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The New Trade Theory and Its Relevance for Developing Countries

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The new trade theory provides new rationale for government intervention in trade. But a host of economic and political economy criticisms and certain identifying features of developing countries severely undermine its relevance for developing countries.

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Summary findings

Recent developments in trade theory — the result of applying models that embody imperfect competition and increasing returns to scale — suggest an activist role for government in trade policy and threaten to undermine the case for trade liberalization.

But the new modelling of international trade lacks theoretical robustness. It is particularly sensitive to assumptions about competitive behavior and the number of firms. Economists' criticism also focuses on the size of the excess profits that oligopolistic firms are alleged to earn, the partial equilibrium nature of the analysis, and the identification of the market failure and the choice of instrument.

The normative prescriptions that arise from the new trade theory are also criticized in terms of political economy issues: the potential for foreign retaliation, inefficient government intervention, special interests' capture of policy, the problem of moral hazard, and possibly inimical redistributive effects.

The limits of the new trade theory are particularly acute for developing countries because of their small economies, their limited ability to shift profits, the nature of their trade, and the greater chance for special interests to capture trade policy. Paradoxically, empirical work has shown that the gains from trade are much bigger under imperfectly competitive markets which actually strengthens the case for trade liberalization.

This paper — a product of the Africa Regional Office, Office of the Chief Economist — is part of a larger effort in the region to understand the application of recent trade-theoretic developments to developing countries. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Asad Alam, room D8-056, extension 87380 (28 pages). March 1994.

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**THE NEW TRADE THEORY AND ITS RELEVANCE TO THE TRADE
POLICIES OF DEVELOPING COUNTRIES**

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A. INTRODUCTION

While developing countries are reforming their trade regimes in order to achieve neutrality, some developed countries, particularly the United States, are facing demands for departing from neutral trade policies as a means to improving national welfare. Such demands are derived, in good measure, from recent developments in trade theory, arising from the application of models embodying imperfect competition and increasing returns to scale, which suggest an activist role for government in trade policy.

This leads to the concern that developing countries may actually revert to their earlier dirigiste policies if (a) they perceive that trade intervention by the developed countries is of a beggar-thy-neighbor variety which will shift national welfare from the developing to the developed countries, or, (b) the developing countries actually find in these theoretical developments a new rationale for their own intervention. Krugman has popularized the nomenclature of a 'new trade theory' for these trade-theoretic developments on the grounds that these "new models open the possibility that government intervention in trade... may under some circumstances be in the national interest after all".¹

In the standard neoclassical trade theory, based on *competitive models*, *trade policy activism* is advocated only as a means to correcting for *trade distortions* - that is, those distortions which relate directly to, or arise from, international trade.² These trade distortions can be either endogenous or

1/ Krugman 1987, pp.131-32. But Bhagwati (1989) has argued that such an assertion ignores the significant developments in the theory of commercial policy during the 1960s and the 1970s which addressed numerous market failures and noneconomic objectives and developed rational economic criteria for government intervention, including trade intervention, and, therefore, is not unique in providing a rationale for trade intervention, as the prefix 'new' suggests.

2/ Bhagwati (1971) characterizes distortions as any divergence from the equality of the domestic rate of substitution in consumption with the domestic rate of transformation in production and the foreign rate of transformation through foreign trade, or as the failure of the economy to achieve aggregate production efficiency in the sense of the non-operation of the economy on the efficient, full employment production possibility frontier.

policy-imposed.³ Endogenous trade distortions are systemic to the economy and arise from market failures in trading activity. For instance, some exports may not take place due to externalities in exporting which may not be fully appropriable to the exporter. Such externalities, normally of a positive nature (and therefore requiring export *promotion*), may arise from the opening of foreign markets, the establishment of national and product quality reputation, the learning of ways of operating in foreign markets, and the gaining of access to goods and services in foreign countries. Exports may also fail to exist because of imperfect capital markets. This may be because export activities are inherently risky since the ultimate payment liability lies with a foreign entity and since there are risks associated with currency fluctuations and with operating in foreign markets. Other forms of endogenous distortions arise when, for instance, price-taking consumers and producers do not perceive a country's market power in its foreign trade, or when increasing returns to scale in production lead to a non-convexity of the production possibility frontier.

Policy-imposed trade distortions arise when trade interventions themselves lead to a movement away from Pareto optimality. Such distortions are quite common in international trade as, for instance, the distortions arising from import protection, foreign exchange restrictions, and export taxes, all of which create a bias against exports (and in favor of imports). When policymakers are either unwilling or unable to correct these distortions, then only is government intervention warranted to offset the bias and to bring about a neutrality of incentives between exports and import-substitutes characterized by a parity between the effective exchange rates for exports and imports. This would then allow trade to take place on the basis of comparative advantage and improve economic welfare.

But the new trade theory provides instances where even in the absence of such distortions, trade

3/ The characterization of distortions as endogenous or policy-imposed originates in Bhagwati (1971).

intervention is welfare-improving. In view of the importance of this policy implication, this paper critically reviews the arguments of the new trade theory, and evaluates their relevance for the developing countries' trade policies in the light of both the theoretical and the empirical evidence.

B. THE NEW TRADE THEORY

The new trade theory has forwarded two arguments for trade intervention - the *profit-shifting* argument (or the strategic trade argument) and the *externalities* argument.⁴ The profit-shifting argument builds on the notion that international competition in many markets is oligopolistic in nature. Since a key characteristic of oligopolistic competition is that the price charged for a good exceeds the marginal cost of production, countries importing such a good pay rents to the exporting firm. This provides a role for government intervention since by altering the set of credible actions, the government can shift production and the associated rents to domestic firms and thereby increase national welfare. Examples of such markets cited in the literature are the markets for high-technology goods like semiconductors, aircraft, and biotechnology products.

The externalities argument says that certain industries or firms that generate positive externalities, which are not fully appropriable, will not grow to their social optimum and, therefore, need government promotion. While this has long been advanced as an argument for government intervention and protection, Krugman (1987) argues that the new trade theory "has given at least the appearance of greater concreteness to the theoretical case for government intervention to promote external benefits...In traditional international trade models with their reliance on perfect competition...externalities resulting from incomplete appropriability could not be explicitly recognized, because the knowledge investment

4/ Krugman (1987)

by firms that is the source of the spillover could not be fitted in....[Therefore] external economies seemed abstract....Once increasing returns and imperfect competition are seen as the norm, this problem of abstractness is reduced. The dynamic scale economies associated with investment in knowledge are just another reason for the imperfection of competition that has already been accepted as the norm. External economies can now be identified with incomplete appropriability of the results of R&D, which immediately suggests that they are most likely to be found in industries where R&D is an especially large part of firms' costs". The argument is that such industries are typically the knowledge-intensive, high-technology industries which should, therefore, be targeted for support.⁵ But the empirical evidence on this is very sparse and, as Bhagwati (1993) has argued, "these discrepancies [between social and private returns from R&D] are so different across industries, and so difficult to predict, that selecting any one industry, or any one bunch of industries, for prior support is nothing more than an act of faith. The empirical basis for such a selection is shaky indeed".

There is also a counter argument to the inappropriability of R&D in the protection of R&D results through *rules-based* trade by means of patent protection and support of intellectual property rights through international negotiations, as in the Uruguay Round. Moreover, the use of trade instruments, such as export subsidies, to appropriate externalities is not a first-best solution as externalities are a *domestic* distortion requiring the use of domestic instruments. The economic literature on distortions is very clear in recommending that the optimal policy intervention in such instances is an R&D or production subsidy. An export subsidy would have been justified only when the externalities arise from the exporting activity itself and not from production per se. In such a case, the externality would have been trade-related requiring a trade instrument. The incorporation of the externalities argument in the literature on the new

5/ See, for instance, Tyson (1992).

trade theory reflects the widespread conceptual confusion between industrial and trade policy.⁶ In what follows, we shall, therefore, only focus on the profit-shifting argument which really is the only trade-policy relevant argument.

I. The Profit-Shifting Argument

There are three variants of the profit-shifting argument. In its simplest form, the argument rationalizes the use of a tariff to extract the rents that a foreign oligopolistic firm might be enjoying under potential entry.⁷ In the absence of any potential entry, a tariff would only widen the wedge between domestic and foreign prices and be a welfare-worsening proposition. But the threat of potential entry of domestic firms constrains the pricing response of foreign firms and induces them to pursue a strategy of deterring such entry by absorbing the tariff to some extent. As long as the tariff is absorbed, even if only partly, the rise in prices will be less than the tariff so that the loss in consumer surplus can be more than compensated by the collection in tariff revenues. In the special case when the foreign firm absorbs the tariff wholly, the rent will have been extracted without any additional distortion. The policy result here is identical to the exploitation of monopsony power by an importer through an import tax (the optimal tariff argument) which is well analyzed and documented in the literature on commercial policy. However, there is a significant qualitative difference - the rent extraction argument does not require a country to be 'large' in the conventional sense of being able to affect its terms of trade, as in the optimal

6/ Industrial policy refers to the use of *domestic policy instruments* like production, consumptions, sales, factor, and corporate taxes and subsidies and quantitative restraints on production to alter the composition of domestic industrial output. Trade policy, however, refers to the use of *trade (or foreign) policy instruments* like import and export tariffs, subsidies, and quotas, voluntary export restraints, voluntary import expansions, and other instruments to alter the composition and volume of trade. The confusion arises because industrial policy by altering the composition of domestic output can also consequently alter the composition of trade. Similarly, trade policy in altering the composition of trade may also alter the composition of domestic output. The litmus test for distinction between the two, therefore, has to be the instruments that are used and *not* where the indirect effects may fall.

7/ Brander and Spencer (1981)

tariff argument; even a small country can use an import tariff to improve its national welfare when there are foreign oligopolistic suppliers in the domestic market, an outcome not possible in the optimal tariff case.

The second variant of the profit-shifting argument is to provide a subsidy to the domestic firm engaged in a Cournot duopoly game with a foreign competitor in a third market.⁸ The assumption of a third market enables the discussion of national gain to be conducted in terms of producer surplus alone. It is in the nature of a Cournot game that the equilibrium output level, given by the intersection of the two firms' reaction curves, is nationally suboptimal although jointly optimal. A subsidy, therefore, enhances national welfare by lowering the marginal cost to the domestic firm, thereby committing it to a higher reaction curve. This enables the firm to capture a larger foreign market-share, increase domestic profits, and reduce foreign profits. National welfare, net of the subsidy, increases as the profit is higher, the subsidy itself being just a transfer payment. Crucial to this argument is the notion that the subsidy credibly commits the domestic firm to an aggressive market strategy and thereby forces its foreign rival to adapt accordingly.

This analysis can be readily understood in the context of the neoclassical trade theory. As Deardorff and Stern (1987) have pointed out, "there is in a sense a distortion here, each firm perceiving that the benefit from expanding exports will be less than it in fact will be" resulting in a divergence between the private and social marginal revenue curves. In this particular instance, the private marginal revenue curve lies below the social marginal revenue curve and hence, the volume of exports, given by the intersection of the private marginal revenue curve and the private marginal cost curve, is suboptimal. Hence, the need for export expansion. Such a divergence arises from the highly unrealistic Cournot

8/ Brander and Spencer (1985)

assumption on account of which each firm expects the other firm's output to be independent of its own even though the model suggests that there is a negative relationship between the two. The lack of perfect information regarding the foreign producer's response is the actual distortion here which warrants government intervention. But a subsidy, while it leads to a superior outcome, is not a first-best solution. The theory of distortions, as propounded by Bhagwati-Ramaswami-Srinivasan (1969) and Bhagwati (1971), would suggest that the first-best policy here would be to provide more market information to the domestic producer presuming, of course, even if somewhat ambitiously, that governments have more information than private producers regarding private markets.

The third variant of the profit-shifting argument is a novel extension of the infant industry argument. The argument is that a protected home market provides a firm characterized by economies of scale, internal to the firm, an advantage in scale over foreign producers, and enables it to raise market shares in domestic and foreign unprotected markets.⁹ This shifts profits from foreign to domestic firms and thereby increases domestic welfare at the expense of foreign welfare.

In the neoclassical paradigm, economies of scale originating in the firm are not admissible for protection, *per se*, as such economies eventually lead to profits upon the maturity of the firm which can be used to pay off loans incurred for investments during the growth period. But in Krugman's example, the economies of scale cannot be internalized by the firm as the firm is constrained by the size of its market share. The economies of scale in Krugman's model are *static* since the average cost of output decreases as the firm's scale of output, at a given point of time, increases. In other words, the firm is operating on the downward sloping segment of the standard U-shaped average cost curve.

9/ Krugman (1984)

Krugman's modelling of the static economies of scale as an independent rationale for infant-industry protection is novel since it is the *dynamic* economies of scale which are at the heart of the standard infant-industry argument based on capital market imperfections and externalities (or lack of appropriability). In these dynamic economies, the average cost falls as the length of time over which output is produced increases. Time is of the essence here as it is only over time that learning takes place. While dynamic economies may indeed depend on static economies as, for example, when learning is a function not only of time but also of the size of the market, and may, therefore, rise with a firm's *cumulative* output (i.e. total output over time), static economies of scale, by themselves, are not a sufficient basis for making an infant-industry case.¹⁰ But in making these static economies as a basis for protection, Krugman extends import-substitution from domestic to foreign shores and thereby translates temporary import protection into an export promotion mechanism. Crucial to Krugman's idea, however, is the assumption that the domestic market is large enough to facilitate the realization of the presumed economies of scale.

Corden (1990) has pointed out that the assumption of a Cournot-oligopoly is not essential to the argument that import protection can be export promoting. He cites the work of Pursell and Snape (1973) who have shown that when there is a domestic monopolist characterized by increasing returns to scale who faces given world prices (i.e. small country assumption), then a tariff could make a discriminating monopoly possible allowing prices at home to be raised and those abroad to be lowered, and thus promoting exports (although this would not be socially optimal).

Thus, while some of the ideas underlying profit-shifting can well be derived from the

^{10/} See Corden (1974, chapter 9) for an excellent exposition on this theme. He calls the argument for infant industry protection based on static economies of scale "the pseudo-infant industry argument". See also Grubel (1966) for more on the economies of scale argument.

conventional body of trade theory, the profit-shifting arguments do provide at least two new rationale for government intervention in an interesting and elegant framework. First, Brander and Spencer's rent extraction argument provides an argument for the use of an import tariff by a small country to improve its national welfare when there are foreign oligopolistic suppliers in the domestic market. Second, Krugman's import-protection-as-export-promotion argument presents static economies of scale as an independent rationale for infant-industry protection. But, as we see below, all of the profit-shifting arguments are faced with strong and potent criticism.

II. Criticisms of the Profit-Shifting Argument

Criticisms of the profit-shifting argument have been levelled on both economic and political economy grounds. The economic criticisms emanate from the sensitivity of the model to assumptions made about competitive behavior and the number of firms, the size of the excess profits that oligopolistic firms are alleged to earn, the partial equilibrium nature of the analysis, and the identification of the distortion and the choice of instrument. The political economy arguments are largely based on the limited scope for strategic trade policy in view of potential foreign retaliation, inefficient government intervention, capture of policy by special interests, moral hazard problem, and possible inimical redistributive effects.

1. The economic critique

(a) Sensitivity to Assumptions about Competitive Behavior

Eaton and Grossman (1986), in a very damaging criticism, succinctly demonstrate the lack of robustness of these models. They show that the results depend crucially on the Cournot assumption

where each firm selects its optimum level of output taking the output of the other firm as given. Changing to a Bertrand strategy, where the strategic variable is price and not output, reverses the policy conclusions by making an export *tax* the optimal strategy! And if the duopolists engage instead in "consistent" conjectural variations, where each firm's conjectural variation is identical to the actual policy responses of its rivals, then the transfer of rents to the home firm, or profit-shifting, is impossible and free trade becomes the optimal policy.

In defence of their arguments, Spencer (1986) suggests that inter-firm competition occurs in three stages - in R&D, productive capacity and marketing. It is only at the last stage that competition is likely to be in prices and, therefore, the criticism of Eaton and Grossman applies to this last stage only. For the first two stages, competition is in quantities and hence of the Cournot type. Spencer, therefore, argues that there is still a case for targeting the earlier stages. But as has been argued earlier with respect to the externalities argument, if policy is to target the earlier stages, the recommendation would be one of industrial policy since the instruments required would be domestic instruments; there would, therefore, still be no case for an activist trade policy.

(b) Sensitivity to the Number of Firms

Dixit (1984) considers a more general Cournot duopoly but one where the home market, and, therefore, a possible tradeoff with consumer surplus, is also involved. He shows that an export subsidy is the policy recommendation only as long as the number of firms is not "too large" and that as the number of domestic firms increases, the optimal policy of an export subsidy is actually reversed. This is because competition between domestic firms generates a negative pecuniary externality since each of the domestic firms will not take into account the effects of its actions on the profits of the other domestic competitors and produces more than the collusive outcome. This will reduce the share of the global rents

that they jointly bring to the country. With a sufficiently large number of firms, the profit-shifting motive for a subsidy is outweighed by the negative externality motive for a tax.

But even for the cases where an export subsidy expands global market share, the increased rents which were presumed to accrue might be illusionary, as Horstmann and Markusen (1986) argue. This is because export subsidies lead to inefficient entry that reduces an individual firm's output and pushes the firm up, rather than down, its average cost curve driving rents to zero. The subsidy would, therefore, not be recaptured, much less secure excess returns for the producers, and national welfare would be lower than in the free trade situation.

Eaton and Grossman (1986) have also shown that when firm behavior is characterized by consistent conjectures and there is more than one domestic firm, then an export tax will always be optimal. Consistent conjectures eliminate any possibility of profit-shifting; thus, the only remaining factor in play is the competition between domestic firms in third markets which, as stated above, generates a negative pecuniary externality. A welfare-optimizing strategy would be to use an export tax to restrict exports and exploit the country's monopoly power in trade more fully - the old optimum tariff argument revisited.

(c) The Size of Excess Profits

Grossman (1986) has also questioned the size of the excess profits or rents that oligopolistic firms earn. He argues (p. 57) that "Often what appears to be an especially high rate of profit is just a return to some earlier, riskier investment. Research and development expenses, for example, can be quite large, and many ventures end in failure. Firms will undertake these large investments if they can reap the benefits in those instances where they succeed. Once the market is in operation, we will of course only

observe those companies that have succeeded. We may then be tempted to conclude that profit rates are unusually high. But industry profits should be measured inclusive of the losses of those who never make it to the marketing stage". If profits are not large, then the entire scope of the profit-shifting argument as a way of increasing national welfare is considerably eroded and an export subsidy in such a case would only create a misallocation of resources.

(d) Partial Equilibrium Analysis

While the economic arguments in support of intervention have been developed in the context of a partial equilibrium analysis, partial and general equilibrium results can differ quite radically. The export promotion arguments are based on models in which there is one oligopolistic domestic industry in an otherwise competitive economy. When this industry is subsidized, its expansion is effected by drawing resources from other uses and where there are no rents to be lost. But in a general equilibrium context, some crowding out of traditional firms will take place as domestic competition for the scarce resources will bid up their market prices and price out the competitive domestic firms, quite akin to the allocation effects of the well-known 'Dutch disease' paradigm. And if there are several domestic oligopolies, the gains from rent extraction in one industry will be derived, at least in part, by the losses in rents captured by others. These will offset the gain in national welfare from the export subsidy.

In fact, Dixit and Grossman (1986) have shown that when all the export industries are symmetric (i.e. face similar demand conditions in export markets, have similar production technologies, and face similar degrees of foreign competition), then the losses clearly outweigh the gains when any one or more sector is targeted for subsidization, and free trade is the optimal policy. When the industries are not symmetric, net gains in national welfare can arise depending on how much extra profit is shifted to the domestic industry per unit of the scarce resource expended in its expansion. This, in turn, depends upon

the production technologies, both domestic and foreign, the degree of substitution between their products, the price responsiveness of demand in the export market, and on the nature of the oligopolistic competition. This suggests heavy informational requirements for selecting the industries to be targeted which, in practice, is going to be difficult to meet. Therefore, to ignore intersectoral shifts in factors of production and the concomitant changes in factor prices is to seriously misspecify the model.

(e) Identification of Market Failure and Choice of Instrument

It is also difficult to justify trade intervention on grounds of increasing returns to scale. Since these are internal to the firm, the question arises as to why the firm's own incentives to exploit its scale economies are not consistent with the social optimum. This is relevant only in the context of the second and third variants of the profit-shifting argument as presented earlier.¹¹ As has been argued before, in Krugman's variant of the profit-shifting argument, the small size of the market-share precludes the attainment of the scale economies. But size is not relevant in the modelling of the second variant of the argument. The inability to achieve scale economies there has to lie in market failures arising from the absence of perfect information. This is because the theoretical and unrealistic artifact of the Cournot assumption leads to the abandonment of perfect foresight. This does not, however, provide for a role for an export promoting strategy. The first-best policy which achieves the given objective with the least cost in terms of consumer welfare is not trade policy but domestic policy that directly addresses the domestic distortion in place. In this instance, it would be the public provision of market information.¹²

In the case of the first variant of the profit-shifting argument - the rent-extraction argument -

11/ The first variant allows for the exploitation of the scale economies by the foreign firm exporting to the domestic market. In fact, it is the exploitation of the economies which provides the firm with oligopoly power.

12/ This is, of course, premised on a presumed government superiority in doing so.

Srinivasan (1989) has shown that the trade policy prescription of a tariff is *not* the first-best policy as the tariff *increases* the wedge between the price charged to domestic consumers and the marginal cost of the foreign producer. The first-best policy is the combination of an optimally set lumpsum tax on the foreign oligopolist and an equal subsidy to domestic consumers. Such a two-pronged policy would actually secure the efficient, competitive outcome and does not impose any cost to society as the subsidy to the consumers would be financed entirely by the tax on foreign oligopolists.

2. The political economy critique

(a) Foreign Retaliation

The policy problems of the profit-shifting argument are compounded when we bring in political economy aspects. Policies aimed at improving national welfare by securing excess returns for domestic firms or by supporting domestic industries can provoke foreign retaliation by virtue of their beggar-thy-neighbor characteristics. This has the unfavorable result of leaving both the countries worse off than free, non-interventionist trade. As Bhagwati (1989) has argued, "such retaliation is more likely in precisely the knowledge-intensive high-tech industries where economies of scale relative to world markets are presumed by the proponents of these new theories to be significant, for these industries are widely regarded as important in themselves. Their location behind one's own borders is supposed frequently to be a matter of securing broader political and economic benefits just as manufacturing generally was regarded by developing countries during the postwar years. Foreign government intervention, regardless of whether profit-shifting-related advantages exist or not, is generally seen therefore as an attempt to get a larger share of this important pie than is warranted by legitimate market forces." The risk of foreign retaliation may actually be greater for smaller countries who might be singled out for exemplary retaliation. Note that, as with the optimum tariff argument, the new trade theory does not purport to

increase global welfare but only to redistribute it in favor of one's own country. In fact, by moving away from a market-determined allocation of the gains from trade, it reduces global welfare.

(b) Inefficient Government Intervention

Moreover, the profit-shifting argument requires government intervention. But as Bhagwati (1989) has argued, governments may not function benignly, as the silent executive of the welfare maximizing economist (the *puppet government* assumption), but rather like autonomous agents with objectives of their own (*self-willed government* assumption) or as a marketplace for lobbying activities (the *clearinghouse government* assumption). As soon as the benign role of government is assumed away, the possibility arises that government intervention may well be welfare-worsening. The history of developing countries is littered with proof of misguided and excessive government intervention. Moreover, the informational requirement for any government, and particularly for developing country governments, to engage in the selection of industries is going to be very huge. Even otherwise, there is no reason to suppose that the government will be better able to select 'winners' than the private sector.

(c) Capture of Policy by Special Interests

Arguments for government intervention also ignore the possibility of the capture of policy by special interests. When making microeconomic interventions, governments are necessarily influenced by small, special interest groups who stand to gain by large amounts. The costs, on the other hand, are borne by large, diffuse groups who don't have all the information regarding the policy. Consequently, policy intervention tends to be excessive or misguided. Recourse to political and bureaucratic imperatives, rather than to economic viability, in making economic decisions is necessarily a welfare-worsening course.

(d) Moral Hazard Problem

Moreover, there is an inherent moral hazard problem in governments providing subsidies to firms in order to credibly commit them to an aggressive policy. Domestic firms may well find higher returns to subsidy-seeking than to aggressive behavior which will only foster dependency and serve to entrench the subsidies. Such subsidy-seeking belongs to the genre of distortion-triggered directly unproductive, profit-seeking activities (DUPs).¹³

(e) Inimical Redistributive Effects

Another political economic argument arises from the general proposition that even Pareto-efficient interventions have inevitable, and possibly inimical, redistributive effects. Export subsidies will serve to transfer income to the owners and employees of the 'protected' industries from the rest of society. Since the industries suggested for export promotion are typically the high-tech industries, such income transfers will manifest themselves either in wage increases for the already employed, well-paid, highly skilled workers, or in increased above-normal profits to shareholders. Related to this is another general proposition of how the subsidies are going to be financed and of the possible distortionary effects of such financing. Both of these make the attainment of an efficient economic rate of return on the subsidy a more difficult and uncertain task.

The above criticisms severely undermine the utility of the new trade theory and question its validity as a basis for policy formulation. These apply generally to both developed and developing countries. In fact, the political economy arguments against the new trade theory gain greater potency in the context of the developing countries. For instance, the possibility that the trade strategy will be captured by special interests is even more relevant for the developing countries because (i) rent-seeking

13/ See Bhagwati (1982).

and DUP activities are more pernicious, (ii) the political institutions are more fragile and therefore more susceptible to bending under such pressures, and (iii) institutional arrangements are weaker than in the developed countries. Moreover, the record of government intervention in developing countries is especially poor. Since the informational requirement for any government to engage in the selection of industries for trade intervention a lá the new trade theory is particularly huge, this suggests that any excursion along this route is going to be singularly inefficient and welfare-worsening.

But some may still see, in the rent extraction argument and the import-protection-as-export-promotion argument, not only validity but also special relevance to the developing countries. The following section, therefore, analyzes its relevance to the developing countries in the light of the identifying features of such economies and ignoring the above economic and political economy criticisms. It shows that even these two special insights of the new trade theory are not of any relevance to the developing countries.

C. THE NEW TRADE THEORY AND DEVELOPING COUNTRIES

It is not clear that the crucial market and technological characteristics on which the new trade theory builds are identifying features of developing country economies. These are questions of market structure, economic size, and the technological character of exports. There is also the additional issue of the extent of the gains from trade liberalization in an imperfectly competitive world and, therefore, whether the policy prescription for trade liberalization that is rendered from the competitive neoclassical model is reversed or reinforced by the new modelling.

1. Market Structure

Rodrik (1989) provides evidence from the literature on the high four-firm concentration ratios in developing countries' industries relative to those in the developed countries and argues that "imperfect competition is in fact more pervasive in the industrial sectors of the developing countries than of the developed ones".¹⁴ Even if we accept, in the absence of a better statistic, the high concentration ratios as suggestive of an oligopolistic market structure, the reasons for such a structure are quite different from the increasing-returns-to-scale characteristic which is at the heart of the theoretical modelling of the new trade theory. For instance, capital market imperfections, cultural factors, or government policies could have led to oligopolistic markets in developing countries. In particular, the import-substitution policies pursued by developing countries for much of the postwar era kept foreign competitive pressures at bay, and induced excess domestic capacity through instruments such as import quotas. Since these were issued on the basis of production capacity, they were biased towards large-scale production. Simultaneously, the entry of new firms, who would have been attracted by the supernormal profits, and the growth of the industry itself was restricted by licensing requirements. Developing countries also share a general lack

14/ Rodrik (1989, Table 5.1) provides the following four-firm concentration ratios in industry citing other original sources.

Comparison of Four-Firm Concentration Ratios in Industry

Country	Year	Unweighted Average of Four-Firm Concentration Ratios (%)	Number of Industries
Brazil	1972	72	68
Chile	1979	50	41
India	1968	55	22
Mexico	1972	73	73
Pakistan	1968	66	51
Turkey	1976	67	125
U.S.	1972	40	323
France	1969	28	48

These figures are not strictly comparable since the averages are calculated at different levels of disaggregation of the industries. These ratios are also based on different existing levels of protection and are not truly indicative of the structural characteristics of these economies.

of antitrust policies or of their implementation. In addition, in the context of planned economies, the requirements for a central gathering of information, its processing, and the final dissemination of instructions to individual enterprises put limitations on the number of enterprises within each industry so as to make the system manageable.¹⁵ There is also, in any case, inconsistent incentives between those who want information and those who have to reveal it.

In fact, there is no strong evidence that increasing returns to scale are responsible for this market structure. An anecdotal evidence of the scope of scale economies, which is often cited, is that of the automobile industry. It is generally believed, from studies of developed countries, that the minimum efficient scale of production is in the range of 200,000-300,000 cars per model per annum.¹⁶ But most developing countries have average production runs of only around 20,000 implying the presence of unexploited scale economies.¹⁷ These studies, however, do not take into account the less capital-intensive and low technology techniques of production, the reduced expenditures on R&D, advertising and marketing, and the long life of each model. Nor have the economies of scale inherent in some of the heavy capital-intensive industries manifested themselves in national comparative advantage in those industries as the scale of output increased. In fact, calculations of the domestic resource costs of these industries have found them to be higher than the exchange rate (i.e., the domestic resources utilized to produce a dollar's worth of import-substitutes have been higher than the domestic resources utilized for a dollar's worth of imports). Moreover, the extent of the scale economies depends fundamentally on the technology of production which in the developing countries with their advantage in lower labor costs is

15/ Newberry, D.M. and Kattuman, P. in "Market Concentration and Competition in Eastern Europe", *The World Economy*, Vol.15, No.3, May 1992, provide figures from 1988 to show that "enterprises in the Soviet-type economies are more than ten times the average size of those in the developed market economies".

16/ See Owen (1983), table 4.12.

17/ See Rodrik (1989), table 5.2.

biased in favor of labor-intensive techniques of production. Some evidence of this is presented in Krueger (1975) in her study of the Indian automobile industry. The manufacturers she interviewed did not believe that there were any significant economies of scale to be exploited.

The crucial question with respect to the relevance of the new trade modelling to developing countries is not whether the markets are merely oligopolistic but whether the oligopolistic characteristics derive from economies of scale. After all, it is the economies of scale that enable an oligopolistic firm to reduce average costs sufficiently, as the scale of output increases, and thereby capture a larger share of the global profits. The evidence from the developing world on this count is clearly in the negative.

2. Economic Size

The small size of developing country markets makes strategic trade policy irrelevant on several grounds. First, the small size of domestic markets precludes the exploitation of scale economies in the domestic market making Krugman's import-protection-as-export-promotion argument irrelevant.

Second, as Krugman (1989) has argued, small size reduces the ability of developing country governments to play strategic games. This will be so because small countries are not typically the repositories of the global industries the capture of whose rents through strategic games is the focus of the new trade theory. And even if such global industries were based in a small country, the small size itself will severely detract from the ability of the country to act as a credible first-mover.

Third, because of their small size, developing countries stand to attract and, therefore, to lose more from foreign retaliation. Whatever might be said of the argument that their small size will actually induce the larger countries to be more concessionary as the cost to them will be small, and that they will

be less likely to retaliate for the same reasons, history is proof of the trampling of the weak by the strong. In this context, note the tremendous increase in countervailing duties by the developed larger countries during the 1970s and 1980s that were imposed against the developing smaller countries and the more recent backtracking by the U.S. on its threat of punitive trade restrictions on (large) EC in the dispute over public procurement policies. The case, therefore, is quite strong that smaller countries will be singled out by the larger countries for exemplary retaliation (i.e. to set an example for others) not only because the loss from trade restrictions would be very small for them but also because the risks of retaliating against a larger country - a 'peer' - could elicit a trade war which would be mutually devastating. Retaliation is also more credible against smaller countries. But any retaliation would be particularly disastrous for the developing countries because of their greater need for foreign market access (for faster growth) given the small size of their own markets.

3. Technological Character of Exports

Developing countries' exports, reflecting their comparative advantage, are typically resource- and labor-intensive the technology of which is rarely subject to increasing returns to scale. Table 1 provides the structure of developing countries' exports for 1989. Almost two-thirds of their exports of both primary products and manufactures are to the developed countries. Developing countries' exports of primary products were \$307 billion out of total merchandise exports of \$655 billion or 47 percent of their total merchandise exports.¹⁸ Much of their exports of manufactures are also labor-intensive which further reduces the role of possible economies of scale.

Moreover, as exporters of manufactures, the developing countries are only small players. In 1989, their share of the world exports of manufactures overall was a dismal 14 percent but their share of world exports of primary products was 33 percent compared to 79 percent and 51 percent respectively

18/ For the developed countries, the equivalent share of primary products in total merchandise exports is 19 percent.

for the developed countries. The exporters of manufactures are also concentrated among a few countries, primarily in East Asia but they, too, do not have global monopoly power.

Developing countries also do not export the high-technology goods the knowledge spillovers from whose R&D activity has been cited in strategic trade theory literature as the most compelling reason for intervention.¹⁹ Table 2 presents the shares of world high-technology exports over 1970-89. The developing countries which fall under the category 'others' exported, at most, only 6 percent of the world exports of high-technology products in 1988-89. Since the developing countries' comparative advantage does not lie in high-technology industries, their scope for shifting global profits to themselves is severely limited.

Krugman (1989) acknowledges that the technological character of developing countries' exports do not conform to the requirements of the new trade theory models, but he argues that increasing returns to scale (arising from large indivisible expenditures) in the provision of export infrastructure for primary products, like ports, warehouses, and transportation facilities, may allow for first-mover advantages, and hence for the strategic use of trade policy, even though the production of primary products may not itself be subject to increasing returns to scale. He argues that even an infinitesimally small investment subsidy can be sufficient to provide comparative advantage in the absence of an activist policy by other countries. But there is no empirical evidence that either the provision of export infrastructure has a minimum efficient scale of production too large for a small country or that the resulting economies of scale are so significant, relative to the size of the world market for these products, that they impinge on a country's

19/ See e.g. Tyson (1992) who defines a high-technology industry as "one in which knowledge is a prime source of competitive advantage for producers, who in turn make large investments in knowledge creation" (pp.18). In general, such industries are chemicals and pharmaceuticals, electrical machinery, electronic and telecommunications equipment, scientific instruments, and aerospace. See Tyson's listing of alternative classifications in Table 2.1 of Tyson (1992), pp. 20-21.

Table 1

Developing Countries' Merchandize Exports by Destination and Product (1989)

	World* (\$ billions)	(Percentage of world)	
		Developed Countries	Developing Countries
Food	84	64.3	22.6
Raw Materials	26	57.7	30.8
Ores & Minerals	18	72.2	16.7
Fuels	163	68.1	29.5
Non-Ferrous Metals	16	68.8	31.3
Primary Products	307	66.1	27.0
Iron and Steel	15	53.3	33.3
Chemicals	26	38.5	50.0
Other semi-manufactures	40	70.0	25.0
Machinery & Trans. eq.	131	64.9	29.8
Textiles	30	33.3	46.7
Clothing	44	90.9	6.8
Other Consumer Goods	54	77.8	16.7
Manufactures	359	62.4	25.6
Total	655	66.1	27.2

* Includes destinations to centrally planned economies which the GATT places outside of the countries labelled as developed and developing. Hence the sum of the percentages will not add up to hundred.

Source: International Trade 1990-91, GATT.

Table 2
Shares of World High-Technology Exports (%)
1970-89

Country	1970-73	1973-76	1976-79	1979-82	1982-85	1985-87	1988-89
OECD	95.57	93.93	91.52	88.79	86.80	85.30	83.64
NIC	1.30	2.28	3.18	4.06	6.05	7.56	8.76
Others	2.69	3.36	4.43	5.23	5.98	61.4	6.27

NICs = newly industrialized countries of Hong Kong, Korea, Singapore and Taiwan.

Source: Extracted from Table 2.3 of Tyson (1992). Refer to original sources cited therein.

decision to export. The latter, if true, would actually suggest that trade patterns are not determined by product comparative advantage but rather by the economies of scale in export infrastructure linkages! Moreover, the primary source for increasing returns to scale would seem to lie in the nature of the technology of production, like in the high capital costs and R&D expenditures of high technology industries, rather than in export infrastructure linkages.

4. Gains from Trade Liberalization

While the case for an activist trade policy in developing countries inspired by the new trade theory arguments is seriously eroded by the above arguments, the conventional wisdom of adopting a free trade policy is simultaneously reinforced by an imperfectly competitive world. Calculations of the gains from trade - the conventional "triangles" - based on the competitive neoclassical model provided numbers in the order of 0.5 to 2 percent of GNP. But Harris (1984) has estimated the static long-run gains to trade to Canada in an imperfectly competitive model to be a much higher 8-12 percent. Richardson's (1989) survey of empirical work concludes that, in imperfectly competitive markets, trade liberalization, rather than policy intervention to promote domestic producers, leads to gains from trade two to three times larger than those under perfect competition.²⁰ These results strengthen the case for trade liberalization and may be the only item of relevance for developing countries. This is particularly important since the new trade theory was alleged to undermine the neoclassical prescription for trade liberalization which many developing countries had begun to follow since the eighties after weltering for decades in protectionist policies.

20/ According to Treffer (1993), these estimates are biased downwards as they consider trade liberalization as an exogenous variable when, in fact, it is endogenous. By treating the level of protection endogenously, he has shown that its restrictive impact on U.S. imports in 1983 was 10 times the estimate derived from treating the level of protection exogenously. This, therefore, opens up the possibility of even larger gains from trade liberalization than those estimated.

D. CONCLUSIONS

The new trade theory incorporates models of imperfect competition and increasing returns to scale in trade theory. The role for active government intervention that economic analysts and policymakers find in it has been shown in the paper to be an illusion and most of the major propositions of the theory to be readily understood in the context of the neoclassical trade theory.

Economists do not yet fully understand how oligopolists behave and compete. Consequently, any modelling of oligopolistic behavior necessarily tends to be extremely restrictive and of limited application. It is, therefore, not surprising that the new modelling of international trade based on oligopolistic behavior lacks theoretical robustness and is particularly sensitive to assumptions about competitive behavior and the number of firms. Other economic criticisms relate to the size of the excess profits that oligopolistic firms are alleged to earn, the partial equilibrium nature of the analysis, and the identification of the market failure and the choice of instrument. Moreover, the normative prescriptions that arise from it are subject to a host of political economy criticisms based on the potential for foreign retaliation, inefficient government intervention, capture of policy by special interests, moral hazard problem, and possible inimical redistributive effects. These criticisms severely undermine the applicability of these models for *any* country.

The limitations of the new trade theory are particularly acute for the developing countries, given their small economic size, the limited scope for profit-shifting, the nature of their trade, and the enhanced possibilities for the capture of trade policy by special interests. It is after an aeon of lost opportunities and misguided government interventions that developing countries are emerging as significant trading players in the international arena; their future should not be compromised so soon by a reversion to past

policies.

Paradoxically, and interestingly, the only point of relevance of the new trade theory to developing countries that does emerge lies in the strengthening of the case for trade liberalization and, therefore, for a reduced role for government in trade policy.

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