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**Imperfect Competition and Strategic Trade Theory:
What Have We Learned**

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Imperfect competition and strategic trade theory: what have we learned?

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Introduction

We begin this paper with a definition of strategic trade. It is reasonable to think about strategic trade theory as those situations in which exporters (nation or a single firm in the nation) have some form of price setting or quantity setting control. After all, this framework fits most closely what we think about when monopolies or oligopolies operate in a domestic market and most trade economists look to Brander and Spencer (1985) as sort of the formal beginning point of strategic trade theory. After reviewing the major theoretical contributions, we move to the literature on imperfect competition in the international grain markets. Particular attention is paid to two studies that test for strategic trade effects related to state trading activities. We then open up the definition of strategic trade to evaluate other research, particularly in the vein of trade liberalization and its effect on domestic market power. Finally, we close with a set of summary comments.

Export Strategic Trade

In this section, two major theoretical treatments of strategic trade are considered, and then we proceed into the empirical evidence. Though Brander and Spencer (1985) were the first to lay the groundwork for export strategic trade in a quantity setting game, we begin with a more general conjecture variations model due to Eaton and Grossman (1986). Here we consider a duopoly in which a single home firm competes with a foreign firm either in the foreign firm's local market or in a third-country market. The domestic firm's conjecture about the foreign firm's output response to changes in its own output is given by $\frac{\partial X}{\partial x} = \gamma$, whereas the corresponding for the foreign firm's is $\frac{\partial x}{\partial X} = \Gamma$. "Consistent" conjectural variations, implies that each firm's conjectural variation is equal to the actual equilibrium responses of its rivals. Also, products are substitutes in consumption, i.e.,

$$r_2(x, X) \equiv \frac{\partial r(x, X)}{\partial X} \leq 0 \quad R_1(x, X) \equiv \frac{\partial R(x, X)}{\partial x} \leq 0$$

Moreover, $X = \Psi(x)$ $g = \Psi'(x)$. g measures the actual reaction of the foreign firm to exogenous changes in x . Table 1. below summarizes the principal results. Proposition 1 from Eaton and Grossman restates the Brander-Spencer (1985) result: the optimal policy is an export subsidy under quantity setting (Cournot) competition. Benefits accrue to the home firm at the expense of the foreign firm. Proposition 2 extends the literature. The optimal policy for a very broad spectrum of price-setting case is exactly the opposite from the quantity setting case. That is, the optimal rent shifting policy is for an export tax.

In the case of a foreign policy response, multi-firm oligopoly, endogenous market structure, and domestic consumption, further extensions are made. In a symmetric, oligopolistic equilibrium

Table 1. Eaton and Grossman Summary Results

Assumption 1	Fixed and identical firms. Domestic firms compete with foreign firms either in the foreign firm's local market or in a third-country market. Foreign country will pursue a laissez-faire policy.
Cournot Conjectures	Optimal policy is export subsidy for the home country, which will benefit the home firm (and country) at the expense of the foreign firm. The profits for the two firms together will be smaller than in the laissez-faire equilibrium. Consumers of the product benefit from lower prices when the subsidy is in place, and the net effect on world welfare is positive.
Bertrand Conjectures	Optimal policy is export tax for the home country, which will increase the profits of both domestic and foreign firms at the expense of consumers. World welfare falls as the equilibrium becomes less competitive.
Consistent Conjectures	Optimal policy is free trade because there exists no shift of the home firm's reaction curve that can transfer industry profit to that firm, given the response of its rival.

Assumption 2	Fixed and identical firms, no domestic consumption. A home firm competes with a foreign firm either in the foreign firm's local market or in a third-country market. Foreign country can react.
Cournot Conjectures	Both countries will benefit from a mutual agreement to desist from attempts to shift profit homeward via export subsidization. Consumer's welfare and world welfare will decrease.
Bertrand Conjectures	Optimal policy is for both countries to tax exports. Consumers lose and world welfare declines.
Consistent Conjectures	Optimal policy is free trade.

Assumption 3	Fixed exogenous number of firms, no domestic consumption. N identical home firms compete with m identical foreign firms either in the foreign firm's local market or in a third-country market. Foreign country can react. Consistent conjectures.
Conclusion	Whenever there is more than a single home country firm and these firms do not collude perfectly, each home firm imposes a pecuniary externality on other domestic firms when it raises its output. Private incentives lead to socially excessive outputs, because home income includes all home firm profits. The government can enforce the cooperative equilibrium in which the home firms act as a group to maximize the home country's total profit by taxing exports or sales.

with n home firms and m foreign firms and no home consumption, if the domestic firms' conjectures are consistent, then the optimal production or export tax is zero if $n=1$ and positive if $n>1$. That is, when home firms' conjectures about the responses of foreign firms are consistent, the profit-shifting motive for government intervention is not present. Hence, there is no tax or subsidy if only one domestic firm exists. Whenever there is more than one domestic firm and those firms do not collude perfectly, however, each firm imposes an externality on other domestic firms when it raises its output. The government can enforce the cooperative equilibrium by taxing exports or sales.

If firms can enter or exit in response to government policies, two new issues are worth noting. First, given the settings of the model, export or production subsidies will encourage more firms to be active, and then raise the industry average cost. Therefore, a tax to discourage entry may be possible even when a subsidy would be optimal in an exogenous market structure. Second, trade policy alters the relative numbers of domestic and foreign firms. When residual profits exist, the replacement of foreign firms by domestic ones raises national product.

The last extension was to consider domestic consumption of the oligopolistic industry output. This directly implies the consideration of consumer surplus and disconnects the equivalence of production and export policies. Eaton and Grossman found that for a homogeneous product duopoly with consistent conjectures and nonzero domestic consumption, rising marginal costs implies an export tax or an import subsidy. However, the welfare effects of a small export tax or import subsidy is dependent of whether the home country is a net exporter or importer of the product. Under consistent conjectures, the standard terms-of-trade motive on the consumption side remains and a "consumption-distortion motive" arising from the gap between price and marginal cost. The former always indicates an export tax or import tariff while the latter may favor either a tax or a subsidy, depending on the precise forms of the demand and cost functions. Hence, there is a potential role for trade policy as a partial substitute for antitrust policy.

In summary, Eaton and Grossman laid an extensive groundwork for potential policy incentives emanating from primarily strategic export considerations. Policies that shift profits (i.e. rent shifting) can work only if the government is able to set its policy in advance of firms' production decisions, and if government policy commitments are credible. In the duopoly case, profits can be shifted only if firms' conjectural variations differ from the true equilibrium responses. However, the intervention of trade policy is beneficial only if the decision of domestic firm results in externalities (either positive or negative) from the point of view of domestic welfare. Cournot and Bertrand cases are good examples where the conjecture about rivals' response is zero but the true one is not, while the case of consistent conjectural variations is one where the optimal policy is laissez-faire since the conjecture is exactly right.

Eaton and Grossman (1986) (and Brander and Spencer, 1985) represent the launching stage for much of theoretical strategic trade literature. Scores of other rather narrow game-theoretic structures have been analyzed looking at a variety of topic areas. These include contributions in vertical markets, intermediate goods trade and vertical foreclosure (Spencer and Jones, 1991, 1992; Brander and Spencer, 1988; Ishikawa and Lee, 1997; and Ishikawa and Spencer, 1999), trade in differentiated products, (Gruenspecht, 1988), capacity investment (Dixit, 1984), countervailing duties (Dixit, 1988; Qiu, 1995), rent shifting under incomplete information (Bagwell and Staiger, 1994, Maggi, 1996, Brainard and Martimort, 1998), transnational technology differences (Neary, 1994), rent shifting (Fung, 1995, Stiegert and Hamilton, 2000), endogenous government control (Goldberg, 1995B, Karp and Perloff, 1995, Maggi, 1996) non-equivalence of tariffs and quotas (McCorriston and Sheldon, 1997; Hwang and Mai, 1988, Levinsohn, 1989) and cross ownership of firms (Dick, 1993, Stiegert and Hamilton, 2000). See Helpman and Krugman (1989), Krugman (1989) and Chang and Katayama (1995) for extensive reviews of this literature. And while much as

been made about the potential for strategic trade to influence global markets in the theoretical realm, the few empirical attempts at quantifying these gains suggest a rather different story.

Empirical Tests of Strategic Trade Effects, Behavior, and Distortions

The agricultural trade literature provides an adequate backdrop to consider the overall implications of strategic trade effects on global markets and welfare. The objective of this section is to summarize this literature. It is certainly not the case that even a majority of empirical work on strategic trade has been conducted on agricultural markets. Some well-known papers include 6 studies of the international automobile markets (Dixit, 1987; Krishna, Hogan, and Swagel, 1994; Smith, 1994; Feenstra, Gagnon, and Knetter, 1996; and Goldberg, 1995A, McCorriston and Sheldon, 1997), 16K random access memory (Baldwin and Krugman, 1988), petrochemical (Bernhofen and Peng, 2000), photographic film industry (Kadiyali, 1997), Airlines, (Klepper, 1994; Norman and Strandenes, 1994), and telecommunications (Kahai, Kasserman and Mayo, 1996).

International Grain Trade and the parochial view of strategic trade

We select as a starting point the international grain markets. Clearly, more industrial organization related empirical work has been done in these agricultural markets than any other. McCalla (1966) and later Alouze Watson and Sturges (1978) were the first to evaluate the international wheat market in terms of their oligopolistic characteristics. Working more from a traditional industrial organization vantage point, both papers were very much attuned to the kinds of issues that would arise 10-20 years later in the formal strategic trade literature. Both studies recognized the need for a grain storage mechanism if one hoped to classify the international wheat market as a quantity-setting oligopoly. Indeed, Alouze et al.'s result of an emerging global triopoly hinged on the Australian government's decision to build massive grain storage facilities at a time the CCC in the U.S. operated alongside a disaggregated storage network in Canada.

McCalla and Alouze et al. were correct to focus on storage patterns and consider only quantity games. Because wheat in those periods could fit nicely into a traditional grading system, it was much easier then to think of it as a homogeneous global commodity. Obviously, without differentiation (or capacity constraints), there are no incentives to play price games. The wheat market has dramatically changed from the 1960s and 1970s. Much of the recent evidence suggests wheat characteristics are now far more identifiable and priced in differentiated product setting (Stiegert and Blanc, 1997; Parcell and Stiegert, 1998). Therefore, recent trends have obfuscated the Eaton and Grossman task of understanding the market regime.

Following Baker and Bresnahan (1985), Carter, Maclaren, and Yilmaz (1999) estimated a residual wheat import demand model for Japan that incorporated product differentiation. They found support for the U.S. as a price leader with Australia and Canada competing in the fringe market. Other studies have focused on price discrimination and time series methods to uncover market leadership patterns. Generally, support for some form of country level leadership, particularly for Canada, emerged from these studies. (Goodwin and Smith, 1995; Smith, Goodwin, and Holt, 1995; Smith and Holt, 1997 and Goodwin and Schroeder, 1991). Papers by Carter and Schmitz (1979) and Love and Murniningtyas (1992) suggested that importer state trading enterprises (STE) had as much or more to do with the competitive structure in world wheat markets as did exporter STEs.

Studies of market distortions and market power involving other grain sectors have also emerged. Carter (1993) found no evidence of imperfect competition in the international barley markets, Schmitz and Gray (2000) found that the Canadian Wheat Board (CWB) accrued \$72 million per annum rents from distorting international barley trade. Kraft, Furtan, and Tyrchniewicz (1996)

found that the CWB generated \$19/ton-\$34/ton in benefits to farmers. Carter, Lyons, and Berwald linked bureaucratic inefficiencies within the CWB to \$20/ton-\$37/ton in losses to Canadian barley producers. The Center for International Economics (CIE) found no evidence of any price premiums in export markets for malting barley exported by the Australian Barley Board.

While much had been learned about market power, trade distortion, and welfare losses/gains in the world grain markets by the turn of the last century, little had been done to suggest and implicate these apparent distortions, leadership patterns, to actual strategic trade policies and/or theory. Brander and Spencer (1985) and Eaton and Grossman (1986) are essentially about nations being able to unilaterally distort trade and shift rent from international markets to the home firm. The key ingredient for such trade distorting practices is that rent-shifting is only possible when markets are imperfect and there exists some form of unilateral precommitment. As we see from Table 1, the resulting benefits begin to quickly breakdown when both governments in the two-player game offer export subsidies or taxes. As Dixit (1984) also makes clear, the results are quite sensitive to the number of exporters. Thus, if we are to identify and quantify the case for strategic export policy tools, it is important to constrain our analysis to the plausible. Following the theoretical footprint in Hamilton and Stiegert (2000) Hamilton and Stiegert (2002) and Dong, Marsh and Stiegert (2003) considered the rent shifting possibilities for durum wheat and malting barley markets respectively involving similar policy structures emanating from the CWB and Australian Barley Board (ABB). The CWB is the only STE operating in the world durum market, while the CWB and the ABB compete in the global malting barley market.

The behavior of STEs in international markets fits the above plausibility requirement in several ways. First, STE activities are quite transparent relative to independent operating firms and much transaction and internal payment data are public. Second, unlike the case of governments shifting rent in favor of domestic firms, which may raise strategic delegation issues and asymmetric information problems, STEs maintain legal and exclusive control over both the instruments of strategic trade and the quantity traded. In simple words, STE's represent one of the simplest and most transparent organizational forms and have the potential to distort trade.

STE's are also a point of major economic and global political contention. After the Uruguay Round, the U.S. General Accounting Office was commissioned to conduct two studies on STE behavior (GAO, 1995; GAO, 1996). The results of these studies were, very generally, that grain STEs use many policy tools that comply with WTO law. The STE activities considered more problematic included export licenses, subsidies not tied marginally to a commodity, access to below-market borrowing rates, tax advantages, transportation subsidies, and delayed producer payments.

The focus of the rent shifting mechanism was on features related to the delayed producer payment system. Because durum producers in Canada and barley producers in Canada and Australia are paid an initial payment substantially below the market price, it is reasonable to think of the export market as being subsidized. Hamilton and Stiegert (2002) summarize "The large body of literature on vertical separation shows that similarly structured payment systems between upstream and downstream firms are capable of generating the necessary precommitment mechanism to attain a Stackelberg leadership position (see, e.g., Bonanno and Vickers (1988), Lin (1988), Coughlin and Wernerfelt (1989), and Kühn (1997)). By setting a below-market procurement price for a commodity, a legally sanctioned STE is thus able to shift rent in the export market in much the fashion that a downstream firm in a vertically structured industry can strategically position itself through use of an upstream price restraint.¹ Moreover, in the case of STEs, the final payment in a delayed producer payment system, which is typically delivered in lump-sum fashion, provides an explicit method of transfer back to the input supplier that rationalizes the system." (pg. 141).

¹ See Hamilton and Stiegert (2000) for an analysis of the antitrust implications of such vertical arrangements in international markets.

By sequential design, the study carried out in Stiegert and Hamilton (2002) was much simpler compared to Dong, Marsh and Stiegert (2003). Indeed, most of the anecdotal evidence about durum markets indicated the assumption of the product homogeneity was acceptable. Further, the only STE operating in the international durum market was the CWB and they usually controlled 40%-60% of the export market. As mentioned above, malting barley is traded globally involving two STEs and there is little evidence that malting barley is a homogenous commodity. Thus the major challenges in Dong, Marsh and Stiegert (2003) was to build a model with product differentiation features and allow two nations the ability for precommitment. Immediately, one should realize that the features in the malting barley market make it more difficult to justify the use of a strategic policy tool. If malting barley can be differentiated, perhaps the governing boards should find ways to build niche markets, coordinate production along quality parameters to assure return buyers, and use the residual feed barley market to maintain these quality goals. Once properly differentiated, premiums can be extracted from the world market regardless of the prepayment system. As we think back to Table 1, the ability of two functioning STEs, both with a below market prepayment system, creates potentially insurmountable problems for strategic trade to be effective.

Both papers present similar method to test for rent shifting effects. The principal equations describing optimal rent shifting input prices are given below followed by a short comparative assessment. Optimal rent shifting in Hamilton and Stiegert (2002) is empirically constructed from a simple isoelastic demand equation, $P = \alpha Q^{1/\varepsilon}$, where $\varepsilon < 0$ is the price elasticity of demand. Making use of $QP'/P = 1/\varepsilon$ and $QP''/P' = (1 - \varepsilon)/\varepsilon$, the optimal markdown, $m^* = c_c - w^*$, is characterized by

$$m^* = c_c - w^* = \left(\frac{-S_c^* P}{\varepsilon} \right) \left(\frac{\varepsilon + \lambda_{oe} S_{oe}^* (1 - \varepsilon)}{(1 + \lambda_{oe}) \varepsilon + \lambda_{oe} S_{oe}^* (1 - \varepsilon)} \right), \quad (1)$$

where c_c is marginal cost, w^* is the initial payment, S_c^* is the durum export market share of the CWB and $S_{oe}^* = \sum_{i=1}^n (q_{oe,i}/Q)$ is the market share of other exporters. For estimated values of the demand elasticity and the conduct parameter of the other exporters λ_{oe} (both are estimated from a multi-region supply-demand-storage model), equation (1) identifies optimal markdowns for each year. From the Dong, Marsh, and Stiegert (2003), the equivalent optimal markdowns for each STE are written:

$$w_1^* - c_c = -x_1 \left[P_{12} \left(\frac{\frac{\partial w_1}{\partial x_1}}{\partial w_1} - \gamma_{12} \right) + P_{13} \left(\frac{\frac{\partial w_1}{\partial x_1}}{\partial w_1} - \gamma_{13} \right) \right] \quad (2)$$

$$w_2^* - c_a = -x_2 \left[P_{21} \left(\frac{\frac{\partial w_2}{\partial x_2}}{\partial w_2} - \gamma_{21} \right) + P_{23} \left(\frac{\frac{\partial w_2}{\partial x_2}}{\partial w_2} - \gamma_{23} \right) \right] \quad (3)$$

where x_1, x_2 , represent total sales of malting barley to the world market by the CWB and the ABB,

$P_{ij} = \partial P_i / \partial x_j$ represents the product differentiation component, and $\gamma_{12} = \partial x_2 / \partial x_1$, $\gamma_{13} = \partial x_3 / \partial x_1$, $\gamma_{21} = \partial x_1 / \partial x_2$, $\gamma_{23} = \partial x_3 / \partial x_2$ are conjectural variation parameters. The γ_{ij} ($i, j=1, 2$ and $i \neq j$) indicates firm j 's reaction or best response to the change of firm i 's quantity change. For example, γ_{12} indicates the ABB's reaction/best response to the output change of the CWB.

Based on a bootstrapped estimation of optimal markdowns and based on a signed Wilcoxon nonparametric test, Stiegert and Hamilton (2002) found that of the sample years in which a positive markdown is observed, the results show that actual markdowns were not different from optimal markdowns at the 0.05 level in 17 of 22 cases. In four of the five remaining years in which the hypothesis of equal coefficient is rejected, the observed markdown set by the CWB exceeded the level necessary to acquire the optimal rent-shifting advantage in the durum market. Each of these cases corresponds with a strong leadership signal, although an excessive markdown payment is clearly not profit maximizing. Based on a bootstrapped estimation of the Bayesian system and based on a signed Wilcoxon nonparametric test, Dong, Marsh, and Stiegert (2003) found that actual markdowns were below optimal levels and that the prepayment system could not even effectively function to shift rent.

Jointly the results of these papers seem to confirm quite nicely the point made by Dixit (1984) and by Eaton and Grossman (1986) nearly 20 years ago. That is, the strategic trade framework does not seem to extend much past its homogeneous duopoly roots. We were starting to get a strong scent of this outcome from the calibration studies finalized in the mid-1990s and reported in Krugman and Smith (1994). In the preface, Krugman and Smith write: "The empirical implementation of the new trade theory has not been an easy matter. In spite of a growing body of evidence with such empirical work, each new application is a painful process. . . . It is also true that the research provides little support for a drastic rethinking of trade policy. Nobody has yet provided empirical evidence that would suggest large gains from protection or from export subsidy." (pg 7). The fact that a strategic trade distortion was identified (8 years after Krugman and Smith's comment) in the world durum market suggests such market incentives can be factored into decisions and this should weigh into future negotiations over the rules of STE activity. However, this is a very special case of a single STE controlling 50% of the market and chooses its purchase price for the homogenous principle input. The fact that this could not extend into the world malting barley market casts doubt about the importance of strategic trade effects across the broad spectrum of product and certainly buttresses Krugman and Smith's aforementioned point.

Widening the Scope

If we begin to think more liberally about strategic trade and what it can mean, we find more instances and perhaps greater insights than the strict view presented in the previous sections. Technically speaking, trade liberalization is not strategic trade; however, it is about welfare and it is about changing trade policies that for one reason or another were having the effect of enhancing domestic market power. To this end much has been said and the news is generally good. Aw, Batra, and Roberts (2001) examined the Taiwanese electronic product industry, and used firm-level data to determine if there are systematic differences in the export and domestic prices charged by Taiwanese firms. They utilized micro data on the prices charged by individual firms in the domestic and export markets and test for equal price. Comparisons are made for each of 30 electronics products manufactured in Taiwan in 1986 and 24 products manufactured in 1991. After controlling for firm heterogeneity, they found no significant price differences between the export and domestic markets in the latter study year when trade liberalization had been implemented. Significant import protection, including quotas, tariffs and domestic-content requirements, were found to be the source of the differential in the earlier study year.

Levinsohn (1993) investigated the effects of trade liberalization policy using a balanced firm-level panel spanning from 1983 to 1986 for almost all manufacturing firms in Istanbul, Turkey. The results show that prior to the change in trade policy, six industries were pricing at marginal cost, three above marginal cost, and one below marginal cost. Of three industries pricing above marginal cost, markups were moderate for two. After trade liberalization, the model found general support for the imports-as-market-discipline hypothesis.

Bottasso and Sembenelli (2001) evaluated the set of policy shifts designed to remove intra-EU barriers to trade: The Single Market Program or SMP. Fundamentally, removing intra-EU border restrictions should lessen the degree of market power and improve the technical efficiency held in many industries. Crucial to the paper was an ad hoc procedure to categorize the firm-level data into three groups based on their likely reactions to the policy shift: 184 highly sensitive firms; 199 moderately sensitive firms, 362 non-sensitive firms. Overall, they found support that highly sensitive firms had market power that was reduced post SMP. Markups dropped from 17-23% range pre-SMP to 7-12% in the post period. Further modeling suggested this took time. Support for productivity gains were less supportive, but perhaps suggestive. The SMP was announced in 1985 and initiated in 1988. Sensitive firms showed significant productivity gains from 1985-1987, when other firms did not. Several chapters from Sheldon and Abbott (1996) make the same point in a variety of contexts (see Hertel, ch. 6; van Duren and de Paz, ch. 7; and Kalaitzandonakes and Bredahl, ch. 8). Finally, Tybout states forcefully, “a handful of studies have implemented equation (2) [*PCM-regression-italics mine*] with plant level data, controlling for permanent cross-industry differences in technology with industry dummies, and controlling for efficiency-related variation in mark-ups by including market level shares. Results for Mexico (1985-90), Columbia (1977-1985), Chile (1979-86), Morocco (1984-89) all reveal the same basic pattern: in every country studied, relatively high industry-wide exposure to foreign competition is associated with lower [price-cost] margins.” (pg 5). All the above studies point to something far more definable from a welfare standpoint than what we find in traditional strategic trade policies.

Concluding Comments

The purpose of this paper has been to summarize and synthesize the empirical literature as it pertains to strategic trade. We focused closely on the findings from Eaton and Grossman (1986) when putting together the assessments of the empirical agricultural literature. We then discussed and summarized some of the finding about trade liberalization and the imports-as-market-discipline hypothesis. In all fairness, strategic trade is a broader subject than this paper has covered. Indeed, papers that evaluate import trade policies and/or the political structure of import policies should be included (i.e. Bredahl, Schmitz and Hillman, 1987 on tomato trade, McCorriston and Sheldon. 1994 on cheese quotas, and Boughner, D., H. de Gorter and I. Sheldon. 2000 on tariff rate quotas). Bringing in the material that links agriculture to WTO negotiations and imperfect competition should also be included. Those are goals for the future. The process of collecting and sifting the research more specifically tied to an Eaton and Grossman (1986) framework was, nevertheless, somewhat beneficial. By the mid 1990's the marginal gains from new strategic trade theory were not showing up in the subsequent empirical studies covering a wide range of topics, approaches and industries. At the same time, the empirical literature on international grain trade was emerging with a fairly strong signal that markets were operating imperfectly. The Uruguay round of GATT ushered in a whole new trade arena for agriculture and state trading enterprises became a focal point of political contention. The Hamilton and Stiegert (2002) paper was thoroughly reviewed because it represented a specific test of the celebrated rent-shifting hypothesis from Brander and Spencer (1985) and Eaton and Grossman (1986). However while the strategic trade findings in this paper were significant, they would prove

to not at all important for a different STE market (Dong, Marsh, and Stiegert, 2003) somewhat more distant from the pure strategic trade theoretical foundations.

So, does strategic trade matter very much? The answer to that question is a simple and emphatic yes and no. Strategic trade has ushered in a whole new frame of mind for trade economists, policymakers, and firms with which think about the role of government in managing trade. We have dramatically improved our ability to model imperfect competition in international settings because we simply have a much better understanding of how a government's policies affect the market and firms in an industry. And finally, we sort of know now how to juxtapose and even rank strategic trade concepts with other important factors that influence trade and trade policy. On the 'no' side, the empirical findings from the mid 1990's to the most recent paper by Dong, Marsh, and Stiegert (2003) are far from flattering. It appears that government engagement of formal strategic trade policies could be justified in a political framework, but the gains appear to be small for most economic situations save the few that adhere closely to a duopoly market in which only one government can precommit. Finally, in cases of price setting games, we seem a long way off politically from taking the Eaton and Grossman prescription of export taxes. Based on the consistent finding over numerous studies involving many regions and nations, there is a relatively much stronger signal coming in as the to gains from the "imports-as-a-market discipline" hypothesis. If nations wish to engage in greater trade liberalization based off this motive, it seems reasonable that they might be willing to barter away the merchantist export subsidies. For agriculture, that, of course, has consistently proven to be nothing more than wishful thinking.

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