Strategic Trade Policy
How New?
How Sensible?

W. Max Corden

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Crucial assumptions underlying this subset of theories from the
"new international economics" turn out to be unrealistic.

This paper — a product of the Macroeconomic Adjustment and Growth Division, Country Economics Department — is part of a larger effort in PRE to improve the understanding of the role of trade policy in economic development. Copies are available free from the World Bank, 1818 H Street NW, Washington DC 20433. Please contact Max Corden, room N11-023, extension 39175 (32 pages with figures).

The attention-getting new theories of "strategic trade policy" have been described as part of a "new international economics."

Corden shows how the new ideas are related to the established theory of trade policy and on what kinds of assumptions the principal conclusions hinge.

He sets out the assumptions and logical steps — some from static game theory — in some detail, with the aid of diagrams. Crucial assumptions turn out to be unrealistic.

These theories, Corden writes, were developed in the United States, and assume competition between firms belonging to large economies. Corden would hesitate to grant that the new theories have relevance in developed countries — much less developing countries.

But the discussion is of interest to policymakers in developing countries because the new theories may be used to support protectionist ideas in developed countries. This could harm the world trading system, including developing countries.

STRATEGIC TRADE POLICY: HOW NEW? HOW SENSIBLE?

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STRATEGIC TRADE POLICY: HOW NEW? HOW SENSIBLE?[1]

I. Introduction

This paper reviews some recent developments in the theory of trade policy that have to do with imperfect competition, strategic interactions as a result of oligopoly, and economies of scale. All these developments have been described as "the new international economics." In the view of some they represent major breakthroughs. One purpose of this paper is to examine how new some of this is and how it relates to the "orthodox" theory. The paper will focus on one major aspect of these developments, namely "Brander-Spencer profit-shifting" and its policy implications. This is expounded in some detail in the next three sections. The conclusion is that it relates closely to the existing framework of the orthodox theory of trade policy.

The new developments are of two kinds. Firstly there are positive theories of international trade which take into account internal economies of scale and monopolistic competition and fit these into general equilibrium models. While one could not possibly suggest that economies of scale are new in international trade theory – since a huge literature list could be provided, including Smith (1776) and Ohlin (1933, Chapter 3) – the novelty has been in fitting economies of scale with monopolistic competition into a formal general equilibrium framework. A good reference which brings a lot of this material together is Helpman

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and Krugman (1985). The present paper is not concerned with this topic.

Secondly there are theories which allow for oligopoly and strategic interactions among firms, and which introduce the idea that government policies, such as export subsidies or tariffs, may shift profits from a foreign firm to its domestic competitor, and that this may yield a national gain, at least provided the foreign government does not retaliate. Hence these theories have normative, implications, with possible policy relevance. This "profit-shifting" concept originated with a series of papers by James Brander and Barbara Spencer (1981, 1983, 1984, 1985) and it has generated a massive and highly sophisticated literature.[2]

It has been a genuinely new contribution to the theory of trade policy to attempt to allow for oligopoly and strategic interactions among private firms, as distinct from governments. A few earlier papers – notably Johnson (1953) – have dealt with oligopolistic interactions among tariff-imposing governments in the theory of tariffs and retaliation. But there has not been a

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[2]Two comprehensive books on this subject are Krugman ed. (1986) and Helpman and Krugman (1989). In addition, there are several very useful surveys. One which is very much in the spirit of the present paper, is by Deardorff and Stern (1987). The outstanding critique is by Grossman (1986). A comprehensive survey, with many references and discussing also the broader issues, is by Stegemann (1989). Other surveys of aspects of the subject, apart from those cited in the text, are by Dixit (1984), Grossman and Richardson (1985), Greenaway and Milner (1986, Chapter 12), Caves (1987), and Richardson (1989). With regard to policy implications, in particular, see Bhagwati (1989), who concludes "I am strongly opposed to strategic trade policymaking: whether to shift profits to oneself or to retaliate against rivals allegedly doing this."

hint of private sector oligopoly and strategic interactions in the formal "pre-Brander and Spencer" trade theory literature.[3]

The conclusions of the "new international economics" have been widely used to support protection. Yet, the original motivation for the new developments was not, on the whole, to advocate protection. Like so much earlier work in the field the aim has been, rather, to understand either what was actually happening or what some people were advocating. Here one should quote the pioneers. "Finally, it should be emphasized that our arguments should not be taken as support for using tariffs. The highly tariff-ridden world economy that would result from each country maximizing domestic welfare taking the policies of other countries as given would be a poor outcome. Our analysis is meant to contribute to an understanding of the motives that might underlie tariff policy, and provides support for the multilateral approach to trade liberalization." (Brander and Spencer, 1984, p. 204).

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[3]The private oligopoly aspect (in practice, duopoly) is new, not the absence of perfect competition. There have been many earlier contributions to the theory of trade policy that have allowed for private monopoly, whether domestic or foreign, and for internal economies of scale. See Bhagwati (1965) on the equivalence between tariffs and quotas and Corden (1974) which contains a whole chapter entitled "monopoly, market structure and economies of scale", and where economies of scale also enter the discussion of the infant industry argument for protection, as they do in earlier literature. Some other relevant papers that allow for private monopoly are referred to later.

II. Brander and Spencer Profit-Shifting Through an Export Subsidy

A key model which originates with Brander and Spencer (1985) will now be expounded. This model, and a discussion of the qualifications to it, is also expounded in Helpman and Krugman (1989, Chapter 5), and it is the central model in almost every survey of the subject. It leads to the conclusion that, under certain circumstances, a subsidy to a domestic firm competing in world markets would improve national welfare. The principal qualifications were uncovered in a paper by Eaton and Grossman (1986), a paper which is by now a minor classic. Here it will be shown - following a lead from Deardorff and Stern (1987) - that this theory or model can be reinterpreted in terms of the orthodox theory of trade policy, being thus one of the many special cases which orthodox theory illuminates. It turns out that the principal conclusion rests on somewhat implausible assumptions.

Two firms, Home-based and Foreign-based, compete in a third market with a product not sold in either of their own markets. Domestic consumption can be, and has been, introduced into the model, and it complicates the analysis but does not alter the main messages. The number of firms is fixed; ie there is no entry in response to high profits. The model is so set up that all that matters for the national welfares of the two countries are the profits of the two firms net of subsidies or taxes. Wages are constant, as are (at the first stage of analysis) pretax profits elsewhere in the two economies. The aim of national

policy is to shift profits towards the national firm away from the foreign firm, even though this may, incidentally, also shift inc *r* from the country's own taxpayers to the firms' owners. The market (ie the demand curve) for the combined output, is fixed, the consumers behaving competitively. The government of the third country does not intervene. The greater the output of one firm, the less the profits of the other.

A central assumption of the simplest version of the model is that the two firms "play Cournot". This crucial assumption has been varied, but we start with that case. It means that each firm determines its own output (equating perceived marginal revenue with marginal costs) <u>on the assumption that the output of the other firm is fixed</u>. Each firm faces a demand curve which is the total demand curve for the product in the third country market minus the fixed output of the other firm. If the output of the other firm falls its own output will rise (the marginal revenue curve shifts to the right), and its profits will increase. In Figure I marginal cost is assumed constant at OC (the simplest case), the initial demand curve is DD and the marginal revenue curve is MR_0, so that output of the home firm is initially X_{HO}. A decline in foreign output would shift the demand and marginal revenue curves to the right, bringing the output equilibrium to the right of A (where the new marginal revenue curve - not drawn here - crosses CC). Thus the home firm reacts to a change in the output of the foreign firm.
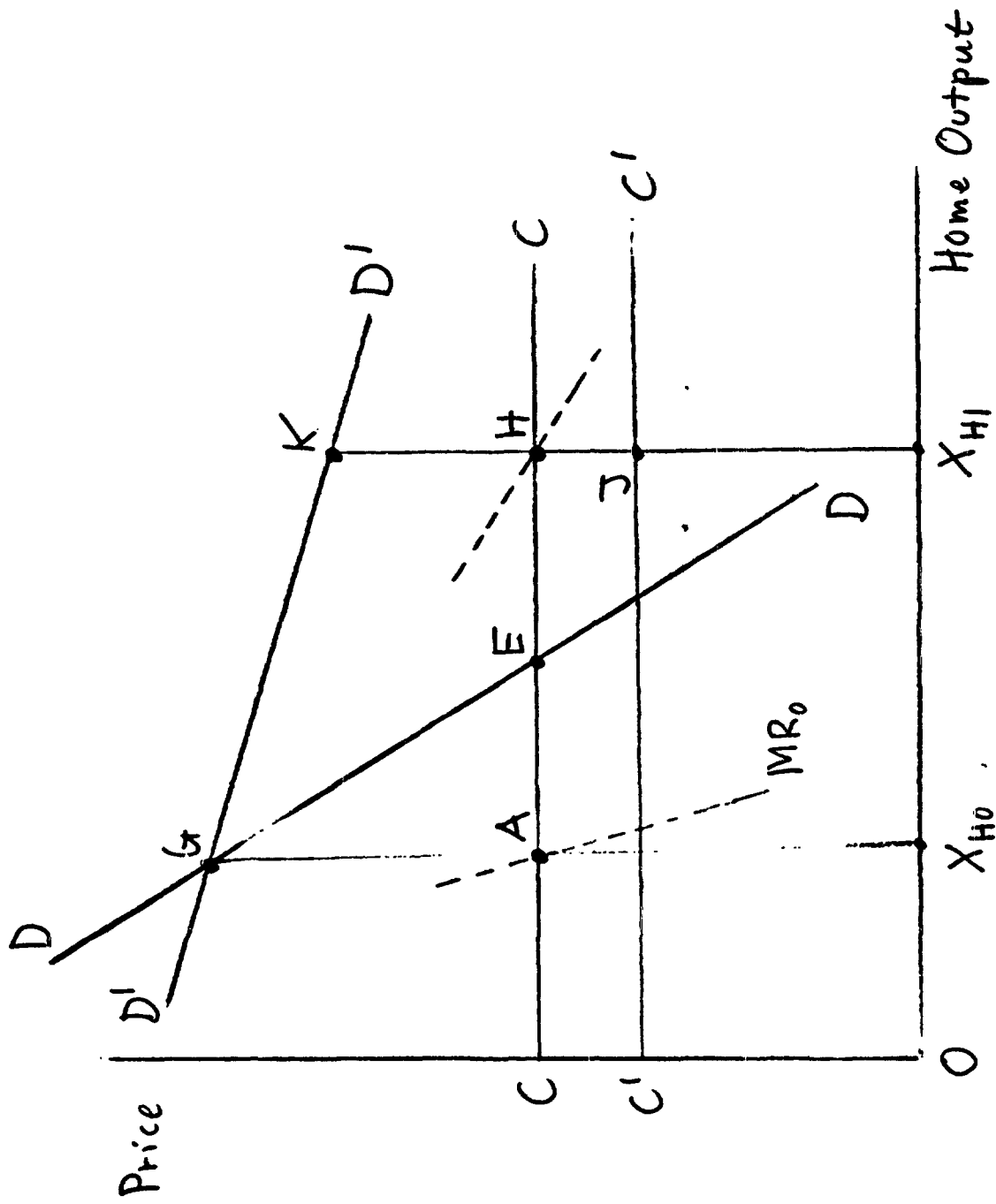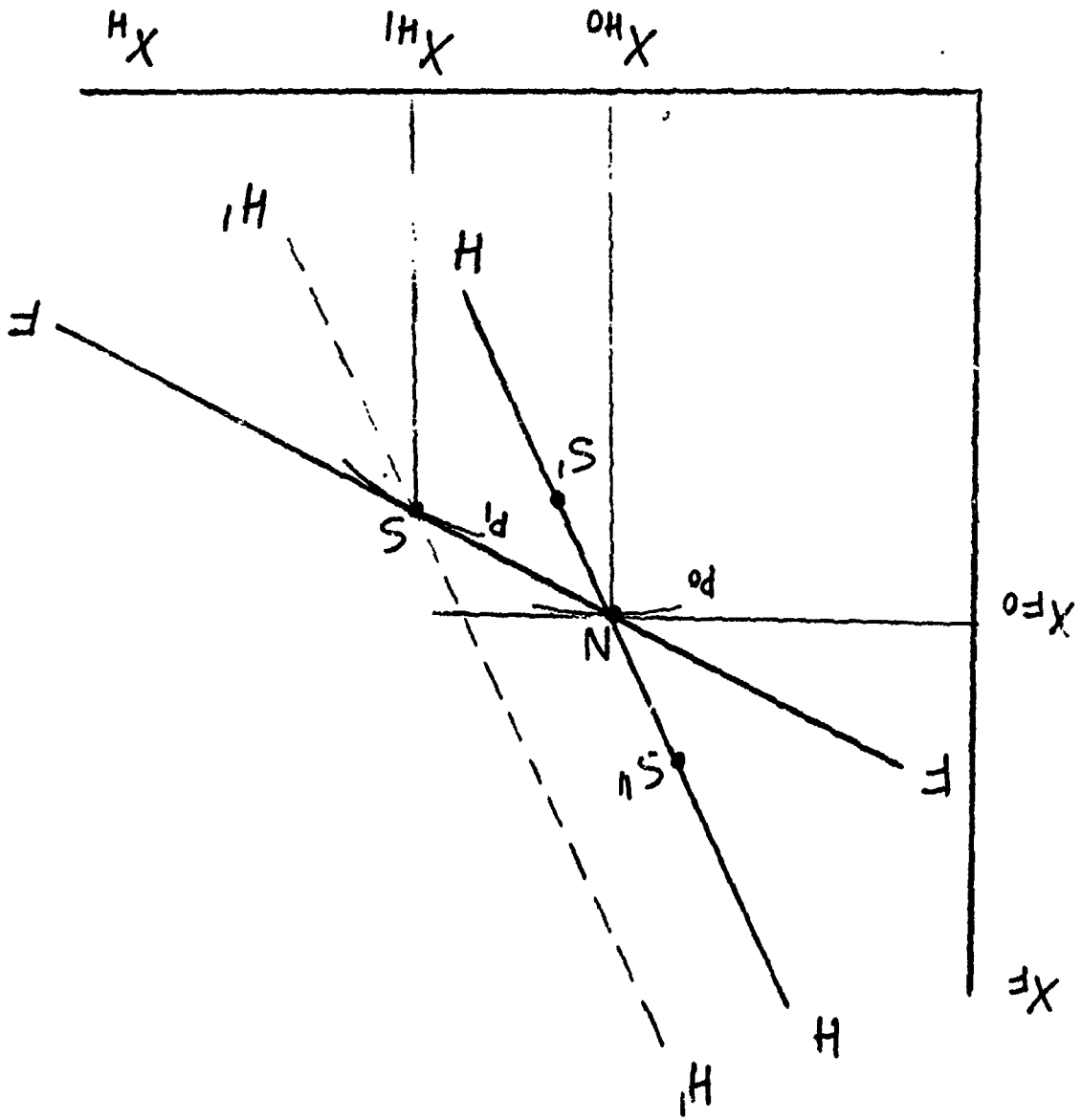
Figure 1

In this way the Cournot reaction curves of the two firms are derived in Figure II, where FF is the foreign reaction curve (showing how X_F varies as X_H changes), and HH is the home reaction curve (showing how X_H varies as X_F changes. The Nash equilibrium is thus at N. The curve p_0 represents the profit level attained by the home firm at that point. Given foreign output X_{FO} it maximizes profits at output X_{HO}.

Now suppose that the foreign reaction curve FF could indeed be taken as given but that the aim is to maximize the profits of the home firm. In that case the home firm should (in Figure II) choose output X_{H1}, which would bring the system to S - the Stackelberg equilibrium - where it reaches the highest profit level compatible with FF being given, this profit level being represented by curve p_1. Immediately one asks: why then does the firm not attain S? Why does the system reach N instead? The answer is that the home firm insists on "playing Cournot". In other words the home firm conjectures that foreign output will not change when home output changes - ie the conjectural variation is zero - when actually it will change.

The next, and crucial, step in the argument, is the suggestion that an export subsidy to the home firm will bring about the nationally optimal output . In Figure I the subsidy lowers the cost curve to C'C'. This would increase home output even if foreign output stayed constant, but foreign output will actually decline (the demand curve shifts to the right), so that finally the output equilibrium in Figure I will be at J, yielding

Figure II

X_H X_{H1} X_{H0}

H'

H

E

S

S'

P_1

P_0

N X_{F0}

E

S''

H

H'

X_F

output X_{H1}. In Figure II the subsidy causes all of the home country's equal profit curves to shift to the right, so that - given that the home firm continues to play Cournot - the home reaction curve moves to H'H' and equilibrium is attained at the home country's optimum of S.

One can immediately see the key assumption in this whole approach, and it is one which is familiar from the literature of game theory. Why is the home firm assumed to be so unwise as to "play Cournot", ie why is it assumed that the foreign firm's output will not change when home output changes? In other words, why should there be a zero conjectural variation? The home firm must know that its own output will change whenever foreign output changes, so why should it foolishly ignore the same kind of reaction on the part of the foreign firm? If the government understands the model sufficiently to provide an appropriate export subsidy, why does the firm not understand it? This seems to be a very basic criticism but, for the moment, let us stick with this story and consider its significance in terms of orthodox trade theory.

Let us consider the orthodox terms of trade argument for protection which can be interpreted as an argument for an export tax. This argument assumes a given foreign demand (or offer) curve - ie a foreign reaction curve taking general equilibrium effects into account - but also assumes that this demand curve does not shift strategically to deter an export tax at home. Thus it assumes absence of foreign retaliation. Let DD be this demand

curve in Figure I. The argument goes then very simply:
competitive producers will choose equilibrium E because each of
them perceives its marginal revenue to be equal to price. But the
socially optimum equilibrium, which exploits the home country's
monopoly power, is at A. Of course if exporting were monopolized
by a single firm it would naturally choose this point. But given
competition, a tax equal to AG has to be imposed, and the price
rises (the terms of trade improve) from E to G.

In the language of orthodox theory there is a trade
distortion or divergence because the private and social marginal
revenue curves facing the exporters diverge. This is a "trade
divergence" (Corden, 1974,p 31-2), to distinguish it from a
"domestic divergence" or distortion, which in this case would
involve a divergence between the private and social marginal cost
curves. Now what happens in the present model?

There is indeed also a "trade divergence". But this time it
causes exports to be too low rather than too high. This time
there is a single producer at home so that the issue on which
the orthodox terms of trade argument focuses disappears. This
time the foolish Cournot-playing home producer sees
("conjectures") an incorrect foreign demand curve, one which
fails to take into account the foreign output changes that its
own changes in output provoke.

The correct demand curve is D'D'(which is more elastic than
DD), and the marginal revenue curve derived from it would
determine equilibrium at H, the true optimal output thus being

X_{H1}. If the firm perceived this demand curve its conjectures would be "consistent". As Deardorff and Stern (1987, p 50) have pointed out: "there is in a sense a distortion here". There is an imperfection of private information, or in the private firm's understanding, and the government is assumed to know better.

It is worth stressing that the concept of a "trade divergence" means only that the privately perceived marginal revenue curve facing an exporting firm diverges from the correct social one, and not that intervention must be trade restricting and so improve the terms of trade. In this particular case the home country is made better off by a policy that increases exports and so (paradoxically) worsens its terms of trade (from G to K in Figure I). It is also worth noting that the idea that an argument for intervention can be based on a distortion that results from "imperfection of private information" is very familiar.

I make no claim for originality, but draw attention to a section in Corden (1974, pp 252-3) which refers to the infant industry argument and is entitled "imperfection of private information". It gives a detailed analysis of one basis for the popular infant industry argument and includes the following sentences which exactly apply to the present argument: "But the case is not really very strong. First-best policy is for the state to spread more information"...Why should the private firm (or state enterprise) concerned have less information for the prospects for its own cost curves than a central state

authority?" In the present case one would want to refer to "prospecus for demand" or" behavior of its foreign competitor" rather than cost curves.

In the orthodox terms of trade argument for a tariff or export tax optimal intervention has an adverse effect on the foreign country; hence it is "exploitative". This is also true in the present case with regard to the foreign competitor, though not with regard to the third - the consuming - country. The latter actually benefits when producing countries subsidize exports, a well known proposition.[4]

The next step in the analysis, worked out by Brander and Spencer, is to allow for the foreign government also to subsidize exports, taking as given not only the Cournot behavior of the two firms but also the export subsidy of the home government. In other words, first the two firms "play Cournot" with each other, and then the two governments do, influencing the behavior of the two firms. The governments are assumed to understand the two firms' behavior, but still, surprisingly, play this Cournot game with each other. Here it must be stressed that Brander and Spencer and the other principal contributors in this field, are aware of the difficulties and qualifications.

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[4] In the orthodox terms of trade argument a trade tax is Pareto-inefficient from a world (though not a national) point of view, assuming perfect competition and absence of domestic distortions that have not been offset by appropriate subsidies or taxes. In this case, given private oligopoly, free trade is not necessarily Pareto-efficient from a world point of view. It is just possible that a policy which benefits the home country and hurts its foreign competitor leads to a cosmopolitan Pareto improvement.

The general problems are much the same as in the theory of "optimum tariffs and retaliation" as pioneered by Scitovsky (1941) and developed by Johnson (1953), and indeed, more generally, as developed in the theory of oligopoly. Ideas from dynamic game theory need to be used. An excellent recent review is in Dixit (1987a).

Coming back to the simple case where the foreign government does not intervene, one point that was made by Eaton and Grossman (1986) and is given prominence in Krugman and Helpman (1989) is particularly important. If there is more than one domestic firm, a case for an export tax may be restored. The domestic firms compete with each other and generate external diseconomies for each other by lowering the price all of them obtain on the third country market. Hence there is a case for restraining them somewhat in their exporting. This is just the orthodox terms of trade argument for protection. The more domestic firms there are the closer the model gets to the perfectly competitive one and to the standard optimal tariff or export tax formula. As these authors point out, in a model with several home and foreign firms, all playing Cournot, there could then, on balance, be a case either for an export tax or an export subsidy. But this consideration does not, in itself, destroy the Brander-Spencer profit-shifting argument. Rather it shows that there are several considerations affecting a net trade divergence, and hence possibly justifying intervention, of which their profit-shifting argument is a new one.

Everything clearly hinges on the "conjectures" of the firms about each others' reactions. Cournot implies zero conjectures. "Consistent conjectures" - ie conjectures that turn out to be correct - by the home firm about the given foreign reaction curve would remove the case for intervention, other than the orthodox case for an export tax, with all its limitations. But there are many possibilities about the conjectures, apart from zero and consistent conjectures. Thus the demand curve that the home firm perceives may take into account expected reactions of the foreign competitor, but not enough, or perhaps too much. And if the government knows better, there is then, conceivably, a case for intervention, or at least for the education by the government of the domestic producer. But since the producer might just as well overestimate the foreign reaction as underestimate it, there can be a case for an export tax even on these grounds.

Eaton and Grossman (1986) uncovered the following point which at first appeared rather devastating. Suppose the firms "played Bertrand" rather than Cournot. This means that each assumes the other's price rather than quantity given. They then show that optimal intervention will be an export tax and not a subsidy, the intervention of each firm thus benefiting the other firm (intervention no longer being "exploitative") though it will, of course, hurt consumers. In terms of our exposition it means that the "true" demand curve in Figure I, D'D', would be steeper rather than flatter than the perceived demand curve DD. Since Bertrand competition seems as plausible (or implausible) as

Cournot competition this insight introduces a major uncertainty not just about the magnitude but about the sign of the intervention that may be called for.

III. A Subsidy for Credibility: An Infant Industry Argument

Let me now come to a different approach, which also originated with Brander and Spencer and which has a surface similarity with the model just expounded - indeed the two appear to be mixed up in some writings. It is actually a more convincing approach than the one just discussed, though it still has serious limitations. This time we assume that the two firms have as much knowledge as governments and while they may be uncertain about each others' reaction they "know the model".

As before, each firm would gain from a decline in the other firm's output. In the extreme case, owing to economies of scale, there may be room only for one firm. The extreme case - usually given as a Boeing-Airbus story - is a very special case and it seems better to stay within the existing model.[5] The position then is that each firm would like to credibly fix its own output firmly and thus force the other firm to adapt its output to this. For example, in Figure II, if the home firm fixed output X_{H1} credibly the foreign firm would choose point S on FF, and the home firm would then have maximized its profits given the

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[5] Of course there <u>are</u> at least two firms in the Boeing-Airbus case, but the suggestion seems to be that in the absence of government intervention there would eventually be only one firm. Such cases may exist, but are surely not common.

predictable foreign reaction. Alternatively, the foreign firm might fix its output credibly, forcing the home firm to adapt and so getting to the foreign firm's Stackelberg point on HH, namely S". This is a true dynamic game theory situation - a true problem of strategy - analyzed in the industrial organization literature.

The question then is: how can a firm achieve credibility in its output determination (making it clear that it will not change its output, whatever the other does) and so force the other to adapt to it? One answer is that it achieve a "first mover" situation, for example, through installing capacity in advance of the other. But there are always uncertainties in this game, and hence potential costs of competing in the effort to achieve this credibility. Finally both may lose, so that there is an incentive to collaborate in some form.

Where does trade policy come in? The basic idea is now that an export subsidy, or the promise of one, would give the home firm credibility in its output determination. I have not seen the next steps in the argument spelt out very carefully. Whatever the foreign output, the firm would have to be subsidized to cover its potential losses. The subsidy should be provided only on the condition that X_{H1} is produced and might be scaled to the output of the foreign firm (disregarding practical aspects of this!), so that if the foreign firm actually chooses S - ie if credibility is successfully established and the foreign reaction has been correctly estimated - no subsidy would actually be paid. The

enforcement by the government and the provision of the subsidy would have to be credible even if foreign output rose so that a large subsidy would have to be paid. The key point is that the subsidy would have to depend on the reaction of the foreign firm.

We have here a kind of infant industry argument that should be analyzed in those terms. One might ask why a firm has to be underwritten by the government. Why cannot it go on the capital market and borrow the necessary funds or obtain credit lines to underwrite possible losses? Presumably the more financial resources it has available the more credible its threat or output decisions will be. This is an obvious and familiar point. And the US capital market, for which this theory is designed, is hardly imperfect – even though imperfection of the capital market is a familiar basis for an infant industry argument applying to developing countries.

The answer might be that strengthening the firm's financial resources would not give the firm complete credibility. It might be able to obtain the resources to sustain its output even if the foreign firm failed to respond by reducing its output, but it may not have the incentive to keep its output at the desired level (at S) at all costs. This is indeed correct. The argument is that, for some reason, the government has more credibility. The government would hang on, even when a firm on its own would not. It would hang on even when it becomes probable that there would be a net loss for the country. The firm gets the incentive

because the subsidy would be conditional on sufficient output being maintained. In the extreme model – where only one of the two firms can survive – the subsidy would be conditional on the firm staying in business.

The suggestion that a government has so much credibility is surely implausible. The suggestion is that even when big subsidy payments are being made because the foreign firm has refused to give way, the government would continue to provide funds. In any case, the main conclusion is that this version of the argument – where the home and the foreign governments possibly compete in underwriting their firms's losses in the process of international competition – is a special version of the infant industry argument. It is an "infant exporting argument". [6]

The Case for a Tariff with Monopoly and Oligopoly

Brander and Spencer (1984) have also applied the profit shifting approach to the case of a tariff. Can a country gain

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[6] There are familiar and very important problems when an industry is subsidized directly or indirectly on infant industry grounds. One consideration is that income is redistributed from taxpayers to the owners and probably also the employees of the industries concerned. Interventions that can possibly be justified on Pareto-efficiency grounds have inevitable redistributive effects. These may well be undesirable. Another familiar qualification is that the need to raise taxes to pay for subsidies creates inevitable distortions. In all the cases discussed here where a subsidy is actually paid (or the risk is run that one would have to be paid) these problems or objections arise. It is hard to believe that an income redistribution from taxpayers in general towards domestic oligopolies competing in international markets can be regarded either as neutral or favorable. Do American taxpayers really want to subsidize the shareholders and managements of such companies?

from a tariff when there is oligopoly, a foreign firm and a home firm competing in the home market (with two products that are imperfect substitutes), and when the foreign government is passive? As usual, Cournot competition or something similar is assumed. This is clearly a highly relevant issue since it represents a direct development of the massive literature of orthodox theory concerned with the gains and losses from tariffs in the absence of retaliation. We know that there can be a gain from intervention of some kind when there is either (or both) a trade divergence - an intervention possibly leading to an improvement in the terms of trade - or a domestic distortion - such as an excess of price over marginal cost owing to monopoly. Is there more to it than that?

One might start with seeing what the implications are of having a simple monopoly either as foreign supplier or domestic producer. This means drawing on an earlier literature. The following simple model is due to Katrak (1977) and Svedberg (1979). In Figure III DD is the home demand curve for a product supplied by a foreign monopolist, and MR is the marginal revenue curve. The monopolist's marginal cost curve is CC, assumed to be constant here. In the absence of intervention the output equilibrium is at A and the price is at G. A tariff of CT is then imposed. It raises the marginal cost of the monopolist and in the new equilibrium the output equilibrium is at B, output having fallen, while the price has risen to H. The country's terms of trade improve on account of the tariff revenue per unit received
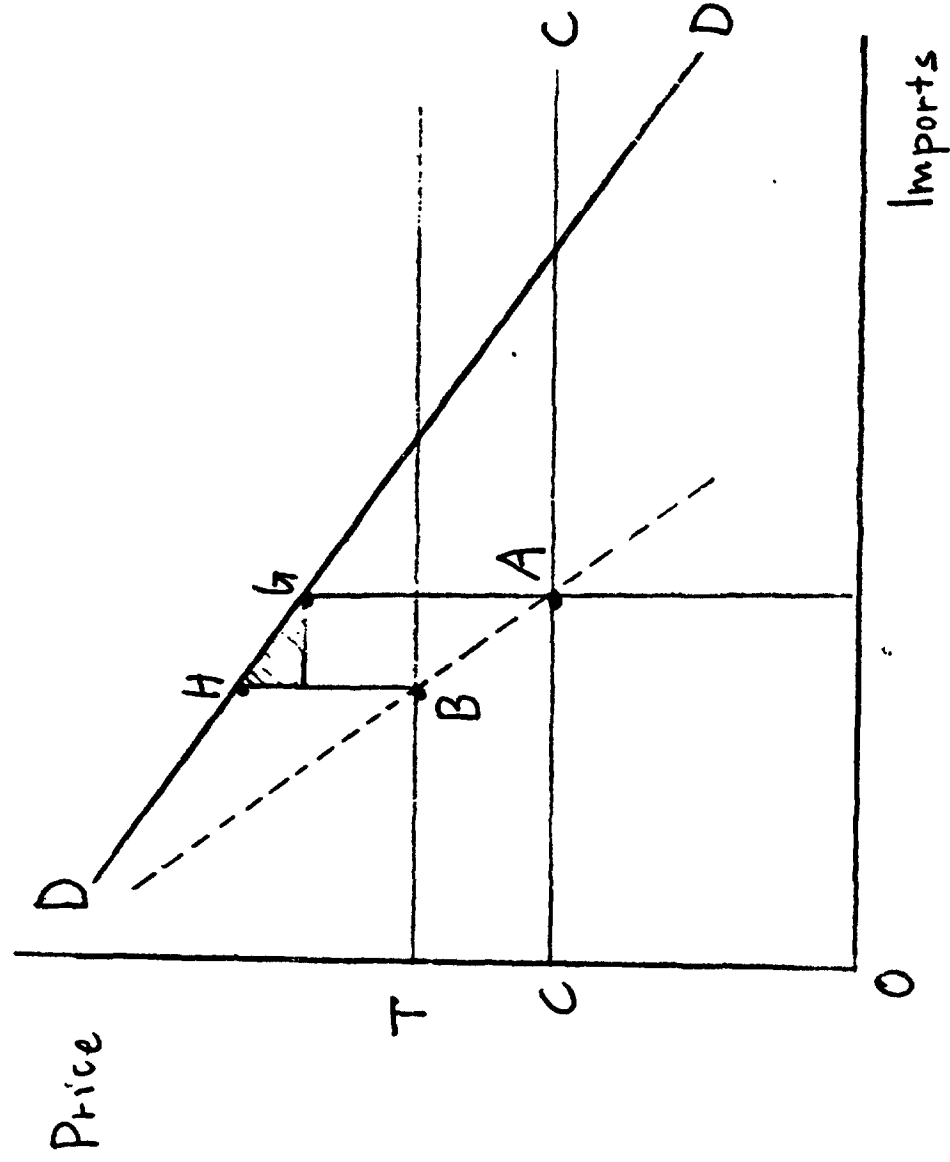
Figure III

by the government and decline on account of the rise in price paid by domestic buyers. With a linear demand curve, as drawn, and as assumed by Katrak and Svedberg, there is an improvement, the rise in price being less than the tariff per unit. Brander and Spencer (1984) show that the relative slopes of the demand and the marginal revenue curves are crucial, which can be seen from the diagram. The demand curve must be flatter than the marginal revenue curve if there is to be an improvement.

There must be the familiar consumption-cost-of-protection triangle, shaded in the diagram. The optimal tariff clearly must take this into account. But if the conditions for a terms of trade improvement are fulfilled there is bound to be a gain from a small tariff: ie, the optimal tariff is positive.

In any case, we have here a familiar terms of trade argument for a tariff which would turn into an argument for an import subsidy if the marginal revenue curve were relatively flatter.

Now consider the situation where there is a single domestic producer, actual or potential, subject to economies of scale. But there are no potential terms of trade effects, the import price being given (small country model). This is the model of Corden (1967) and Snape (1977). In this model there can be a gain from a subsidy to domestic production because price initially exceeds marginal cost at home, this reflecting the familiar domestic distortion of under-consumption of the product of a monopoly. While the subsidy leads to replacement of imports by dearer home

output - which is the standard loss from protection - it also leads to increased consumption at home.

In Corden (1967) a tariff could not have a favorable effect because the domestic and the foreign product were assumed to be perfect substitutes, so that a tariff would actually reduce domestic consumption. Rather, there would be a gain from an import subsidy because it would act like a price control on the domestic producer, hence increasing domestic output. But in Snape (1977) the two products are differentiated, so that a tariff would lead to less consumption of the imported product (which yields a familiar cost of protection) and to more consumption and hence production of the home-produced one. The latter effect taken on its own yields a gain, given that (because there was monopoly) initially price must have exceeded marginal cost. Helpman and Krugman (1989) call this the "production efficiency gain" of a tariff, and it refers to the reduction or elimination of one of the standard domestic distortions, namely that caused by having a domestic monopoly which tends to underproduce relative to the social optimum. But a tariff is clearly not first-best in this case and it may not yield a net gain because there is also the familiar cost of protection, just mentioned. This is a conclusion that applies in many cases of domestic distortions.

The earlier literature has thus provided two ingredients in an analysis of the effects of a tariff in the presence of oligopoly with product differentiation: first, that a tariff may

squeeze the profits of the foreign firm and so improve the terms of trade; and second, that it may lead to higher consumption of the domestic product, hence offsetting the domestic distortion of under-consumption caused by price exceeding marginal cost.

The profit shifting effect of Brander and Spencer (1984) rests essentially on the same kind of analysis as that expounded earlier with regard to the case for an export subsidy. They show that when a tariff causes domestic production to replace imports profits will shift towards the domestic firm away from the foreign firm and there will be a gain on that account. The interesting question is whether this effect is additional to the two effects just noted, or whether it is really an element in the terms of trade effect. On the basis of the analysis in Helpman and Krugman (1989, Chapter 6) it seems that it must be reflected in the terms of trade gain, but, as they point out, it strengthens the possibility that there is such a gain. The point is that the price the foreign producer charges home consumers is likely to rise less when domestic production is increased as a result of the tariff (the true demand curve is more elastic in Figure III) than when such import substitution does not take place.

IV. Tariffs for Export Promotion

At this point one should note a widely cited paper by Krugman (1984) which also seems to make a case for a tariff in an oligopoly model but which introduces the additional consideration

that a tariff may lead not just to replacement of imports by domestic production but that it may also foster exports.

Two firms compete in various markets, including the home market. Their method of competition is Cournot. They are subject to economies of scale. The home government then protects its own firm in the home market. This might be regarded as a kind of subsidization. Naturally this shifts profits away from the foreign firm, just as it does in the Brander-Spencer model. The home firm's marginal costs fall, and the foreign firm reduces output, its marginal costs rising. This will cause the home firm to increase exports. Krugman thus shows that import protection acts as an export promotion device.

The question is whether this conclusion really depends on the Cournot-oligopoly assumption. Krugman writes. "The idea that a protected domestic market gives firms a base for successful exporting is one of those heterodox arguments, common in discussions of international trade, which are incomprehensible in terms of standard models yet seem persuasive to practical men." (Krugman, 1984,p 191). In fact, the idea that a tariff can promote exports is familiar from the theory of dumping, which goes back to the nineteen twenties. With regard to precise policy implications one might recall Pursell and Snape (1973), who dealt with the same issue and also assumed economies of scale. Pursell and Snape assumed that there is a single domestic firm facing given world import and export prices - ie they used the small country model. They found that a tariff may make

discriminating monopoly possible, allowing prices at home to be raised and getting exports started for the first time.

Hence it is not necessary to assume oligopoly to get this result. Pursell and Snape (1973) showed that a tariff will never be optimal in their case but "there may be a case for a subsidy to enable the firm to set up (and export).." (p.90). By contrast, it appears from Helpman and Krugman (1989) that in the Cournot oligopoly case a tariff could be optimal from the point of view of the home country assuming the foreign government does not react. Actually, Pursell and Snape seem to be on stronger ground in terms of assumptions than Krugman (1984). In the small country model one need not allow for either a foreign firm's or a foreign government's reaction, whether Cournot or strategic. The model is actually not far from reality. In the Krugman model we have not only the familiar myopic Cournot behavior of the two firms but also the passivity of the foreign government.[7]

V. Is there a New International Economics?

There has been a proliferation of models with oligopoly and profit shifting, building on the pioneering work of Brander and Spencer, and contributors in this field are now beginning to go beyond static models of the Cournot type. As the discussion above has shown, some of the static models appear to hinge on quite

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[7] The latter assumption could perhaps be justified if the aim is to explain Japanese government intervention in the face of a passive US government.

unrealistic assumptions. It is not possible to expound all the models here. A fundamental problem is that each model seems to be a special case leading to particular results depending on the size of various parameters and so on. There has hardly been a search for general principles, and certainly no new paradigm has emerged so far. There is a new and highly sophisticated literature here, and also a new idea - namely the role of trade policy in "profit shifting" as between oligopolistic firms - but since there is not a new paradigm there is certainly no "new international economics".

Recent developments and many models are surveyed by Dixit (1987a). The work is ongoing. As Dixit says, "It is premature to draw confident or firm policy implications from such an unfinished and ongoing body of research." He also guesses that "research on static models of oligopolistic trade and trade policy has more or less run its course. But dynamics remains a rich area for research." (p 354). A beginning has been made with empirical work - some of which is surveyed in Helpman and Krugman (1989, Chapter 8), which also discusses the problems of quantification. But Dixit (1987a, p 359) concludes that "empirical work has lagged behind, and it needs to be improved greatly in both quality and quantity if we are to have a better idea of the scope and significance of these theoretical advances." Actually, he has reported an interesting piece of empirical work of his own in Dixit (1987b), where he applies the theory to the rivalry between US and Japanese firms in the

automobile market, allowing for both the use of a tariff and of a production subsidy.

The suggestion has been made in Krugman (1987) that, in some sense, the new developments replace existing trade theory or, at least, require a radical change in conclusions. These opinions are hedged but the implication has been that existing theory (pre- "new theory") rests on the perfect competition assumption and has led to the conclusion that, subject to minor qualifications, free trade is best. By contrast, he has suggested that the new approach alters the structure of the theory so fundamentally that the theoretical presumption for free trade disappears. It is suggested that the principal reason why free trade is still not "passe" is on political economy grounds. So it is well to remind ourselves of the characteristics of the established theory of trade policy as it has developed over a long period, possibly with Meade (1955) as the starting point.

It does not argue that "free trade is best". If I may again quote myself in this paper, "Theory does not 'say' - as is often asserted by the ill-informed or the badly taught - that 'free trade is best'. It says that, given certain assumptions, it is 'best'. Appreciation of the assumptions under which free trade or alternatively any particular system of protection or subsidization is best, or second-best, third-best, and so on, is perhaps the main thing that should come out of this book." This comes from the introduction to Corden (1974), a book that then goes on to analyze numerous arguments for trade intervention and

for direct subsidization of some kind, and to show under what
circumstances various interventions may be first-best, second
best and so on. At the end (pp 412-14) I listed ten circumstances
in which trade interventions might (possibly, not certainly) be
first best. In the light of the new developments a new edition of
this book might list an eleventh reason.

My conclusion is that the new developments represent
elaborations that fit into the existing framework, and will do so
more once results from the new developments become clearer. It
will be possible to show that there are first-best, second-best
etc. ways of dealing with oligopoly-induced distortions, and that
in some cases trade policies or direct subsidies or taxes could
conceivably be first-best assuming no possible retaliation by
foreign governments, and disregarding political economy and
information considerations. If retaliation is possible - ie if
governments might engage in strategic interactions - the new
developments will represent elaborations of the existing body of
"tariffs and retaliation" theory.

Of course political economy and the information problem
cannot be disregarded and have actually persuaded major
contributors to the new literature, notably Grossman (1986), of
the undesirability of basing interventionist policies on these
new theories. The information problem of engaging in optimal
intervention to offset the distorting effects of oligopoly

appear to be overwhelming.[8] But political economy and information considerations also yield arguments against using the existing "domestic distortion" theories to justify fine-tuning intervention policies, whether tariffs or subsidies.

Indeed the most important development in the theory of trade policy is concerned with the political economy of trade policy. It is no longer readily assumed that a regime in which intervention through trade policies or through more direct subsidies is customary or made easy, will <u>actually</u> lead to policies that are nationally optimal. Governments cannot be relied upon to have adequate information (or flexibility in their policy management) to get detailed sectoral interventions right nor can they be relied upon to pursue the national interest in such cases, often responding rather to pressures from various interest groups. In a way it is surprising that so much of the sophisticated new work reviewed here should be devoted to uncovering complex circumstances when intervention of some kind may be justified <u>ignoring information and political economy problems</u>. After all, existing theory has already uncovered a mass of such circumstances, and is legitimately subject to the criticism of underplaying, if not ignoring, the information and political economy problems. For this reason the "new" theories,

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[8] In addition, as noted at the beginning of this paper, the originators of this body of theory, Brander and Spencer, did not really advocate protection on the basis of their analysis. They were aware of the possibility of retaliation and hence the adverse effects finally on all countries that a strategic trade policy regime would entail.

while making some contribution, could be criticized as being really rather old-fashioned.

VI. How Relevant are the New Theories for Developing Countries?

Finally, one might ask how relevant the new theories are for developing countries.[9]

If one means by the standard theory the simple textbook theory which assumes perfect competition at all times and absence of economies of scale, then standard theory is surely not sufficient for developing - or for developed - countries. In particular, the ideas formalized originally in Katrak (1977) and Svedberg (1979) - namely that a small economy may face a monopoly supplier for a product, or a cartel, and that a tariff, tax, or some other measure, may be appropriate in certain circumstances - are relevant for developing countries. But this is not new.

At least as important is the situation where there would be a domestic monopoly or oligopoly in the absence of foreign competition. This is obviously a more important consideration for

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[9]This question is addressed in Srinivasan (1989) and Krugman (1989). Krugman makes only modest claims for the new theories, though he works out one (possibly far fetched) case where small primary product exporting countries might engage in strategic trade policy a la Brander-Spencer. He concludes with the political economy qualification: "New trade theory offers some subtle arguments for sophisticated government policy, but it could all too easily be used as a cloak for crude protectionism". While he confines himself in that paper to developing countries this could also be said to those who may think that the theories should be applied by the governments of developed countries. He also concludes that, because of the effect of protection in increasing domestic market power in a small economy, "Import substituting industrialization looks even worse in the new theory than in standard theory".

small than for large economies and hence is more significant for all developing economies, even the largest among them, than for the major developed economies. It is one of the oldest ideas in economics that free or freer trade increases competition in the domestic market and provides more incentives for effort and efficiency. It is also an old idea that the gains from trade are greater for small than for large economies. This line of thought, which hinges on economies of scale, is supplemented by the well-known proposition that import quotas are inferior to tariffs because they increase the degree of monopoly and may, indeed, create a monopoly situation for the first time, in effect turning traded goods producers into nontraded goods producers. This provides a strong argument for replacing quotas with tariffs. It follows that the case for trade liberalization, particularly when it eliminates quotas, is strengthened when potential or actual domestic monopoly or oligopoly is taken into account.[10]

By contrast, Brander-Spencer profit-shifting and all the complications which have to do specifically with governments influencing the strategic behavior of private oligopolies competing in world markets, seem to have very little relevance

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[10] As noted in Corden (1967) a theoretical case could be made for going even further than just liberalizing trade: imports might actually be subsidized, so that the domestic monopoly producer would be forced to cut prices. It was shown there that the subsidy may only need to be a threat, and may never have to be paid out. But this particular form of interventionism is not advocated here. Free trade, and the assurance of its continuance, is enough.

for developing countries even if one granted - which one might hesitate to do - that they have policy relevance for developed countries. One would be hard put to find the kinds of examples among developing country exporting firms that are similar to the U.S.-Japan or U.S.-Western Europe cases which the theorists of strategic trade policy have in mind. The conclusion is that the possibility of monopoly, whether foreign or domestic, should certainly be allowed for in formulating trade (as well as tax) policies of developing countries, and theories must of course take into account economies of scale. But sophisticated theories concerned with strategic interactions among private firms in world markets and the possible case for participation of governments in such games, are far less relevant for developing countries.

References

Bhagwati, J. (1965), "On the equivalence of tariffs and quotas", in R. Caves, H. Johnson, and P. Kenen (eds.), Trade, Growth, and the Balance of Payments, Amsterdam, North-Holland.

Bhagwati, J. (1989), "Is free trade passe after all?", Weltwirtschaftliches Archiv, band 125, heft 1, pp. 17-44.

Brander, J. and Spencer, B. (1981), "Tariffs and the extraction of foreign monopoly rents under potential entry", Canadian Journal of Economics, vol. 14, pp. 371-89.

Brander, J. and Spencer, B. (1983), "International r&d rivalry and industrial strategy", Review of Economics Studies, vol. 50, October, pp. 707-22.

Brander, J. and Spencer, B. (1984), "Tariff protection and imperfect competition", in H. Kierzkowski (ed.), Monopolistic Competition and International Trade, Oxford, Oxford University Press.

Brander, J. and Spencer, B. (1985), "Export subsidies and international market share rivalry", Journal of International Economics, vol. 18, pp. 83-100.

Caves, R. E. (1987), "Industrial policy and trade policy: the connections", in H. Kierzkowski (ed.), Protection & Competition in International Trade, Oxford, Basil Blackwell.

Corden, W. M. (1967), "Monopoly, tariffs and subsidies", Economica, vol. 34, February, pp. 50-8.

Corden, W. M. (1974), Trade Policy and Economic Welfare, Oxford, Oxford University Press.

Deardorff, A. and Stern, R. (1987), "Current issues in trade policy: an overview", in R. Stern (ed.), U.S. Trade Policies in a Changing World Economy, Cambridge, The MIT Press.

Dixit, A. (1984), "International trade policy for oligopolistic industries", Supplement to the Economic Journal-Conference Papers, vol. 94, pp. 1-16.

Dixit, A. (1987a), "Strategic aspects of trade policy", in T. Bewley (ed.), Advances in Economic Theory - Fifth World Congress, Cambridge, Cambridge University Press.

Dixit, A. (1987b), "Tariffs and subsidies under oligopoly: the case of the U.S. automobile industry", in H. Kierzkowski (ed.), Protection & Competition in International Trade, Oxford, Basil Blackwell.

Eaton, J. and Grossman, G. M. (1986), "Optimal trade and industrial policy under oligopoly", Quarterly Journal of Economics, May, pp. 383-406.

Greenaway, D. and Milner, C. (1986), The Economics of Intra-industry Trade, Oxford, Basil Blackwell.

Grossman, G. M. (1986), "Strategic export promotion: a critique", in P. Krugman (ed.), Strategic Trade Policy and the New International Economics, Cambridge, The MIT Press.

Grossman, G. M. and Richardson, J. D. (1985), "Strategic trade policy: a survey of issues and early analysis", Special Papers in International Economics, No. 15, April.

Helpman, E. and Krugman, P. (1985), Market Structure and Foreign Trade, Cambridge, The MIT Press.

Helpman E. and Krugman, P. (1989), Trade Policy and Market Structure, Cambridge, The MIT Press.

Johnson, H. G. (1953/54), "Optimum tariffs and retaliation", Review of Economic Studies, vol. 21, pp. 142-53.

Katrak, H. (1977), "Multi-national monopolies and commercial policy", Oxford Economic Papers, vol. 29, no. 2, July, 283-91.

Krugman, P. (1984), "Import protection as export promotion: international competition in the presence of oligopoly and economics of scale", in H. Kierzkowski (ed.), Monopolistic Competition and International Trade, Oxford, Oxford University Press.

Krugman, P. (ed.) (1986), Strategic Trade Policy and the New International Economics, Cambridge, The MIT Press.

Krugman, P. (1987), "Is free trade passe?", Economic Perspectives, vol. 1, no. 2, pp. 131-44.

Krugman, P. (1989), "New Trade Theory and the Less Developed Countries", in G. Calvo et al (eds), Debt, Stabilization and Development, Oxford, Blackwell.

Meade, J.E. (1955), The Theory of International Economic Policy, vol. 2, Trade and Welfare, London, Oxford University Press.

Ohlin, Bertil (1933), Interregional and International Trade, Cambridge, Harvard University Press.

Pursell, G. and Snape, R. H. (1973), "Economies of scale, price discrimination and exporting", Journal of International Economics, vol. 3, pp.85-92.

Richardson, J. D. (1989), "Empirical research on trade liberalization with imperfect competition: a survey", OECD Economic Studies, no. 12, spring, pp. 7-50.

Scitovsky, T. (1941), "A reconsideration of the theory of tariffs", Review of Economics Studies, vol. IX(2), no. 42, pp. 89-110.

Smith, Adam (1776), An Enquiry into the Nature and Causes of the Wealth of Nations.

Snape, R. H. (1977), "Trade policy in the presence of economies of scale and product variety", The Economic Record, vol. 53, pp. 525-34.

Srinivasan, T. N. (1989), "Recent Theories of Imperfect Competition and International Trade: Any Implications for Development Strategy?", Indian Economic Review, vol 24, pp 1-23.

Stegemann, K. (1989), "Policy rivalry among industrial states: what can we learn from models of strategic trade policy?", International Organization, vol. 43, no. 1, pp. 73-100.

Svedberg, P. (1979), "Optimal tariff policy on imports from multinationals", The Economic Record, vol. 55, no. 148, pp. 64-67.

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