

The World Trade Organization

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ABSTRACT

The success of the GATT/WTO as an international institution is widely acknowledged. Among multilateral institutions, the GATT/WTO has adopted a distinctive approach to serving as a forum for international negotiation. This approach is based on reciprocal negotiations (over market access) that occur on a voluntary basis between pairs of countries or among small numbers of countries, and the results of these bilateral negotiations are then “multilateralized” to the full GATT/WTO membership under the GATT/WTO principle of non-discrimination. In this entry I describe how recent economic research has attempted to understand and interpret these key design features of the GATT/WTO.

The World Trade Organization (WTO), and its predecessor the General Agreement on Tariffs and Trade (GATT), has in effect served as the constitution of the post-war international trading system.¹ Since 1947, membership in the GATT/WTO has grown from 23 countries to its present size of 149 countries, and average ad valorem tariffs on industrial goods have been reduced from over 40% to below 4% through eight multilateral rounds of negotiation (a ninth, the Doha Round, is currently ongoing).

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As an object of study, the GATT/WTO has attracted the attention of legal scholars since the late 1960s. But until relatively recently, the GATT/WTO has not been the subject of systematic and formal economic analysis. This might seem surprising, because the familiar economic arguments for free trade would seem to provide an obvious foundation for the economic analysis of the GATT/WTO. But this foundation immediately runs into a pair of impediments. First, the case for free trade is a unilateral case, and it therefore leaves no room for the existence of a trade agreement of any kind: from this

¹The GATT was created in 1947, and the WTO came into existence on January 1, 1995, as a result of the Marrakesh Agreement of April 1994, also known as the WTO Agreement. The WTO Agreement includes the text of GATT. Therefore GATT continues to exist as a substantive agreement, but the WTO Agreement also includes a set of additional agreements that build on and extend GATT principles to new areas. Hoekman and Kosteki (1995) provide an excellent institutional overview of GATT and the WTO.

starting point, the economic logic of the GATT/WTO is immediately suspect. And second, the liberalizing force that the GATT/WTO has harnessed does not appear to be the consumer gains that come from freer trade: rather, the GATT/WTO is driven by exporter interests. Traditionally, most economists have interpreted these observations as evidence that a mercantilist logic lies at the foundation of the GATT/WTO and that, as a result, economic analysis of the GATT/WTO is futile.

Recently, a growing body of theoretical and empirical literature has begun to challenge this view. There are two main branches of this literature.² A first branch (terms-of-trade theories) emphasizes the role of trade agreements in providing governments with an avenue of escape from a terms-of-trade driven Prisoners' Dilemma. A second branch (commitment theories) emphasizes the role of trade agreements in providing governments with a means of making commitments to their private sectors. Commitment theories of trade agreements have been developed by a number of authors, and there is also some empirical evidence that the GATT/WTO may play this role.³ But most of the literature to date adopts the terms-of-trade perspective. So I will focus this entry on interpreting and evaluating some of the key design features of the GATT/WTO from the perspective of terms-of-trade theories.⁴

All theories of trade agreements must identify a means by which the negotiating governments

²For recent attempts to articulate theories that would constitute a third branch, see Ethier (2006) and Regan (2006).

³See, for example, Conconi and Perroni (2003), Maggi and Rodriguez-Clare (1998, 2006), and Staiger and Tabellini (1987, 1999).

⁴Empirical evidence relating to the terms of trade theory of trade agreements is surveyed in Bagwell and Staiger (2002, Ch. 11). More recent evidence appears in Broda, Limao and Weinstein (2006) and Bagwell and Staiger (2006a).

can gain from the agreement. This entails identifying a “problem” that would arise absent an agreement, when governments make unilateral trade policy choices. The purpose of a trade agreement can then be viewed as providing a “solution” to the problem, so that the negotiating governments may share in the associated benefits. The terms-of-trade theory posits that governments can gain from negotiations by correcting the international inefficiencies that occur under unilateral trade policy choices as a result of international cost shifting. This cost shifting arises whenever the government of an importing country increases its import barriers and the prices received by foreign exporters fall as a result, thereby improving the importing country’s terms of trade. In this way, a portion of the cost of each government’s import protection is borne by foreigners, and as a consequence the unilateral best-response levels of import-protection chosen by each government are overly restrictive relative to internationally efficient levels: starting from its best-response (reaction curve) tariffs, each government can therefore gain by negotiating reciprocal liberalization with its trading partners. From the perspective of the terms-of-trade theory, then, the problem associated with unilateral trade policy choices is the cost-shifting that importing governments are able to achieve on to foreign exporters; and the purpose of negotiated trade agreements is to give foreign exporters (or their governments) a “voice” in the trade policy choices of importing governments, so that the “market access” that each country affords its trading partners can be expanded to internationally efficient levels.⁵

In this environment, internationally efficient policies can be achieved if each government agrees to adopt the policies it would have chosen had it “ignored” its ability to shift costs on to foreigners. Accordingly, internationally efficient levels of market access may be delivered under

⁵The link between the terms-of-trade theory of trade agreements and the emphasis on market access found in GATT/WTO discussions is identified and formalized in Bagwell and Staiger (2002, Chapter 2).

multilateral free trade, but only if all governments seek to maximize national income with their trade policy choices: when governments have broader (e.g. political/distributional) goals, international efficiency will generally *not* correspond to free trade. Nevertheless, according to the terms-of-trade theory, the purpose of a trade agreement remains the same independent of government objectives. This feature suggests that, despite the potential for wide diversity across the objectives of GATT/WTO member governments, the underlying structure of the cost-shifting problem central to the terms-of-trade theory may yield simple and robust insights concerning the logic of key design features of the GATT/WTO.

I now illustrate the basic structure of the international cost-shifting problem at the heart of the terms-of-trade driven Prisoners' Dilemma, and describe how it can account for two pillars of the GATT/WTO: reciprocity and non-discrimination. Broadly speaking, the principle of reciprocity in the GATT/WTO refers to the ideal of mutual changes in trade policy that trigger changes in the volume of each country's imports that are of equal value to changes in the volume of its exports. And according to the non-discrimination principle, a country must provide every other GATT/WTO member country with access to its markets on terms no less favorable than it provides the "most-favored" country: hence, under the non-discrimination principle, each GATT/WTO member country faces "most-favored-nation" (MFN) tariffs from all other GATT/WTO member countries.

I begin with reciprocity. The essential point can be understood from the perspective of a standard two-country/two-good competitive general equilibrium trade model, in which country *A* exports good *y* to country *B* in exchange for imports of good *x*. Following Bagwell and Staiger (1999,

2002), government preferences for the two countries can be represented very generally by the functions $W^i(p^i(\tau^i, \tilde{p}^w), \tilde{p}^w)$, where τ^i is one plus the ad valorem tariff in country $i \in \{A, B\}$, p^i is the relative price of good x to good y prevailing locally in country i , and \tilde{p}^w is the market-clearing “world” relative price or terms of trade, which is itself a function of the two tariffs $\tilde{p}^w(\tau^A, \tau^B)$. Under standard conditions \tilde{p}^w is decreasing in τ^A and increasing in τ^B , while p^A is increasing in τ^A and p^B is decreasing in τ^B . Aside from general concavity, the only condition that is imposed on government welfare functions is that $W_{\tilde{p}^w}^A < 0$ and $W_{\tilde{p}^w}^B > 0$, meaning that each government would like more tariff revenue, if it could have this without any change in its local prices (and therefore with out any change in the distribution or levels of factor incomes within its economy). Because no restrictions are placed on the way in which governments feel about changes in local prices, this representation of government preferences is general enough to include, in addition to the traditional Johnson (1953/54) national-income maximizing government, the leading models of political economy of trade protection (each of which effectively defines government preferences over redistribution and hence local prices).

The non-cooperative (Nash) tariffs chosen in this environment are defined by the two first-order conditions $W_{p^i}^i + \lambda^i W_{\tilde{p}^w}^i = 0$ for $i \in \{A, B\}$, where $\lambda^i \equiv [\partial \tilde{p}^w / \partial \tau^i] / [dp^i / d\tau^i] < 0$. Notice that international cost-shifting is embodied in the term $\lambda^i W_{\tilde{p}^w}^i$ which enters into the first-order conditions, and the presence of this cost-shifting term guarantees that $W_{p^A}^A < 0$ and $W_{p^B}^B > 0$ in the Nash equilibrium. The international efficiency frontier is defined by the (τ^A, τ^B) pairs from which it is not possible to adjust tariffs so as

to help one country without hurting the other according to the government preferences W^A and W^B .

Formally, this frontier takes the form $(1 - \Lambda^A W_p^A) = 1 / (1 - \Lambda^B W_p^B)$, where $\Lambda^A \equiv (1 - \tau^A \lambda^A) / (W_{p^A}^A + \lambda^A W_{\tilde{p}^w}^A)$

and $\Lambda^B \equiv (1 - \lambda^B / \tau^B) / (W_{p^B}^B + \lambda^B W_{\tilde{p}^w}^B)$. From these expressions, a pair of observations can now be

confirmed. First, the Nash tariff choices do not achieve the international efficiency frontier, and so there is indeed a “problem” for an international agreement to solve. And second, politically optimal

tariffs, defined by $W_p^i = 0$ for $i \in \{A, B\}$ and interpreted as the unilateral tariff choices governments would

make if they were not motivated by terms-of-trade considerations, do achieve the international efficiency frontier, and so politically optimal tariffs represent a complete “solution” to this problem.

From these observations an important conclusion can be drawn: even in the presence of politically/distributionally motivated governments, the purpose of a trade agreement is simply to prevent terms-of-trade manipulation.

From this backdrop, we may now ask the question: Why would the principle of reciprocity have appealing features? The answer, simply stated, is that reciprocity describes a fixed-terms-of-trade rule to which mutual tariff changes must conform;⁶ and in an environment where terms-of-trade manipulation is *the* problem to be fixed, a fixed-terms-of-trade rule is bound to have some attractive

⁶Formally, this can be seen following Bagwell and Staiger (1999, 2002). Define a set of tariff changes $\Delta \tau^A \equiv (\tau_1^A - \tau_0^A)$ and $\Delta \tau^B \equiv (\tau_1^B - \tau_0^B)$ as conforming to reciprocity whenever $\tilde{p}_0^w [M^A(p_1^A, \tilde{p}_1^w) - M^A(p_0^A, \tilde{p}_0^w)] = [E^A(p_1^A, \tilde{p}_1^w) - E^A(p_0^A, \tilde{p}_0^w)]$, where $\tilde{p}_0^w \equiv \tilde{p}^w(\tau_0^A, \tau_0^B)$, $\tilde{p}_1^w \equiv \tilde{p}^w(\tau_1^A, \tau_1^B)$, $p_0^A \equiv p^A(\tau_0^A, \tau_0^B)$ and $p_1^A \equiv p^A(\tau_1^A, \tau_1^B)$, and where M^A and E^A denote A’s imports and exports, respectively. Using balanced trade ($\tilde{p}^w M^A(p^A, \tilde{p}^w) = E^A(p^A, \tilde{p}^w)$), the condition for reciprocity simplifies to the fixed-terms-of-trade rule $[\tilde{p}_1^w - \tilde{p}_0^w] M^A(p_1^A, \tilde{p}_1^w) = 0$.

uses.⁷ Intuitively, the nature of international cost-shifting ensures that, beginning from their Nash tariff choices, each government would desire tariff liberalization and the greater trade volume that this would bring if this liberalization could be achieved at a fixed terms of trade \tilde{p}^w (i.e., recall from above that $W_p^A < 0$ and $W_p^B > 0$ at Nash). The principle of reciprocity can be understood to harness this desire, and so to activate efficiency-enhancing tariff-liberalizing forces in this environment.

I now turn to the non-discrimination principle, as embodied in MFN. This requires an extension of the basic two-country model described above to a three-country setting. To this end, let country C have a similar trading pattern to B, in that C also exports good x to country A in exchange for imports of good y . An important feature of the MFN rule is that, in requiring country A to impose a common tariff on imports of x regardless of whether these imports of x originate in exporting country B or C, this rule ensures that a single market-clearing terms of trade $\tilde{p}^w(\tau^A, \tau^B, \tau^C)$ will prevail, and government preferences may continue to be expressed with the simple representation $W^i(p^i(\tau^i, \tilde{p}^w), \tilde{p}^w)$ for $i \in \{A, B, C\}$. Notice that, in the presence of MFN, countries A and B can still negotiate a reciprocal reduction in their respective tariffs τ^A and τ^B that provides each with more trade volume at a fixed terms of trade \tilde{p}^w , thereby ensuring that they each gain relative to Nash; and strikingly, as long as A and B abide by reciprocity, there will be no third-party effects of their bilateral negotiation on country C, whose welfare level $W^i(p^C(\tau^C, \tilde{p}^w), \tilde{p}^w)$ remains unaltered owing to the unchanged τ^C and the fixed

⁷Bagwell and Staiger (2002, Ch. 4) describe and interpret a number of ways in which the principle of reciprocity appears in the GATT/WTO.

terms of trade \tilde{p}^w .⁸ Of course, A and C can engage in bilateral reciprocal negotiations that have the same property. This has an important implication: the MFN rule permits the liberalizing force of reciprocity to be harnessed in an essentially bilateral manner even in a multilateral world.⁹

In this general manner, the GATT/WTO pillars of reciprocity and non-discrimination can be understood to underpin the architecture of an international negotiating forum in which the liberalizing force of reciprocity can be harnessed in bilateral negotiations with an assurance of minimal third-party spillovers, thereby permitting each member-government – through a sequence of bilateral or small-numbers negotiations – to engineer its escape from a terms-of-trade driven Prisoners' Dilemma.

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⁸For C's welfare to remain unchanged, it is in fact not necessary that τ^C remain unchanged, but only that C remain on its tariff reaction curve and that \tilde{p}^w remain unchanged (see Bagwell and Staiger, 2006b).

⁹These and related points are developed in Schwartz and Sykes (1997) and Bagwell and Staiger (2005, 2006b).

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