

Economic Integration and Governance : The Role of Preferential Trade Agreements

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Abstract

Traditional economic analyses implicitly assume that costs are technologically determined and thus the same regardless of the form of economic organization. In such a world, preferential trade agreements (PTAs) are a second-best policy. The theory presented here suggests that PTAs arise when international trade involves large and recurrent transaction-specific or non-salvageable investments that are subject to opportunism, particularly in the form of government policies. Organizational form then becomes a major determinant of costs; and a preferential trade agreement, by providing an organizational structure that can reduce opportunistic behavior, may produce benefits beyond those typically recognized.

I. Introduction

Preferential trade agreements are a hybrid form of international organization, an amalgam of a market-oriented organization for dealing with nonmembers and a non-market internal organization. Cooper and Massell [1965, p. 461] characterized the general "dilemma of CU [customs union] theory" as the fact that "the very grounds on which a CU is said to be superior to nondiscriminatory protection are precisely those grounds on which the union is necessarily inferior to free trade." The same could have been said of preferential trade agreements (PTAs) more generally. Twenty years later,

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the dilemma remains incompletely resolved¹; and renewed interest in PTAs (e.g., between the EC and Israel, the U.S. and Israel, and the U.S. and Canada) is a matter of controversy among international trade analysts. This paper views the formation of preferential trading areas as a response to transaction costs and associated contracting problems. Traditional economic analyses, by ignoring transaction costs, implicitly assume that costs are technologically-determined and thus the same regardless of organizational form. However, transaction costs have been shown to be important in the determination of both size and internal structure for a number of types of organizations.²

The theory presented here suggests that PTAs will arise as an organizational response when international trade involves large relation-specific investments that are subject to opportunism, particularly in the form of opportunistic government policies. Organizational form then becomes a major determinant of costs; and a PTA may represent the least-cost arrangement for achieving the gains from trade.³ When relation-specific investment is limited in scope or is not vulnerable to governmental opportunism, the governance role of PTAs is unnecessary.

II. Opportunism in International Trade

The key to understanding the role of transaction costs and the resulting potential for opportunism in preferential trade agreements is the recognition that international trade affects the structural development of participating economies. In the ideal world of neoclassical economics, the structural effects of trade are not inconsistent with the viability and efficiency of nonpreferential liberalization because the durability of assets and the costs of reallocating resources among industries are typically ignored within that framework. If two countries liberalize trade causing one country to invest in capacity designed to service the other's market, this investment can be costlessly dis-

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1. Attempts at resolving the dilemma include Johnson's [1960] analysis of methods for pursuing non-economic goals such as "nationalism"; Fries' [1984] demonstration that in the presence of uncertainty and incomplete asset markets, formation of a preferential trade agreement may be mutually beneficial *ex ante* but that one of the countries must lose *ex post*; and Wonnacott and Wonnacott's [1981] examination of the importance of taking foreign tariffs into account. For a macroeconomic approach to the gains from integration, see Mendes [1986].
 2. For example, Yarbrough and Yarbrough [1988]; Rugman [1981]; Caves [1982]; Sandler and Cauley [1977]; and Conybeare [1980].
 3. For an analysis of the effects of integration on protectionist pressures, see Frey and Buhofer [1986].

mantled or reoriented toward either the domestic market or a third market should the trading relationship between the two break down.

Nonetheless, international trade *does* alter the pattern of investment in participating economies. Once transaction costs are taken into account, this alteration may create a scope for opportunism in the form of relation-specific investments. Potential opportunism has important implications for the efficiency of unilateral nondiscriminatory free trade or, alternatively, for the alleged inefficiency of PTAs.

Relation-specific investment is expenditure on durable assets that are specialized among users. In order to obtain maximum benefits from a trading relationship, countries may find it necessary to invest in relation-specific capital.⁴ Williamson [1983] has classified this capital as site-specific assets (specialized locationally to economize on inventory and transportation expenses) and dedicated assets (specialized to a particular customer the loss of which would result in significant excess capacity).

The simplest and most obvious examples of site-specific assets are transportation facilities specialized locationally to handle trade-oriented transport. Once such facilities have been built, one party may attempt to opportunistically alter the terms on which exchange occurs, leaving the other party with little alternative due to the non-salvageable character of the investment. For example, Britain and France have recently decided to construct jointly a trans-channel tunnel. The initial contracting stage included an agreement over the division of benefits and costs, both construction costs and operating expenses. Once the tunnel is operational, one country (say, France) might refuse to pay its agree-upon share or costs or demand more than its agreed-upon share of benefits. Because the facility is site specific, the scope for such opportunistic behavior is substantial. In order for the "victimized" country (Britain) to exclude France from use of the tunnel, Britain would have to be willing and able to bear the full operating cost of the facility alone. Otherwise, whatever payment could be coaxed from France would be better than nothing; exclusion would not occur; and the opportunism would be successful and unpunished. This may be particularly problematic in international trade to the extent that location and geographic immobility serve to make investments non-

4. Baumgartner and Burns [1975] analyze the effects on 17th and 18th century Britain and Portugal of the countries' differing levels of relation-specific investment. See also North and Choucri [1983, especially pp. 445, 455, 457] for an analysis of "leverage" which includes the possibility of opportunism in the presence of relation-specific investments. For an argument that production specialization has been the most important element within the Council for Mutual Economic Assistance, see Kanet [1974].

salvageable. Typically countries form joint entities to manage such facilities; such entities are a public-sector analogue of vertical integration and other "nonstandard contracts" that are used to handle relation-specific investment in commercial transactions (Williamson [1984]; Klein, Crawford, and Alchian [1978]; Caves [1982]). Both the French and British government have refused to finance the tunnel project from public funds; nonetheless, a treaty between the two was required even under strictly private funding because of the obvious potential for governmental opportunism.⁵

A similar potential for opportunism may arise due to site-specific assets if an industry in one country develops "upstream" (as an input supplier) or "downstream" (as a customer) to an industry in the trading partner. If production in either industry involves relation-specific investment, one country may attempt to "hold up" the other. The most economically efficient location for processing is from a mine located in Country One may be across the border in Country Two. Once Country Two invests in a processing facility specialized to service the mine in One, both countries face incentives to behave opportunistically. Country One may raise prices for its ore since the processing facility in Two has no alternative source of supply; similarly, Two may raise the price of its processing service if One has no alternative processors available.⁶

Dedicated assets that are specialized for a trading relationship and where loss of that relationship results in excess capacity are the most widespread form of relation-specific assets in international trade. The process of specialization according to comparative advantage necessarily implies increased capacity designed to serve export markets. If these markets disappear due to opportunism on the part of the governments of the importing countries (e.g., through the imposition of barriers to imports), the value of the dedicated assets declines. This problem may be particularly acute in highly capital-intensive durable goods industries such as steel and ship-building (Tsoulakis and Fer-

5. Another, non-governmental form of possible opportunism has also affected the negotiations surrounding the project. A number of design proposals were submitted, differing significantly in estimated cost. One of the primary determinants of the costs of the various designs was whether or not they provided a road for automobile crossing in addition to rail crossing. Britain, long vulnerable to crippling strikes by rail workers, favored the more costly projects which provided automobile as well as rail facilities. France, on the other hand, viewed the extra cost of the automobile facility as too high. The tentative compromise calls for construction of a railroad tunnel designed with an option for the future addition of automobile capacity. In addition to the usual incentives for opportunism, there are fears that the election of a Labor Party government in Britain could result in nationalization of the project.

6. Alternatives always exist: the point is that they may be prohibitively costly.

reira [1980]).

The crucial element in relation-specific investment is the fact that the *alternatives* provided to transactors by the market are of significantly lesser value than the current pattern of transactions. By threatening to withdraw from the relationship, one party can extract from the other an amount up to the difference between the value of the transaction and the value of the partner's best alternative. The lack of equally-valued transaction alternatives is the source of the potential for opportunism.

In the absence of institutions and techniques for handling opportunism, international relation-specific investments will be avoided, reducing the productive efficiency of the world economy. Preferential trade agreements, by providing an organizational structure that can deter opportunistic behavior, may produce benefits beyond those typically recognized. These benefits take the form of facilitating relation-specific investments that lower production costs.

III. A Simple Model of Preferential Trade Agreements

In the presence of relation-specific investment, trade liberalization requires a governance structure or enforcement mechanism to prevent opportunism (Yarbrough and Yarbrough [1987b]). Given the sovereign status of the parties to trade agreements, third-party adjudication and enforcement is problematic at best. Preferential trade agreements represent an alternative mechanism for trading that does not rely on outside enforcement by third parties. The outcome is inferior to a regime of complete free trade such as would be possible in a world of zero transaction costs (this is the "dilemma" of customs union theory referred to in the Introduction), but may still be an efficient outcome in the presence of such costs.

We begin by considering the case of two countries negotiating to eliminate trade barriers in an industry. The countries realize that, should an agreement be reached, no third party will intervene to enforce the agreement, to determine whether it has been violated, to assess damages, or to impose penalties. In other words, both parties are aware that any agreement must be self-enforcing (Telser [1980]; Yarbrough and Yarbrough [1986]); should one party violate the agreement, the only recourse available to the other is to terminate the agreement.

If the countries enter into a self-enforcing agreement, it can be halted by either of two types of events: one of the countries may intentionally violate the agreement by opportunistically imposing protection, or a random exogenous event may occur causing

termination.⁷ Let T represent the random stopping time at which the agreement is terminated due to an exogenous random event and P_t the probability that the agreement is in force for exactly t periods prior to random termination (i.e., P_t denotes the probability that $t=T$). Because the random stopping time is not chosen by either country, the probability of random stopping at any time is independent of the benefits of the agreement. The life of the agreement must be finite, so the sum over all possible durations of the stopping probabilities must equal one :

$$\sum_{t=0}^{\infty} p_t = 1. \quad (1)$$

Let q_t denote the probability of an agreement lasting more than t periods prior to random termination, or

$$q_t = \sum_{j=t+1}^{\infty} p_j. \quad (2)$$

By definition, the expected duration of the agreement is

$$E(T) = \sum_{t=0}^{\infty} t p_t = \sum_{t=0}^{\infty} q_t \quad (3)$$

as shown in Telser [1980].

A. The Compliance/ Noncompliance Decision in the Absence of Relation-Specific Investment

We assume first that the industry for which trade policy is being negotiated involves *no* relation-specific investment by firms in either country ; the industry's resources are fully redeployable should the agreement be reached and then fail. Negotiations are between two countries, Country One and Country Two.

Let c^1 (for "compliance") denote the expected benefit to Country One in period j if it complies with the agreement to allow free trade in the industry ; c^2 is the equivalent expression for Country Two. The benefits in each period are independent of the actual duration of the agreement so long as violation does not occur. Nonetheless, the expected total benefit to each country from the agreement depends upon the expected duration since the longer the agreement is expected to last, the longer are the expected

7. We are interested in termination due to opportunistic violation. The possibility of random termination is included to render the termination time uncertain; thereby avoiding the "unravelling" or "last period" problem.

streams of benefits from compliance. We define B_t^1 and B_t^2 as

$$B_t^1 = \sum_{j=0}^t c_j^1 \text{ and } B_t^2 = \sum_{j=0}^t c_j^2 \quad (4)$$

so that the B_t terms (with appropriate country superscripts) give the total benefits to each country from an agreement lasting $t+1$ periods. The probability of a country obtaining the value B_t is P_{t+1} , the probability of the agreement actually lasting $t+1$ periods. Summing over all of the possible durations gives the expected value of compliance with the agreement, $E(c)$, for each country :

$$E(c^1) = \sum_0^\infty P_{t+1} B_t^1 = \sum_0^\infty q_t c_t^1 ; \quad (5-1)$$

$$E(c^2) = \sum_0^\infty P_{t+1} B_t^2 = \sum_0^\infty q_t c_t^2 ; \quad (5-2)$$

A similar calculation gives the expected benefit to each country if it does *not* comply, causing the agreement to be terminated. Let n_j (for "Noncompliance") denote the benefits to a country (represented by the appropriate superscript) in period j if the agreement is *not* in force. International trade theory implies that $n_j < c_j$ under the usual assumptions of competitive markets, no external effects, no scale economies, etc. The expected benefits from noncompliance, $E(n)$, are given by

$$E(n^1) = \sum_0^\infty q_t n_t^1 \text{ and } E(n^2) = \sum_0^\infty q_t n_t^2. \quad (6)$$

Now that the potential benefits of compliance and noncompliance are established, assume that the agreement is successfully negotiated and that there is compliance up through period $t-1$. Country One violates the agreement in period t by imposing protection with a gain in that period of $(c_t^1 + v_t^1)$ where $v_t^1 > 0$ is the immediate gain to Country One from opportunistic behavior in period t . The punishment is cancellation of the agreement by Country Two, implying a future stream of benefits of n_{t+1}, n_{t+2}, \dots in the absence of the agreement. Therefore, the entire sequence of benefits to Country One from the violation of the agreement at time t is $V_t^1 = 0, \dots, 0, v_t^1, n_{t+1}^1, n_{t+2}^1, \dots$. If we denote the expected benefit to Country One from a violation of the agreement at t by $E(c^1 + V_t^1)$, then the *net* amount which the country expects to gain by its opportunistic behavior at t is equal to

$$E(c^1 + V_t^1) - E(c^1) = [E(n^1)_{t+1} - E(c^1)_{t+1}] + q_t v_t^1, \quad (7)$$

where

$$E(n^1)_{t+1} = \sum_{i=1}^{\infty} q_i n_i^1 \text{ and } E(c^1)_{t+1} = \sum_{i=1}^{\infty} q_i c_i^1 \quad (8)$$

represent the expected benefits of future noncompliance and compliance respectively. Country One will continue to comply with the agreement if and only if $E(c^1 + v_t^1) - E(c^1) \leq 0$ or

$$q_t v_t^1 \leq E(c^1 - n^1)_{t+1}. \quad (9-1)$$

In words, the expected benefit from violation must not exceed the expected present value of the benefits from future compliance over noncompliance.

From Country Two's perspective, the same logic implies that Two will comply with the agreement if and only if

$$q_t v_t^2 \leq E(c^2 - n^2)_{t+1}. \quad (9-2)$$

Both the benefits from compliance and the benefits from violation depend, of course, on the original terms of the agreement. Equations (9-1) and (9-2) together form the necessary and sufficient condition for a self-enforcing agreement; (9-1) and (9-2) are each necessary and the two together are sufficient (Telser [1980]; Yarbrough and Yarbrough [1986]).

In the absence of relation-specific investment, the scope for opportunistic non-compliance is quite limited. A country may gain v_t by an opportunistic violation; but the most that the "victimized" country can lose is the present value of future benefits from the agreement. In particular, a country, even though victimized, is made *no worse off* than had agreement never been undertaken (Yarbrough and Yarbrough [1987a]).

Once relation-specific investment in the trading relationship is undertaken, the limit on the costs that can be imposed on the victim of opportunism is raised. Not only can the future benefits from compliance be lost; so can the value of the relation-specific portion of investment. The party undertaking relation-specific investment can be "held up" by the other party for an amount up to the value of the specific investment.

B. The Compliance/ Noncompliance Decision in the Presence of Relation-Specific Investment

Given the advantage of asset-redeployability in limiting opportunism, why would firms ever choose to make significant relation-specific investments with the accompanying expanded scope for opportunism? Within an international trade context, there

are two basic reasons. *First*, the technological options in a given industry may be such that a relation-specific (nonredeployable) technology offers significantly lower costs of production than do more general (redeployable) technologies. In this case, the production-cost gains from specialization must be weighed against the higher transaction costs involved in designing an effective governance structure for preventing opportunism. *Second* and more importantly, international trade often involves large-scale dedicated assets since production and exchange according to comparative advantage requires expanding capacity to service export markets. If a large export market is lost, then at least in the short run capacity is idled. The costs associated with the idled capacity may be appropriable by importers through threats to withdraw from the relationship unless given more favorable terms.

Consider the possibility of a self-enforcing agreement in which only one of the two parties (Country One) undertakes specific investment. By lowering production costs, the investment raises the total benefits from the successful negotiation of and compliance with a trade agreement. However, should an agreement be reached and Country Two opportunistically violate the agreement, Country One may lose not only the future benefits of the agreement itself, but also the value of the specific investment (denoted by s) which is, by definition, nonredeployable. Country One would clearly be willing *ex post* to pay an amount up to s to continue trading with Country Two. This implies that Country Two can violate the original agreement and force Country One to negotiate a new agreement with terms more favorable to Two by an amount up to s .⁸

Given this potential for opportunism, the entire sequence of benefits to Country Two from committing a violation of the original agreement at t becomes $V_t^{2*}=0, \dots, 0, v_t^2, c_{t+1}^{2*}, c_{t+2}^{2*}, \dots$ where the starred terms are the new-agreement analogies to the V^2 and c^2 terms in the original agreement. The return to Two from opportunism is represented by the benefit terms of the new agreement, the c^{2*} terms, which are greater than the original c^2 terms due to two's ability to extract a more favorable agreement in the presence of One's sunk investment. The important point is that Country One now has a stake in continuing a trading relationship which Country Two even after Two acts

8. Whether Two's opportunism is viewed as: (i) violating the original agreement, causing One to cancel, and then offering another agreement the terms of which transfer an amount up to s from One to Two, or (ii) threatening to back out of the relationship entirely, forcing a renegotiation of the original agreement with new terms which transfer an amount up to s from One to Two is economically irrelevant. We discuss the problem in terms of scenario (i): but the interpretation in terms of (ii) follows immediately.

opportunistically. One will be willing to renegotiate an agreement transferring an amount up to s to Two; any agreement within this bound is preferred by One to the end of the relationship with Two because of the relation-specific investment.

The necessary and sufficient conditions for an agreement are altered by One's vulnerability to hold-up. Country One's incentives for compliance and noncompliance with the original agreement remain the same since the one-sided nature of the specific investment precludes any attempt by Country One to hold up Two.⁹ Therefore, Country One will comply with the agreement so long as equation (9-1) holds. For Country Two, the stream of benefits from noncompliance has risen from $V_t^2=0, \dots, 0, v_t^2, n_{t+1}^2, n_{t+2}^2, \dots$ to $V_t^{2*}=0, \dots, 0, v_t^2, c_{t+1}^{2*}, c_{t+2}^{2*}, \dots$ where the increase in expected discounted present value lies between zero and s depending upon the relative bargaining strength of the two parties at the time of renegotiation.¹⁰

Given One's relation-specific investment, the net amount which Two can expect to gain from opportunistic behavior at t through the resulting renegotiation is equal to

$$E(c^2 + V_t^{2*}) - E(c^2) = E(c^{2*})_{t+1} - E(c^2)_{t+1} + q_t v_t^2, \quad (10)$$

where

$$E(c^{2*})_{t+1} = \sum_{i=1}^{\infty} q_i c_i^{2*} \quad (11)$$

represents the expected benefits to Two from compliance with the *new* post-opportunism agreement taking effect at $t+1$ if Two behaves opportunistically at t .

Country Two will continue to comply with the *original* agreement (i.e., will forgo opportunism) if and only if the expression in (10) is non-positive or

$$q_t v_t^2 \leq E(c^2 - c^{2*})_{t+1}. \quad (12)$$

Equation (12) implies that Two will comply with the original agreement if and only if the immediate gains from opportunism (given by the left-hand side of the equation) are no greater than the difference between the expected benefit from continued compliance with the original agreement and the expected benefit from compliance with the new

9. If the relation-specific investment by One also serves to make Two vulnerable to the disintegration of the relationship, then the argument becomes more complex. This possibility is reserved for the next section of the paper.

10. Note that we have assumed that the immediate gain from opportunism, v_t^2 , is unchanged: the increased incentive for opportunism comes from the ability to force a renegotiation of terms, transferring amount up to s from One to Two.

agreement that could be negotiated post-opportunism. But since the new terms of the post-opportunism agreement are, by definition, more favorable to Two by an amount up to s (implying that the right-hand side of (12) is negative), Two will comply with the original agreement only if v_t^2 , the immediate benefit of opportunism, is negative (i.e., a punishment).

But by assumption, no third-party can impose a punishment for violation; and Country One can punish only by termination. Therefore, equation (12) cannot be satisfied under current assumptions; so Country Two will act opportunistically. The necessary and sufficient condition given by equations (9-1) and (12) for a self-enforcing agreement in the presence of one-sided relation-specific investment cannot be satisfied; under these circumstances, no agreement would be reached. One remedy for this barrier to agreement is the provision of an economic "hostage" the loss of which can act as a punishment for opportunism along the lines suggested by Williamson [1983] and Yarbrough and Yarbrough [1986]. The role of the hostage is to equalize the stakes of the two parties in the relationship.

C. The Compliance/ Noncompliance Decision in the Presence of Relation-Specific Investment and a Hostage

By a hostage we mean a bond provided by the potentially opportunistic party to an agreement (Country Two in our example). The ownership of the hostage remains with Two so long as there is no opportunism; in the case of opportunism, the ownership of the hostage is automatically transferred to the victim (Country One). The use of a hostage can circumvent the problem with equation (12) above by rendering negative the immediate benefit to Two from opportunism.

If Country Two provides a hostage which it values at an amount h^2 , then equation (12) becomes

$$q_t(v_t^2 - h^2) \leq E(c^2 - c^{2*})_{t+1}. \quad (13)$$

Should Two act opportunistically at time t , the immediate impact is to give Two any resulting benefit, v_t^2 , and to transfer the value of the hostage from Two. A hostage which causes equation (13) to hold makes possible a self-enforcing agreement between the two countries to pursue free trade. The value of the hostage required depends upon the scope of the opportunism problem and on the pattern of probabilities of termination over time. The broader is the scope for opportunism (e.g., the larger is the amount of re-

lation-specific investment by One), the larger in absolute value is the right-hand side of (13) and the greater is the required value of the hostage. Similarly, the between the higher is the probability of continuation of the relationship two parties, the larger is the right-hand side of (13) and the larger must be the hostage.

IV. Trade Creation and Trade Diversion in the Presence of Relation-Specific Investment and Opportunism :

A Numerical Example

The static effects of preferential trade agreements include trade creation and trade diversion (See Lipsey[1960] ; Krauss [1972] and the literature cited there). Trade creation refers to the increased efficiency of intragroup trade resulting from the removal of intragroup trade barriers. Trade diversion, on the other hand, is the effect of the diversion of trade from low-cost nonmember suppliers to higher-cost member suppliers. The so-called dynamic effects of preferential trade agreements may include increased intragroup competition, economies of scale of producing for a larger market, terms-of-trade effects, and increased "bargaining strength" vis-a-vis non-members. For simplicity, we refer to all of the efficiency-enhancing effects of PTAs(both static and dynamic) as trade creation and all efficiency-reducing effects as trade diversion.

Simple static examples of trade creation and diversion by a PTA are illustrated in Table 1. The (constant) costs of production for a single good, an automobile, in Countries One, Two, and Three are \$ 3500, \$ 3000, and \$ 2000 respectively. With no tariff, Country One would import automobiles from Three, the lowcost producer ; this is represented in the first line of Table 1 by boldface characters. The second line of Table 1 represents the situation if Country One imposes a 100% nonpreferential tariff on imports of automobiles. The tariff causes One to become self-sufficient in automobiles, i.e., the 100% nonpreferential tariff is prohibitive. If Country One forms a PTA with Two while Three remains a nonmember subject to a 100% (preferential) tariff, One's demand for automobiles is satisfied by Two. The transfer of automobile production from One (Under a 100% nonpreferential tariff) to Two (under a PTA) represents trade creation because Two is a lower-cost producer of automobiles than is One.

The last two lines of Table 1 illustrate a similar situation but with the 100% tariff replaced by a 60% tariff on imported automobiles. A nonpreferential 60% tariff by One does not shift production away from Three(the free-trade producer). The formation of a preferential trade agreement by One and Two, however, moves automobile production

to Two. This move represents trade diversion by the PTA because Two is a high-cost producer relative to Three whose exports are eliminated by the preferential nature of the tariff.

However, once the governance role for preferential trade agreements is taken into account, changes in trade patterns that appear to be trade-diverting may in fact be trade-creating. Table 2 provides a simple numerical illustration of this point. The data in Table 2 are identical to those in Table 1 except for one change in assumption: Country Two now has the potential to undertake relation-specific investment to serve Country One's automobile market. If this investment occurs, Two's costs of production fall from \$ 3000 to \$ 1500. Once Two makes the relation-specific investment, if One closes its borders to automobile imports from Two, Two loses part or all of the value of its investment. Because of this potential for opportunism on the part of Country One, Two will undertake the investment *only* in the presence of institutional arrangements for limiting opportunism. Otherwise, Two continues to produce using general-purpose techniques that result in production costs equal to \$ 3000. In other words, unlike Table 1, Table 2 allows production costs to depend upon organizational form.

The first line of Table 2 reproduces the free-trade result in which Three, the low-cost producer (in the absence of the cost-reducing investment by Two), serves the market for automobiles in One. The 100% nonpreferential tariff causes One to become inefficiently self-sufficient in automobiles as in Table 1. The 100% preferential tariff shifts automobile production to Two, the same type of trade creation that occurred in Table 1; but the trade-creation effect is enhanced by the fact that the PTA now permits Two to undertake relation-specific investment that lowers production costs to \$ 1500 from \$ 3000. Two is now the low-cost producer not only relative to One (as in Table 1) but, in the presence of the PTA, relative to Three as well.

The change is even more dramatic in the case of the 60% tariff. In Table 1, the formation of a preferential trade agreement in the 60%-tariff case was trade diverting. Here in Table 2, a nonpreferential 60% tariff places automobile production in Three, the low-cost producer *given* the absence of investment by Two. The formation of the PTA along with the cost reducing special-purpose investment makes Two the low-cost automobile supplier. A similar situation was reported in Table 1, but there the effect was trade diverting because Two was a high-cost producer relative to Three. When the PTA induces Two to undertake the investment making it the low-cost producer relative to Three, then the agreement's effect in moving production from Three to Two becomes trade creating.¹¹

Table 1

Price in Country One of Automobiles Produced in Countries One, Two, and Three

Tariff by 1	Country	1	2	3
No tariff		\$3500	\$3000	\$2000
100% nonpreferential		\$3500	\$6000	\$4000
100% preferential on 3 (PTA with 2)		\$3500	\$3000	\$4000
60% nonpreferential		\$3500	\$4800	\$3200
60% preferential on 3 (PTA with 2)		\$3500	\$3000	\$3200

Table 2

Price in Country One of Automobiles Produced in Countries One, Two, and Three

Tariff by 1	Country	1	2	3
No tariff		\$3500	\$3000	\$2000
100% nonpreferential		\$3500	\$6000	\$4000
100% preferential on 3 (PTA with 2)		\$3500	\$1500	\$4000
60% nonpreferential		\$3500	\$4800	\$3200
60% preferential on 3 (PTA with 2)		\$3500	\$1500	\$3200

V. Preferential Trade Agreements as Governance Structures

If relation-specific investments are quite common in international trade, a question arises concerning why preferential trade agreements (at least successful ones) are relatively rare. The transaction-costs approach taken here views PTAs as an institutional response to potential opportunism which, in the absence of such agreements, could block relation-specific investment and reduce the productive efficiency of the world economy. This opportunism can arise from two sources : from the *firms* involved in a particular transaction or from *government* trade policies. If a firm in Country Two undertakes relation-specific investment to service the automobile market in Country One, the relationship can be threatened by opportunistic price decreases by importers in One, price increases by the firm in Two, import restrictions by the government of One, or export restrictions by the government of Two. In the case of opportunism by the firms engaged in the transaction, private contractual arrangements can evolve to reduce the potential for opportunism. These arrangements include long-term contracts, entry fees as bonds, marketing restrictions, and vertical integration (Klein, Crawford, and Alchian [1978] ; Klein [1980] ; Williamson [1983]). These private contractual arrangements between firms are of little use, however, in limiting possible opportunism in the form of changes in governmental policies. To guard against opportunism by governments, the governments themselves must enter into the equivalent of the private contractual arrangements. Theoretically, a government could promise a foreign firm or industry directly that no governmental opportunism would be attempted in the form of trade restrictions or other policy manipulations. Because of the difficulty in private parties enforcing contracts against a sovereign state, the possibility of credible direct government-firm contracts is limited ; these problems have been extensively discussed in the literature on relations between multinational corporations and host governments. An obvious alternative is agreements between governments covering the aspects of government policy that impact most directly on foreign firms. Preferential trade agreements are, in this sense, a public-sector version of vertical integration.

In summary, it may be impossible to have both cost-reducing relation-specific in-

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11. Baumgartner and Burns [1975, p. 128] distinguish between "process-level" exchange where institutions are taken as given (as in our Table 1) and "structure-level" exchange which determines the institutions and incentives under which process-level exchange will proceed (as in our Table 2).

vestment *and* unilateral, nonpreferential trade liberalization ; the presence of transaction costs and the associated opportunism may introduce a trade-off between the two. The efficiency loss from the preferential trade agreement (compared with the ideal of unilateral, nondiscriminatory free trade) may be more than offset by gains in productive efficiency brought about by relation-specific investment that would be impossible without the governance of the PTA.

VI. Implications of Preferential Trade Agreements as Governance Structures

The success of a preferential trade agreement depends upon its success in monitoring the compliance of its members with their agreed-upon responsibilities. This fact, along with the physical attributes of international trade and the technological attributes of various industries, has implications for the pattern of development of preferential trade agreements.

First, geography implies that, for trade involving exchange of physical goods, PTAs will be more likely to form among geographically proximate nations due to the monitoring advantages of proximity. This does not, however, imply the wholesale spread of regional preferential trade areas ; the complex and costly structure of a preferential trade agreement is justified only in the presence of large-scale relation-specific investments subject to opportunism through government policy. The theory does predict that, given a level of relation-specific investment, preferential trade agreements formed of geographically proximate nations will be better able to deal with opportunism than will more distant trading partners.

Second, because failure of a PTA due to ineffective monitoring may result in countries being unwilling to undertake relation-specific investments, the transaction-costs view predicts that in the long run relation-specific investments will be more likely to occur among neighbors.

Third, the theory predicts that this regional pattern will be less obvious in trade in services or in information where monitoring takes forms not necessarily based upon geographic proximity. Therefore, the governance view of PTAs implies that as trade in services and information grows relative to trade in physical goods, preferential trading patterns will be less geographically determined as monitoring technology changes along with production technology.¹²

12. Indeed, some evidence suggests that the importance of proximity has already begun to decline [Wallace(1975, p. 86)].

Fourth, there are implication for the types of economies that will be able to form and to maintain successful PTAs. In order to arrive at an initial agreement, countries must be able to agree upon an allocation of costs and benefits within the group. Such an agreement requires implicit consensus upon the costs and benefits which each country's membership brings to the group, including the effect on other member economies. For example, Germany's membership in the EC generates a number of costs and benefits to the group. One of the effects is a reduction in the benefits of membership to industries in France that are forced to compete with more efficient German rivals. Similarly, France's membership lowers the benefits of the EC to German agricultural interests who would prefer protection from competition with French farmers. The agreement underlying the EC is based on a blancing of these costs and benefits (MacBean and Snowden [1981, ch. 8]). Even with potential gains from a particular PTA, if the countries disagree over the value of membership and over the impact of each country's membership on other members, this *ex ante* bargaining problem may prove fatal. This suggests a possible bias away from developing countries and toward developed countries in the formation of successful groups.¹³ The value of any country's participation in such a group is subject to a great deal of uncertainty.¹⁴ Each country will possess private knowledge of its economy that it may choose to reveal or conceal according to its strategic interest. Some relevant indicators may be publicly observable and objectively measurable (e.g., market size, per capita income, resource ownership, current trade patterns); others may be both private and subjective (e.g., growth potential, skill and industriousness of work force, competence of policy management). To the extent that developed countries are more "proven quantities," they may fare better in this initial round of negotiations. Data availability is typically greater for developed countries (aiding the accuracy of the "public" estimation of the economy); and policy-making may be subjects to less uncertainty due to greater political stability and longer governmental tenure. The implication is that, for a given level of relation-specific investment, developed countries may be better able to overcome the *ex ante* problems that potentially block successful negotiation based on superior ability to agree on the value of participation by various economies.¹⁵

13. On integration among LDCs, see Straubhaar [1987].

14. For an examination of the importance of this type of uncertainty in another context, see Wiggins and Libecap [1985].

15. For an analysis of the importance of differential information availability in international negotiations, see O'Brien and Helleiner [1980].

The bias toward developed countries in the creation of preferential trade agreements may persist in survival rates. An important element in self-enforcing agreements is the ability to use the threat of loss of future benefits from the relationship as an enforcement mechanism. It must be true that in each period each member perceives the present discounted value of continued cooperation in the group to at least match the present discounted value of opportunistic behavior. This requires that member countries not discount the future too highly (Telser [1980] ; Klein and Leffler [1981a] ; Axelrod[1984]) high rates of discount depreciate the value of future benefits and make current opportunistic behavior more appealing. To the extent that governmental stability in developed countries may cause lower rates of discount to apply, developed countries will be less likely to behave opportunistically within a PTA causing the group's demise.

VI. Summary

The zero-transaction-cost assumption of neoclassical economics implies that preferential trade agreements are an inefficient alternative to unilateral, nondiscriminatory free trade. Yet, such agreements persist. A satisfactory theory of PTAs must explain both their existence and why they are not more pervasive. The theory developed here suggests that transaction costs and relation-specific investments are key elements in explaining the different institutional arrangements that perform a governance role in the international trade arena. Once these elements are taken into account, PTAs emerge as an efficient institution for dealing with a particular organizational problem : how to limit opportunistic government policies in the presence of large and recurrent relation-specific investments.

The governance approach to PTAs yields several potentially testable implications : (1) PTAs should tend to form among geographically proximate countries. (2) Countries should be less reluctant to engage in relation-specific investment for trade with neighboring countries due to monitoring advantages. (3) Regional patterns in PTAs should as a larger share of trade comes to consist of services and information as opposed to physical goods. (4) Developed countries should be more successful than developing countries in the *ex ante* negotiation process of PTAs. (5) Developing countries in maintaining a PTA once formed. Testing the validity of these implications in specific trade applications is the focus of ongoing and future research.

References

- Axelrod, Robert, *The Evolution of Cooperation*, New York, Basic Books, 1984.
- Baumgartner, T., and T.R. Burns, "The Structuring of International Economic Relations," *International Studies Quarterly* 19(1975), pp. 134-43.
- Caves, Richard E., *Multinational Enterprise and Economic Analysis*, Cambridge, Cambridge University Press, 1982.
- Coase, Ronald H., "The Nature of the Firm," *Economica* 4(1937), pp. 331-51.
- Conybeare, John, A.C., "International Organization and the Theory of Property Rights," *International Organization* 34(1980), pp. 307-34.
- Cooper, C.A., and B.F. Massell, "Toward a General Theory of Customs Unions for Developing Countries," *Journal of Political Economy* 65(1965), pp. 461-76.
- Frey, Bruno S., and Heinz Buhofer, "Integration and Protectionism: A Comparative Institutional Analysis," *Aussenwirtschaft* 40 (1986).
- Fries, Timothy, "Uncertainty as a Possible Rationale for Customs Unions," *Journal of International Economics* 17(1984), pp. 347-57.
- Johnson, Harry G., "The Cost of Protection and the Scientific Tariff," *Journal of Political Economy* 68(1960), pp. 327-45.
- Kanet, Roger E., "Integration Theory and the Study of Eastern Europe," *International Studies Quarterly* 18 (1974), pp. 368-92.
- Klein, Benjamin, "Transaction Cost Determinants of 'Unfair' Contractual Relations," *American Economic Review* 70 (1980), pp. 356-62.
- _____, Robert G. Crawford, and Armen A. Alchian, "Vertical Integration, Appropriable Rents, and the Competitive Contracting Process," *Journal of Law and Economics* 21 (1978), pp. 297-326.
- _____, and Keith Leffler, "The Role of Market Forces in Assuring Contractual Performance," *Journal of Political Economy* 89 (1981), pp. 615-41.
- Krauss, Melvyn B., "Recent Developments in Customs Union Theory: An Interpretive Survey," *Journal of Economic Literature* 10 (1972), pp. 413-36.
- Lipsey, R. G., "The Theory of Customs Unions: A General Survey," *Economic Journal* 70 (1960), pp. 496-513.
- MacBean, A. I., and P.N. Snowden, *International Institutions in Trade and Finance*, London, George Allen & Unwin, 1981.
- Mendes, A.J. Margues, "An Alternative Approach to Customs Union Theory," *Journal of International Economic Intergration* 1 (1986), pp. 43-58.

- North, Robert C., and Nazli Choucri, "Economic and Political Factors in International Conflict and Integration," *International Studies Quarterly* 27 (1983), pp. 443-61.
- O'Brien, Rita Cruise, and G.K. Helleiner, "The Political Economy of Information in a Changing International Economic Order," *International Organization* 34 (1980), pp. 445-70.
- Rugman, Alan M., *Inside the Multinationals*, New York, Columbia University Press, 1981.
- Sandler, Todd, and Jon Cauley, "The Design of Supranational Structures," *International Studies Quarterly* 21 (1977), pp. 251-76.
- Straubhaar, Thomas, "Conditions for Successful Integration among LDCs : A Graphical Presentation," *Journal of International Economic Integration* 2 (1987), pp. 29-40.
- Telser, Lester G., "A Theory of Self-enforcing Agreements," *Journal of Business* 53 (1980), pp. 27-44.
- Tsoulakis, Loukas, and Antonio de Silva Ferreira, "Managment of Industrial Surplus Capacity in the European Community," *International Organization* 34 (1980), pp. 355-76.
- Wallace, Michael D., "Clusters of Nations in the Global System, 1865-1964," *International Studies Quarterly* 19 (1975), pp. 67-88.
- Wiggins, Steven N., and Gary D. Libecap, "Oil Field Unitization : Contractual Failure in the Presence of Imperfect Information," *American Economic Review* 75 (1985), pp. 368-85.
- Williamson, Oliver E., "Credible Commitments : Using Hostages to Support Exchange," *American Economic Review* 73 (1983), pp. 519-40.
- _____, "The Economics of Governance : Framework and Implications," *Journal of Institutional and Theoretical Economics* 140 (1984), pp. 195-223.
- Yarbrough, Beth V., and Robert M. Yarbrough, "Specific Investment and Customs Unions : Relational Contracting in International Trade," Paper presented at the Annual Meeting of the Southern Economic Association, New Orleans, Louisiana, November 1986.
- _____, and _____, "Reciprocity, Bilateralism, and Economic 'Hostages' : Self-Enforcing Agreements in International Trade," *International Studies Quarterly* 30 (1986), pp. 7-21.
- _____, and _____, "Cooperation in the Liberalization of International Trade," *International Organization* 41 (1987), pp. 1-26.
- _____, and _____, "The Transactional Structure of the Firm," *Journal of Economic Behavior and Organization* 10 (1988), pp. 1-28.