation costs, in which case we end up with each firm charging a lower price for exports (the case of reciprocal dumping). Similarly, different behavioural assumptions could produce different outcomes. Still, the existence of imperfect competition in domestic markets provides a basis for trade on the grounds that potential procompetitive gains and rationalization (and greater diversity in the case of product differentiation) increase welfare.

Let me now turn to the issue of supernormal profits and its consequence for the welfare effects of trade policy. Among several sources of supernormal profits, two are more often emphasized in trade models so far: (i) presence of significant barriers to entry and (ii) R&D externalities. Whatever the source, the mere existence of supernormal profits has a significant implication for the role of trade intervention. That role is seen to be beneficial to the national interest in so far as trade policy could improve a country's welfare. This new mechanism for welfare-improving trade policy, in a nutshell, goes as follows. Given positive supernormal profits for the foreign and domestic firms that are serving a particular market, welfare of a home country depends in part on how these profits are shared between these two types of firms. Trade policy can be used to help domestic firms to capture (for themselves and the home country) a larger share of supernormal profits in both domestic and foreign markets. Hence trade policy might result in

---

<sup>12</sup> EOS themselves are a basis for trade but we shall concentrate only on oligopoly.

a welfare improvement. Despite many offsetting effects it is not difficult to construct cases in which the net gain in profits is positive.

An example, given by Brander and Spencer (1985)<sup>13</sup> includes two firms from two countries competing only in a third market where they sell a homogeneous product. In the structure modelled as a classic Cournot duopoly, there is scope for export subsidies to change the outcome of the competition between these two firms in favour of the subsidizing country's firm. Moreover, the benefit to the firm can be larger than the cost of the subsidy to the government. Specifically, in a Cournot duopoly, each firm operates under the conjecture that its output decisions do not affect those of its competitor. Since, under this assumption, each firm will react negatively to any change in the other's output, this means that firms systematically underestimate the effect on their own profits of an increase in output. Hence the home government's export subsidy (in this case equivalent to a production subsidy) should correct the above misperception and result in increased output of the home firm. This in turn permanently raises the share of supernormal profits accruing to the home firm (see also Figure 3).

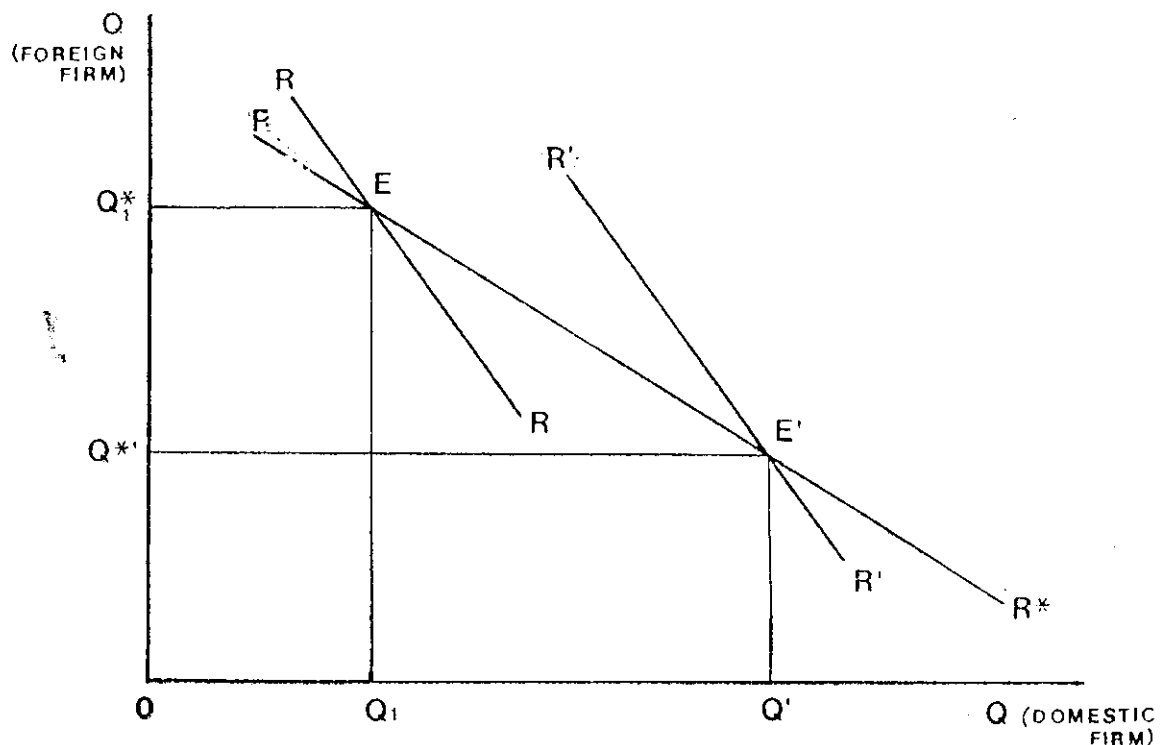


Figure 3

<sup>13</sup> The interpretation of the authors themselves is somewhat different. While both firms in the model behave like Cournot duopolist all the time, one government (of a home country) is assumed to grant an export subsidy to induce its domestic firm to produce an output that corresponds to the Stackelberg leader position, whereas the government of a foreign country has a passive role. The result is identical to the one of the Stackelberg's asymmetrical duopoly: the total output is increased and per-unit profit falls, but because the follower makes room for the leader, the leading country's share of the market increases sufficiently to increase its total profit.

In the absence of policy intervention reaction curve of home firm is  $RR$ , while the reaction curve of foreign firm is illustrated by  $R^*R^*$ . The point  $E$  is a market equilibrium in the sense that each firm's choice of output is optimal given the other firm's choice. The export subsidy shifts the home firm's reaction curve to  $R'R'$  and new equilibrium shifts to point  $E'$  with a permanently higher share of the industry's pool of supernormal profits accruing to the home firm (Grossman and Richardson, 1985, p. 8–10).

Unfortunately, this example is very sensitive to the assumptions regarding conjectural variations embodied in it. As Eaton and Grossman (1983) have shown, the efficiency of an export subsidy disappears as the number of firms in the industry is increased beyond two. Furthermore, it seems that with new entrants the optimal trade policy works more through the terms of trade and less through the capture of supernormal profits as was originally suggested.

Regarding the R&D externalities<sup>14</sup> as a source of supernormal profits, Krugman (1984) has developed a model of the familiar infant-industry argument but with an added strategic dimension. In his model he assumes that home and foreign markets are segmented and that there are increasing returns to scale in production. Under the behavioural assumptions embodied in the model each firm's output is a function of its expected marginal cost while its actual marginal cost is a function of output. Since both firms can supply both markets, cost schedules are interdependent, i.e. each firm's marginal cost is negatively related to the other's. Given the passive reaction of the foreign firm, a tariff in the domestic market has beneficial effects. The tariff provides the home firm with an advantage in scale of production over a foreign firm in the form of lower marginal costs and higher market share in both domestic and foreign markets. In other words, the home firm's costs decrease with cumulative increase in output, reflecting the import protection's effectiveness in promoting the appropriation of knowledge associated with learning by doing. As a result we have a new formulation of the classic "infant-industry argument" for protection where import protection serves as export promotion (of course, only for the industry concerned).<sup>15</sup>

Some caveats must be noted, though. The case for policy intervention occurs only when learning benefits are not internalized. If "learning knowledge" can be internalized by firm, there is no reason for intervention. Also, if this knowledge generated by the home firm spreads freely and becomes available internationally, there is no motivation to promote such activities. Indeed, the single small country does

<sup>14</sup> It is more correct to speak about the learning benefits than R&D externalities. As it is shown below, Krugman's model implies an increase in output as the means by which welfare is improved. Now, while we can find proportional relationship between the spillover benefits of learning and quantity produced, R&D expenditures are not directly linked to output but through a complex chain of behavioural relations [cf. Caves (1987)].

<sup>15</sup> The welfare effects of the import protection are not explicitly evaluated in this model. However, implicitly, they are positive since the post-tariff price of domestically produced good is lower than the pre-tariff price (because of the scale effect on marginal costs).



best by riding free on other (foreign) producers' investment in knowledge (Caves, 1987). Only in the case where "learning by doing" is knowledge generated by the home firm and diffuses nationally, is there motivation for intervention.

The question is whether an import tariff here is an optimal policy. Obviously it serves to remove a domestic distortion (in this case sub-optimal output of this particular industry). Then a production subsidy or other policies leading to output expansion can be seen as optimal.<sup>16</sup>

Further complications stem from the fact that the above case for import protection (as well as the Brander-Spencer type of case) is based on national advantages and is seriously impaired if foreign governments retaliate. Such retaliation is even more likely in the case of these knowledge-intensive industries because many governments would happily use trade intervention in order to help their firms in obtaining "first-mover advantages". The likely result then is a technology race characterized by overinvestment and losses to all participating in the race.<sup>17</sup>

To conclude this section it is fair to say that the "new" trade theory has indeed identified a new role for trade intervention. That role is based on recognition that supernormal profits constitute an element of national income that can be a legitimate object of concern for trade policy. The role of trade policy could be offensive (the capture of a larger share in profits in foreign markets via exporting) or defensive (by preventing foreign firms from capturing greater profits in the domestic market). However, this conclusion requires some qualifications. First, the efficacy of either one largely depends on assumptions that i) governments can make credible promises where individual firms cannot and ii) foreign governments are passive, i. e. do not retaliate. Both of these assumptions are very fragile. Second, the case for strategic intervention and the type of intervention are very sensitive to the specification of the model and the behavioural relations they embody. Third, there is no guarantee that policies other than trade intervention would not do a better job. This is a particularly important issue given the strong presumption from the competitive analysis that trade policy is inefficient. Finally, Dixit (1984) emphasizes the danger that vested interests will misuse these new arguments for protection. In this case, intervention could cause an aggregate welfare loss while providing private gains to small interest groups.

These recent developments in trade theory, taken as an addition to traditional theory, should in fact be seen as strengthening the role of free trade. Firstly because they identify additional sources of gains from unrestricted trade and secondly because they do not give any stronger arguments for trade intervention than those which have been already considered and "dismissed" by traditional theory of commercial policy.

---

<sup>16</sup> Quite expectedly, tariff becomes optimal policy in face of external distortions (Venables, 1986).

<sup>17</sup> See also Bhagwati (1989, p. 39-41).

## IV. IMPLICATIONS FOR DEVELOPING COUNTRIES

The previous section's conclusion underlines how welcome the "new" trade theory is as an addition to the standard HOS model in explaining more fully why (free) trade is likely to be preferable. Despite this, the arguments of the "new" theory have been mainly (mis)used to justify a revived demand for protection and implementation of industrial policies in developed countries. There is a danger that some developing countries, especially those burdened with large foreign debts and subjected to economic and trade reforms, might begin to exploit these arguments in order to retreat from reforms. That is why it is very important to know just how relevant these "new" arguments are for developing countries. Unfortunately, the "new" theory was developed with a focus on developed countries and there are no straightforward implications for developing countries. Hence my attempt to identify the most important implications for developing countries proceeds by a way of a brief comparative survey of the implications of the main types of trade theory. A summary of this survey is given as Table 1.

1. *Heckscher-Ohlin-Samuelson Theory*. The basis for trade in the HOS model is comparative advantage arising from substantial differences in the relative factor endowments between countries. Exchange of goods whose relative prices in the absence of trade are different is mutually beneficial for all trading partners. These gains from trade can be (conceptually) separated into gains from exchange and gains from specialization. To enjoy gains from exchange no adjustment of production combination is required; these gains result simply from the ability to trade at a relative price that differs from the one prevailing in the absence of trade. For the realization of gains from specialization a country needs to change its production mix in line with its relative factor endowments (i. e. comparative advantage). Protection, except in some unimportant cases, is necessarily welfare-worsening.

Given the special features of developing countries regarding overall factor endowments (that is, capital and skilled labour scarcity and abundance of non- and semi-skilled labour), the HOS theory suggests that developing countries should specialize mostly in labour-intensive goods and exchange them for capital-intensive goods produced in developed countries. Krueger (1984) argues that the above conclusion was frequently interpreted as implying that free trade will reinforce developing countries' role as primary commodity producers. Therefore, much of the rejection of the free trade argument was a rejection of the above interpretation as developing countries reacted against the proposition that they continue to specialize in primary commodities. However, a modern interpretation of the  $n$  commodity,  $m$  factor model gives a different perspective on specialization based on comparative advantages, one that is more acceptable to developing countries. Thus free trade remains the preferred policy prescription for both developing and developed countries.

2. *National external economies of scale*. As was noted in section III, the introduction of external EOS in the trade model allows for

Table 1. Summary of implications of some theories for the developing countries

Theory	Special feature	Basis of trade	Nature of trade	Gains from trade	Policy implication
1. HOS	capital scarce labour abundant	comparative advantage based on relative factor endowments	inter-industry	gains from exchange gains from specialization	free trade
2. External EOS (national)	unexploited EOS (small internal markets)	historically and accidentally determ. (first- mover advantage) or large country exports EOS good	mainly intra-industry	over and above conventional gains also possibility of losses	production subsidy
3. External EOS (international)	MNC that facilitate trade are located in developed countries	HOS specialization in intermediate products	mainly intra-industry	see no. 2 above	promote domestic MNC's
4. Monopolistic competition and product differentiat.	small internal markets; tradeoff between efficiency and product variety	demand for variety relative factor endowment and relative country sizes play role	mainly intra-industry	gains from greater diversity and lower prices	free trade but import restrictions in certain circumstances
5. R&D externalities learning effects	at earlier stage of learning	first-mover advantage	inter- and intra-industry	decreasing costs rationalization	infant-industry protection (compensation or subsidy)
6. Profitshifting	MNC foreign owned small countries	oligopoly itself	inter- and intra-industry	procompetitive gains in addition to conventional gains	strategic trade in absence of retaliation and free riding

gains from trade over and above conventional gains just discussed under 1) above. On the other hand, it also introduces the possibility of losses from trade. How real is the danger that developing countries would suffer losses from trade under EOS? Recall the implications of EOS on the pattern of trade. It was said that the trade pattern is highly unpredictable and can be determined by historical or accidental factors, such as "first-mover advantage". Alternatively, in case of identical factor endowments, the large country will export the EOS good. Now, the special feature of developing countries is the smallness of their internal markets. Thus even if they had identical relative factor endowments to those of developed countries, they will end up importing goods that are subject to EOS. Given the significant differences in overall relative factor endowments between developing and developed countries, it is likely that countries with higher relative capital and skilled labour abundance will specialize in EOS industries, while developing countries will be left with constant- and diminishing- returns industries. The gains from trade for developing countries thus consist of conventional gains from trade in constant returns to scale goods and of an added gain from being able to import EOS goods at lower prices. But they miss out on the gains that arise from increasing the output of the EOS good. Since those gains have attributes of technological progress and taking into account the fact that developing countries perceive trade as a factor that should enhance growth, the gains they do in fact realize are less than needed. In that context a production subsidy can be regarded as the optimal means for developing countries to establish EOS industries. Since that measure does not directly influence trade flows, the prescription for trade policy should remain free trade (see also 5) below).

3. *International external economies of scale.* If we assume that EOS are determined by the size of world output, geographic location becomes almost irrelevant. As world output of a particular commodity increases, greater degrees of specialization are allowed and this can give rise to EOS even if national output is unchanged (Ethier, 1987). The pattern of trade with international EOS is predicted by the HOS theory. If, say constant returns to scale good Y is relatively labour intensive, inter-industry trade will result with countries that are relatively rich in labour exporting good Y in exchange for EOS good X. When factor endowments between trading partners differ significantly, their mutual trade will mostly be of an interindustry character. On the other hand, small endowment differences reduce the incentive for inter-industry trade by causing the integrated (world) X industry to be divided relatively evenly between countries thereby inducing intraindustry trade. In the extreme case of identical factor endowments, countries will be self-sufficient in good Y. But they gain<sup>18</sup> from trade by establishing a single rationalized X industry. All trade will be intraindustry implying geographic dispersion of production. It is more likely that such trade will occur in intermediate products.

<sup>18</sup> Helpman (1984) demonstrates that under certain circumstances identical countries could lose from trade, i. e. world output of EOS good after trade is not larger than each country's autarchy output level.

The existence of intra-industry trade in intermediate products between developing and developed countries is ensured by multinationals (MNCs) and the phenomenon of intra-firm trade. Typically, MNCs operating in developing countries will develop specialization in more labour-intensive stages of production while more capital and skilled labour-intensive phases would still be geographically concentrated in developed countries. The gains from trade exist in so far as such international division of labour and specialization allows an increase in productivity which is not possible within the small national markets of developing countries. Thus any impediments to such trade would result in suboptimal allocation. However, we can argue that because distribution of gains in this trade is generally in favour of developed countries (with profits of MNCs going to their countries of origin), the developing countries should try to promote such trade among themselves. Promotion would require relaxation of trade barriers and establishment of institutional framework (such as domestic MNCs or trading agencies as in Korea). Since this argument involves diverting trade from developed countries and creating trade with developing countries, there is no presumption that welfare must be improved.

4. *Monopolistic competition and product differentiation.* Monopolistic competition and product differentiation introduces a new source of gain from free trade. Trade improves welfare because demand for variety (preference diversity) can be better satisfied with trade than in the absence of trade. One of the problems here, with developing countries, is that trade may introduce varieties that are not "appropriate" in terms of type or number for the society in question (Greenaway and Tharakan, 1986). Therefore, if trade takes a developing country beyond the "socially optimal" level of product differentiation, it could be welfare reducing. Consequently, the trade with developed countries can be seen as introducing inappropriate varieties of consumer and/or producer goods, thereby reducing welfare. In such a case a restriction (quota) on imports might be welfare improving.

Stewart (1984) argues along similar lines in favour of promotion of trade among developing countries in differentiated products as the means to improve the level of appropriateness of products for developing countries. It is very uncertain however whether such promotion could result in welfare improvement. Firstly, here again we have a case of trade diversion. Secondly, developing countries typically employ modern developed countries' technology in production of differentiated products and thus only reproduce characteristics of goods suitable for more developed countries.

Another problem relates to the pattern of trade. It has been shown that the pattern of trade under monopolistic competition and product differentiation depends on both relative factor endowments and relative country sizes. A more capital abundant and/or larger country would end up as the net exporter of a differentiated good while the other country will end up as a net exporter of a homogeneous good. In our context developing countries can be thought of as less capital abundant and/or smaller countries and with free trade the ones that produce and export homogeneous goods.



We have seen that trade under monopolistic competition and product differentiation is not based on comparative advantage of any type in so far as even completely identical countries can find mutual trade (which will be intra-industry) beneficial. Furthermore, the more similar countries are, the larger will be the share of their trade which is of intra-industry character and the greater possibility that all factors of production will gain from trade. This in turn eases post-trade adjustment since no severe structural reallocation is necessary and there is less resistance from interest groups. Now, because developing and developed countries differ significantly in relative factor endowments and sizes, their trade is a largely inter-industry and that impairs developing countries in two ways: (i) they are left with the role of net exporters of homogeneous constant or diminishing returns goods where the gains from trade are only of conventional type and (ii) inter-industry specialization and trade produces familiar distributional effects and scarce factors lose from trade. The direct implication of that is twofold. First, the resistance of unions in developed countries to trade liberalization of imports from developing countries is stronger. Secondly, the resistance of capital owners in developing countries' import competing sector is stronger, too. This line of reasoning led some [such as Stewart (1984)] to argue for more intensive trade in differentiated products among developing countries. The lesser dissimilarity in factor endowments among developing countries should breed larger intra-industry trade among them providing them with larger gains than in trade with developed countries. Also it should develop production of differentiated goods with which developing countries would be able to enter developed countries' market with less resistance.

I am not convinced by the argument that if developing countries were involved in intra-industry trade with developed countries there would be weaker resistance on the part of developed countries to greater trade between them. After all, aren't we witnesses to voluntary export restraints especially in intra-industry trade (say, automobiles) towards both Japan and Korea? This only reflects the fact that lobbying for protection is not product-based but industry-based. Hence increased exports of one product variety although it might not induce losses for the factors employed in production of that particular product variety, would invoke a protectionist response by factors employed in the industry to which that product belongs.

5. *R&D externalities and learning benefits.* Policy intervention in this area is in my belief the most relevant issue for developing countries. If we accept that gains from trade are in fact assessed differently from the developing countries' point of view (in so far as trade should bring development effects in addition to static allocational effects), then market failures in the area of acquiring learning knowledge have serious consequences for developing countries. Because developing countries cannot acquire the learning of developed countries they specialize in production with lower learning phenomenon and so impair their growth potential. "Learning itself, and the fact that learning (and learning to learn) is localized means that it will not be optimal to pursue myopic policies; one cannot use current comparative

advantages as the only basis for judgements of how to allocate resources" (Stiglitz, 1989, p. 199). In other words, if there are industries where learning economies are substantial (or could be established), policy intervention is justified.

However, trade intervention remains the only next-best policy here, although probably the only one available to developing countries. The first-best policy would be to compensate firms for their intangible contributions or to subsidize them in the case of "learning by doing" economies.

6. *Profit-shifting.* As noted, the existence of oligopolistic markets provides of itself a basis for trade. Introduction of trade will increase competition and reduce profits. If there is free entry and exit this tends to reduce the number of firms and increase the output per firm which in turn increases productivity under EOS. This rationalization produces additional gains from trade and thus welfare improvement.

On the other hand, welfare could be increased, as shown in section II, through involvement of the home government in strategic games which provides the home firm with the larger share of profits.

How relevant is this profit-snatching idea for developing countries? To answer this question we should first consider the features of these countries. The most obvious one is their smallness. The small size is not reflected only in the inability to affect the prices of traded goods. It also implies the inadequate amount or lack of supply of some factors of production which in turn limits technical economies of scale. Small countries typically face the tradeoff between inefficient diversification in production and too high a concentration in production of homogeneous products. Although not necessarily, smallness is reflected in the size of government budget. All of this makes a small i. e. developing country a weak player in strategic games.<sup>19</sup> However, if a small country engages in strategic policy to capture more of the profit through higher price (not larger quantity) it in fact makes a credible promise to remain small and it might be just let to get away with this (Dixit, 1988). The problem with this is that developing countries are not engaged in industries where price, often combined with high quality, is the strategic variable. They are engaged in lower quality product differentiation and that not to the extent as to ensure any significant niches in developed countries' market. Moreover, if they are producing and exporting differentiated product more often than not it would be under the operation of MNCs that are not domestically owned. Hence any intervention toward the increase in the share of profits of these firms (in domestic or foreign markets) would make sense only if profits will not be repatriated.

<sup>19</sup> Dixit (1988) suggests that small countries are not necessarily weak. Indeed, he says, we find many small countries flourish uncrushed. Part of the explanation for this he finds in the ability of small countries "to act as free riders in economic or political alliances of regimes, while larger countries bear the costs of providing the public goods that sustain the groups".

## V. CONCLUDING REMARKS

The discussion has suggested that for developing countries to benefit from trade based on imperfect competition and economies of scale, they need not get involved in a heavy trade intervention or strategic trade policies. The type of intervention found appropriate in most cases was in the area of industrial policy. Only in the case of monopolistic competition and product differentiation was an import restriction found welfare-improving and that only under certain circumstances.

Probably the best argument against such intervention, however, are estimates of gains from trade liberalization with increasing returns and imperfectly competitive market structures. General equilibrium calculations<sup>20</sup> suggest that the presence of economies of scale and imperfect competition magnifies the traditional gains from trade liberalization. More specifically, if trade liberalization results in increased competition and rationalization of a particular industry, gains from liberalization are noticeably larger than in the case of perfectly competitive markets with constant returns to scale. It is more likely that such an outcome will occur in environments where entry and exit are allowed, but this is not a necessary condition. Hence, developing countries would do best if they choose to stick to trade liberalization reforms.

Received: 14. 12. 1989  
Revised: 7. 05. 1990

## REFERENCES

- Ballasa, B. (1987), "The Importance of Trade for Developing Countries", *Banca Nazionale del Lavoro*; 437—469.
- Baldwin, R. (ed.) (1988), *Trade Policy Issues and Empirical Analysis* (Chicago: University of Chicago Press).
- Bhagwati, J. (1971), "The Generalized Theory of Distortions and Welfare", in J. Bhagwati et al. (eds), *Trade, Balance of Payments, and Growth* (Amsterdam: North-Holland).
- Bhagwati, J. (ed.) (1982), *Import Competition and Response* (Chicago: University of Chicago Press).
- Bhagwati, J. (1988), *Protectionism* (Cambridge, Mass.: The MIT Press).
- Bhagwati, J. (1989), "Is Free Trade Passé after All?", *Weltwirtschaftliches Archiv*, Band 125, Heft 1:17—45.

<sup>20</sup> Harris (1984) for Canada and Deverajan and Rodrik (1989) for Cameroon are the only two available to me. Rodrik (1988) gives some estimates for Turkey, but they are based on partial-equilibrium simulations.

- Brander, J. A. and B. J. Spencer (1985), "Export Subsidies and International Market Share Rivalry", *Journal of International Economics*, 18:83—100.
- Brander, J. A. and B. J. Spencer (1981), "Tariffs and the Extraction of Foreign Monopoly Rents and Potential Entry", *Canadian Journal of Economics*, 14:371—89.
- Buffie, E. F. and P. T. Spiller (1986), "Trade Liberalization in Oligopolistic Industries: The Quota Case", *Journal of International Economics*, 20:65—81.
- Caves, R. E. (1985), "International Trade and Industrial Organization", *European Economic Review*, 28:377—95.
- Caves, R. E. (1987), "Industrial Policy and Trade Policy: The Connections" in H. Kierzkowski (ed.), *Protection and Competition in International Trade* (London: Basil Blackwell).
- Dasgupta, P. and J. Stiglitz (1988), "Learning-by-doing, market structure and industrial and trade policies", *Oxford Economic Papers*, Vol. 40. No. 2:246—268.
- Deardorff, A. (1985), "Developments in International Trade Theory", in T. Peeters et al. (eds.), *International Trade and Exchange Rates in the Late Eighties* (Amsterdam: North-Holland).
- Deverajan, S. and D. Rodrik (1989), "Trade Liberalization in Developing Countries: Do Imperfect Competition and Scale Economies Matter?", *American Economic Review*, Vol. 79. No. 2:283—87.
- Dixit, A. (1988), "Issues of Strategic Trade Policy for Small Countries" in Haaland, J. I. and V. D. Norman, *Modelling Trade and Trade Policy* (Oxford: Basil Blackwell).
- Dixit, A. (1984), "International Trade Policy for Oligopolistic Industries", *The Economic Journal*, 94, Supplement: 1—16.
- Dixit, A. and J. Stiglitz (1977), "Monopolistic Competition and Optimum Product Diversity", *American Economic Review*, Vol. 67: 297—208.
- Eaton, J. and G. M. Grossman (1986), "Optimal Trade and Industrial Policy under Oligopoly", *The Quarterly Journal of Economics*, Vol. No.: 383—406.
- Eaton, J. and A. Panagariya (1979), "Gains from Trade under Variable Returns to Scale, Commodity Taxation, Tariffs and Factor Market Distortions", *Journal of International Economics*, 9: 481—501.
- Ethier, W. J. (1987), "The Theory of International Trade" in L. H. Officer (ed.), *International Economics* (Boston: Kluwer Academic Publishers).

- Ethier, W. J. (1979), "Internationally Decreasing Costs and World Trade", *Journal of International Economics*, 9: 1—24.
- Greenaway, D. and Chris Milner (1988), "Intra-Industry Trade: Current Perspectives and Unresolved Issues", *Kyklos*, : 39—57.
- Greenaway, D. and P. K. M. Tharakan, eds. (1986), *Imperfect Competition and International Trade* (Sussex: Wheatsheaf Books).
- Grossman, G. M. and J. D. Richardson (1985), *Strategic Trade Policy: A Survey of Issues and Early Analysis*, Special papers in International Economics, No. 15 (Princeton University).
- Helpman, E. (1981), "International Trade under Economies of Scale and Imperfect Competition: A Chamberlin-Heckscher-Ohlin Model", *Journal of International Economics*, 11: 305—40.
- Helpman, E. and P. Krugman (1985), *Market Structure and Foreign Trade* (Cambridge, Mass: The MIT Press).
- Helpman, E. (1984), "Increasing Returns, Imperfect Markets, and Trade Theory", in R. Jones and P. Kenen (eds.) *Handbook of International Economics* (Amsterdam: North-Holland).
- Herberg, H. and M. Kemp (1969), "Some Implications of Variable Returns to Scale", *Canadian Journal of Economics*, 2: 403—15.
- Jacquemin, A. (1987), *The New Industrial Organization: Market Forces and Strategic Behaviour* (Cambridge, Mass.: The MIT Press).
- Jones, R. (1968), "Variable Returns to Scale in General Equilibrium Theory", *International Economic Review*, 9:261—72.
- Kemp, M. (1969), *The Pure Theory of International Trade and Investment* (New Jersey: Prentice Hall).
- Kemp, M. and T. Negishi (1970), "Variable Returns to Scale, Commodity Taxes, Factor Market Distortions, and Implications for Trade Gains", *Swedish Journal of Economics*, 72:1—11.
- Kierzkowski, H. ed. (1984), *Monopolistic Competition in International Trade* (Oxford: Clarendon Press).
- Krueger, A. (1978), *Foreign Trade Regimes and Economic Development: Liberalization Attempts and Consequences* (Cambridge: Ballinger).
- Krueger, A. (1984), "Trade Policies in Developing Countries" in R. W. Jones and P. B. Kenen (eds.), *Handbook of International Economics* (Amsterdam: North-Holland).
- Krugman, P. (1979), "Increasing Returns, Monopolistic Competition, and International Trade", *Journal of International Economics*, 9:469—79.



- Krugman, P. (1980), "Scale Economies, Product Differentiation and the Pattern of Trade", *American Economic Review*, 70:950—59.
- Krugman, P. (1981), "Intra-industry Specialization and the Gains from Trade", *Journal of Political Economy*, Vol 89, No. 5:959—73.
- Krugman, P. (1983), "New Theories of Trade Among Industrial Countries", *American Economic Review*, Vol. 73, No. 2:343—47.
- Krugman, P. (1984), "Import Protection as Export Promotion", in Henrik Kierzkowski, ed. (1984).
- Lancaster, K. (1966), "A New Approach to Consumer Theory", *Journal of Political Economy*, 74:132—57.
- Lancaster, K. (1980), "Intra-industry Trade under Perfect Monopolistic Competition", *Journal of International Economics*, 10:151—75.
- Lancaster, K. (1984), "Protection and Product Differentiation", in H. Kierzkowski (ed.) (1984).
- Markusen, J. R. (1981), "Trade and gains from trade with imperfect competition", *Journal of International Economics*, 11:531—51.
- Markusen, J. R. and J. R. Melvin (1981), "Trade, Factor Prices and Gains from Trade with Increasing Returns to Scale", *Canadian Journal of Economics*, 14:450—69.
- Markusen, J. R. and J. R. Melvin (1984), "The Gains-From-Trade Theorem with Increasing Returns" in H. Kierzkowski (ed.) (1984).
- Melvin, J. R. (1969), "Increasing Returns to Scale as a Determinant of Trade", *Canadian Journal of Economics*, 2:389—402.
- Panagariya, A. (1981), "Variable Returns to Scale and Patterns of Specialization", *American Economic Review*, 71:221—30.
- Pearce, J. and J. Sutton (with R. Batchelor) (1986), *Protection and Industrial Policy in Europe* (London: Routledge & Kegan Paul).
- Rodrik, D. (1988), "Imperfect Competition, Scale Economies, and Trade Policy in Developing Countries", in R. Baldwin (1988).
- Srinivasan, T. N. (1988), "International Trade and Factor Movements in Development Theory, Policy, and Experience" in Ranis, G. and T. P. Schultz, eds. *The State of Development Economics: progress and perspectives* (Oxford: Basil Blackwell), pp. 536—69.
- Srinivasan, T. N. (1986), "Development and Strategy: Is the Success of Outward Orientation at an End?" in M. R. Shroff and S. Guhan (eds.) *Economic Progress and Welfare* (Delhi: Oxford University Press).

- Srinivasan, T. N. and J. Whalley (1986), *General Equilibrium Trade Policy Modeling* (Cambridge, Mass.: The MIT Press).
- Stegemann, K. (1989), "Policy rivalry among industrial states: what can we learn from models of strategic trade policy?" *International Organisation* 43, 1, Winter: 73—94.
- Stewart, F. (1984), "Recent Theories of International Trade: Some Implications for the South", in H. Kierzkowski (ed.) (1984).
- Stiglitz, J. E. (1989), "Markets, Market Failures, and Development" *American Economic Review*, 79:197—203.
- Venables, A. J. (1986), "Production Subsidies, Import Tariffs, and Imperfectly Competitive Trade" in Greenaway and Tharakan(eds.) (1986).
- Venables, A. (1985), *International Trade, Trade and Industrial Policy and Imperfect Competition: A Survey*, (London: Centre for Economic Policy Research).
- Whalley, J. (1984), "The North-South Debate and the Terms of Trade: An Applied General Equilibrium Approach", *Review of Economics and Statistics*, 66:224—34.
- World Bank, (1987), *The World Bank Development Report* (Washington).