

MULTILATERAL TRADE BARGAINING: A FIRST LOOK AT THE GATT BARGAINING RECORDS*

Kyle Bagwell[†] Robert W. Staiger[‡] Ali Yurukoglu[§]

June 2019

Abstract

This paper empirically examines recently declassified tariff bargaining data from the GATT/WTO. Focusing on the Torquay Round (1950-51), we document stylized facts about these interconnected high-stakes international negotiations that suggest a lack of strategic behavior among the participating governments and an important multilateral element to the bilateral bargains. We suggest that these features can be understood as emerging from a tariff bargaining forum that emphasizes the GATT pillars of MFN and multilateral reciprocity, and we offer evidence that the relaxation of strict bilateral reciprocity facilitated by the GATT multilateral bargaining forum was important to the success of the GATT approach.

*This paper has benefited from the very helpful comments of the Editor and two anonymous referees. We thank the NSF (Grant SES-1326940) and SEED for financial support, and Sushan Demirjian, Diwakar Dixit, Judy Goldstein, Anwarul Hoda, Lee Ann Jackson, Amelia Porges, William Powers and Suja Rishikesh for very helpful discussions related to various aspects of this project. We are especially grateful to Ambassador Julio Lacarte Muró for patiently answering our many questions about the mechanics of the early GATT rounds. We also thank Jakub Kastl, Nuno Limao, Marcelo Olarreaga, Marzena Rostek, Michele Ruta and seminar participants at Berkeley, Dartmouth, Georgetown, Indiana, Maryland, Princeton, Stanford, UBC, Yale and The World Bank as well as participants at the Dartmouth-SNU conference on International Trade Policy and Institutions, the NBER 2015 ITI Summer Institute and the Villars Research Workshop on the Economics of International Trade Agreements for very helpful comments. Patricia Abbott, Ohyun Kwon, Ayako Obashi, Woan Foong Wong and Junhui Zeng provided outstanding research assistance, as did Joanna Yeo, Zhufei Shi, and especially Elizabeth Stone on earlier phases of the data processing portion of this project. Bagwell thanks CASBS at Stanford for support and hospitality.

[†]Bagwell: Department of Economics, Stanford University, Stanford CA 94305; and NBER (email: kbagwell@stanford.edu).

[‡]Staiger: Department of Economics, Dartmouth College, Hanover NH 03755; and NBER (email: rstaiger@dartmouth.edu).

[§]Yurukoglu: Graduate School of Business, Stanford University, Stanford CA 94305; and NBER (email: ayurukog@stanford.edu).

1. Introduction

The World Trade Organization (WTO) and its predecessor the General Agreement on Tariffs and Trade (GATT)¹ have presided over the largest and most sustained negotiated trade liberalization in history. Yet challenges remain, as evidenced by the now-suspended Doha Round of multilateral trade negotiations. This paper introduces and empirically analyzes detailed negotiation data, recently declassified by the WTO, to understand the nature of tariff bargaining in the world trading system. Understanding these high stakes international negotiations is important for addressing the challenges facing modern trade agreements at the same time that it contributes to economists' understanding of bargaining more generally.

GATT/WTO tariff negotiations display several notable features. The negotiations are a form of barter, whereby governments accept commitments on their own import tariffs in exchange for the reciprocal tariff commitments of their principal trading partners. For each round a specific bargaining protocol is adopted, with explicit rules for the timing of events, the kinds of interactions expected and the exchange of information among participants. And though it is a multilateral institution, for the most part the GATT/WTO has adopted a bilateral approach to multilateral tariff bargaining according to which reciprocal “request-offer” negotiations occur on a voluntary basis between pairs of countries at the tariff-line level, with the results of these bilateral negotiations then “multilateralized” to the full GATT/WTO membership by a non-discrimination requirement that tariffs abide by the most-favored nation (MFN) principle, according to which imports of the same product from different countries face the same (MFN) treatment in a given market.

In this paper we focus on the Torquay Round (1950-51), where over a 10 month period 298 separate bilateral negotiations among the 37 participating countries covering thousands of tariff-line products took place. We document three stylized facts about these negotiations. First (Stylized Fact 1), the numbers of back-and-forth offers and counteroffers in any bilateral bargain were relatively small, and once the initial proposals were on the table, the focus of bargaining narrowed to each country's own-tariff-cut offers, and countries responded to imbalances in the outstanding offers by adjusting their own offers rather than by adjusting their requests of others. Second (Stylized Fact 2), adjustments in offers typically took a simple and striking

¹The GATT was created in 1947, and it sponsored a total of eight multilateral negotiating rounds through 1994. With the conclusion of the eighth (Uruguay) round, the WTO came into existence on January 1, 1995, and it includes the GATT and a set of additional agreements that extend GATT principles to new areas.

form. Specifically, offers for given import products were rarely deepened over the course of the negotiations. Instead, adjustments typically involved a country “shopping around” its initial tariff-cut offers and ultimately reducing as necessary the depth of its overall (multilateral) offer. And when a country chose to reduce the depth of its offers, it did so with adjustments on the “extensive margin” (i.e., by removing products from its offers), not on the “intensive margin” (i.e., by lowering the level of the tariff cuts that it offered). Finally (Stylized Fact 3), initial offers sometimes sat dormant for long periods only to be finalized with a single modification at the time that other bargains were concluded.

These stylized facts lend support to two features that are emphasized by GATT practitioners and legal scholars as hallmarks of the tariff bargaining that occurred in the early GATT rounds. A first feature is the lack of strategic behaviors, such as “lowball” initial offers, among the participating governments, as emphasized for example by Curzon (1966); this feature is supported by Stylized Fact 1 and Stylized Fact 2. A second feature is the presence of an important multilateral element to the bilateral bargains, as emphasized for example in the early GATT report issued as ICITO (1949); this feature is suggested by Stylized Fact 3.

We suggest that these features can be understood as emerging from a tariff bargaining forum that emphasizes the GATT pillars of MFN and multilateral reciprocity. To support this claim, we describe a theoretical and institutional framework, adopting the perspective of the terms-of-trade theory of trade agreements (see Bagwell and Staiger, 2010a, for a recent review of the central features of this theory). On top of this basic theory, we layer the institutional features of reciprocity and MFN.² MFN requires that any concession granted in a bilateral negotiation be extended unconditionally to the other members of GATT. Reciprocity, applied either at the bilateral or the multilateral level, requires that equilibrium agreements increase export volume for a given country by the same value as the increase in its import volume, and prevents terms-of-trade changes as a result of the agreement.

We provide an interpretation of these features through the lens of our theoretical and institutional framework: under this interpretation, a country would propose for a given import product the tariff that generated its preferred trade volume for a fixed terms of trade, with the expectation that any subsequent “rebalancing” of offers necessary for multilateral reciprocity would arise later in the round after all offers had been recorded and that this might lead to a

²As we discuss further in section 2, the theoretical foundations for our analysis of multilateral trade bargaining under MFN and reciprocity are formally established in Bagwell and Staiger (2018).

reduction in the depth of its overall (multilateral) offer. We argue that this behavior is broadly consistent with that expected in our framework, if governments made dominant-strategy proposals under the strict institutional constraints of MFN and multilateral reciprocity.

Finally, we explore further the importance of multilateral elements in the bargains, and offer evidence that the relaxation of strict bilateral reciprocity facilitated by the GATT multilateral bargaining forum was important to the success of the GATT approach, a view that was emphasized in the GATT report ICITO (1949). For this purpose, we focus on the breakdown of the bilaterals between the US on the one hand, and the UK and its Commonwealth partners Australia and New Zealand on the other, that occurred midway through the round. We test whether, after this breakdown, the offers on the table in the remaining bilaterals between each of these four countries and third parties were adjusted to compensate for the disappearance of the indirect benefits from the US-UK, US-Australia and US-New Zealand bilaterals that third parties might have expected if bilateral bargains exhibited multilateral but not bilateral reciprocity. Our findings support this view: the adjustments in offers subsequent to these breakdowns are consistent with the kind of rebalancing that would be required to reestablish multilateral reciprocity after such a breakdown, as these four countries re-oriented their offers toward the rest of the participants at Torquay at the same time that the rest of the participants at Torquay were re-orienting their offers away from these four countries.

Our paper is related to several literatures. Recent papers in international trade have asked whether there is empirical support for the terms-of-trade theory of trade agreements (e.g., Broda, Limao and Weinstein, 2008, Bagwell and Staiger, 2011, Ludema and Mayda, 2013, Bown and Crowley, 2013), whether reciprocity is a feature of tariff bargaining outcomes (e.g., Limao, 2006, 2007, Karacaovali and Limao, 2008), and whether MFN creates a free-rider problem for trade negotiations (e.g., Ludema and Mayda, 2009, 2013). And economic historians and political scientists have long debated what made GATT special as an institution for promoting trade liberalization (e.g., Irwin, 1995, and Gowa and Kim, 2005). Our paper provides evidence on each of these questions, but for the first time from the perspective of actual tariff bargaining data.

In the context of the empirical bargaining literature, a handful of papers empirically examine bilateral bargaining with not just outcome data, but detailed offer and counter-offer data. These include Keniston (2013) and Larsen (2014). In these settings, bilateral negotiations do not affect payoffs of parties not involved in the bargain. In parallel, there is an emergent literature in

industrial organization empirically examining bilateral bargaining with externalities using data on only outcomes as in Crawford and Yurukoglu (2012). Our paper is unique in looking at detailed offer and counter-offer data in a setting of bilateral bargaining with externalities. And we make particular use of the availability of the offer and counter-offer data, both in providing support for the interpretation that governments made dominant-strategy proposals under the strict institutional constraints of MFN and multilateral reciprocity, and in our examination of counter-offer responses to breakdowns in bilaterals for evidence of multilateral as opposed to bilateral reciprocity at Torquay.

The remainder of the paper proceeds as follows. We describe the GATT bargaining protocols in section 2, and in section 3 we discuss the broad features of the GATT bargaining data. In section 4 we present the modeling framework that we will use to interpret stylized facts of the Torquay tariff negotiations. In section 5 we present the stylized facts of GATT tariff bargaining at Torquay and offer an interpretation of these stylized facts from the lens of our modeling framework. We present our empirical investigation into multilateral versus bilateral reciprocity in section 6. Section 7 concludes.

2. The GATT Bargaining Protocols

We begin by describing the GATT bargaining protocols. The first five GATT rounds adopted the approach of selective product-by-product MFN tariff negotiations on a bilateral request-offer basis, as did to varying degrees the eighth GATT (Uruguay) round and the currently suspended WTO (Doha) round. The object of negotiation was the tariff “binding,” a legal maximum level above which a country agrees not to raise its tariff. As Hoda (2001) explains, the protocols for the first five rounds were broadly similar:

Each round began with the adoption of a decision convening a tariff conference on a fixed future date. The decision required the contracting parties to exchange request lists and furnish the latest edition of their customs tariffs and their foreign trade statistics for a recent period well in advance of the first day of the conference and the offers had to be made on the first day. The negotiations were concluded generally over a period of six to seven months after the offers had been made...These negotiations were essentially bilateral between pairs of delegations. (pp. 44-45)

For the most part, the initial lists of requested tariff cuts were common knowledge (circulated among all participating governments) in each of the first five rounds, while the back-and-forth offers and counteroffers that transpired within each bilateral were known only to the governments in that bilateral, until the GATT Secretariat was informed that an outcome for that bilateral (success or failure) had been achieved, at which point the details of successful bilaterals became common knowledge. Tariffs agreed in a bilateral would apply on a non-discriminatory basis to exports from any GATT-member country through the MFN principle.

General Objectives and the Nature of Negotiations The protocols all included a statement of objectives (“...to bring about the substantial reduction of tariffs and the elimination of tariff preferences”), and a description of the nature of negotiations which emphasized balance in the negotiations and the flexibility to maintain tariffs at individually preferred levels. For example, the protocol for the initial 1947 GATT round in Geneva stated that

...tariff negotiations shall be on a ‘reciprocal’ and ‘mutually advantageous’ basis. This means that no country would be expected to grant concessions unilaterally, without action by others, or to grant concessions to others which are not adequately counterbalanced by concessions in return

The elimination of tariff preferences (mainly those of the British Commonwealth system) was also emphasized in the early GATT protocols; and it was anticipated that negotiated reductions in MFN tariffs would be the main engine for achieving this goal.³

Principal Supplier Rule All protocols envisaged that the selective product-by-product tariff negotiations would proceed according to the “principal supplier” rule. In the protocol for the initial 1947 GATT Round in Geneva which was held among 23 member countries of the (Havana Charter) Preparatory Committee, the principal supplier rule was defined:

It is generally agreed that the negotiations should proceed on the basis of the ‘principal supplier’ rule, as defined in this paragraph. This means that each country would be expected to consider the granting of tariff or preference concessions only on products of which the other members of the Preparatory Committee, are, or are likely to be, principal

³In addition, in order to avoid the problem of MFN “bargaining tariffs” raised on the eve of a round for bargaining purposes, each protocol contained rules against such conduct.

suppliers... In other words, if a principal part of total imports of a particular product into the territory of a particular member is supplied by the other members of the Preparatory Committee taken together, then the importing member should, as a general rule, be willing to include that product in the negotiations, even though no single other member of the Committee, taken by itself, supplies a principal part of the total imports of the product.

Extensive Form of Negotiations The protocols described procedures for conducting negotiations which amounted to a four stage process. At a broad level, these procedures were described in greatest detail in the protocol for the initial 1947 GATT Round in Geneva, though as we explain further below there was some evolution in particular features of these procedures across rounds. The protocol for the 1947 round stipulated the following timing:

1. Prior to the opening of talks, each participating country transmits lists of requests of product-level concessions it seeks from each other participating country.
2. At the opening of talks, each country submits lists of product-level concessions it would offer to each other participating country given the requests it has made of them.
3. Pairs of countries negotiate directly over concessions of primary concern between those two countries. This is effectively simultaneous interconnected bargaining.
4. As bilateral agreements are reached, third-party countries can examine the agreements, and potentially modify their own agreements in response.

Later rounds evolved along several specific dimensions. In particular, the rules on sharing information about initial offers (the second stage of the 1947 protocol) evolved somewhat from round to round.⁴ But by the 1950-51 Torquay Round, the emphasis on sharing initial (second stage) offers among participants seems to have disappeared. The Torquay protocol states:

On September 28, 1950 – that is, on the first day of the meeting in Torquay – each government should be ready to make known the concessions it is prepared to offer to each government from which a request for concessions is received...When the offers have been exchanged, negotiations between pairs of delegations will begin.

⁴For example, the protocol for the 1949 Annecy Round suggests that initial offers, like the initial requests, were to be common knowledge.

The GATT Bargaining Records An important question is the degree to which the GATT bargaining records provide a complete catalog of every offer and counteroffer that was tendered in a round. It is clear that these records represent a complete list of the initial offers that each country made to every other country, and a complete list as well of the final agreed tariff commitments that came out of each bilateral. Hence, at a minimum the GATT bargaining records provide an accurate view of where each bilateral bargain started, where it ended up, and the elapsed time from start to finish. What is less clear is whether the official record provides a complete catalog of the back-and-forth counteroffers that occurred between the initial offers and the final outcome.

While it would be implausible to expect that there was no communication outside of the official counteroffers included in the GATT bargaining records, at least for the earlier rounds there are two reasons to believe that the records offer a fairly complete catalog of the tendered counteroffers. First, in older rounds such as the Torquay Round that predated the ready use of electronic records and portable computing devices, a written record of the detailed product-level bilateral tariff cutting proposals – proposals which typically included dozens if not hundreds of product-level tariff cuts to be considered – was the only way that a proposal or counter-proposal could be offered and assessed. Second, the final bargaining outcomes in the GATT bargaining records predominantly emerge in a continuous fashion from the recorded requests, offers and counteroffers, rather than appearing in the final agreement as a never-before-recorded proposal – for example, 95% of the exact tariff bindings to which the US ultimately agreed in the Torquay Round first appear in the US-Torquay bargaining records as either requests by US bargaining partners or as earlier US offers to some bargaining partner – which is consistent with the lack of important informal proposals being tendered outside of the recorded counteroffers.

There are a number of significant challenges that must be overcome before the GATT bargaining data can be used for research. The Online Data Appendix covers these issues in detail. The most challenging issue concerned creating product level concordances across negotiations. Our solution was to concord product level descriptions into HS 1988 6-digit codes. We henceforth refer to an HS6 code as a product.

3. An Overview of the Torquay Round Negotiations

We next present a helicopter view of the Torquay Round negotiations. Here we describe the number of parties and the timing and frequency of their actions.

There were 39 participating countries in the Torquay Round, accounting for well over 80 percent of world trade as of 1949 (see, for example, US Department of State, 1951, p. 1).⁵ However, the Benelux (Belgium, Luxembourg and the Netherlands) customs union negotiated its common external tariffs as a single entity, reducing the total number of parties negotiating at Torquay to 37. Of the 666 possible bilaterals, 298 were initiated, and of these, 148 bilaterals were successfully concluded (i.e., led to agreed tariff commitments). Our dataset includes 292 of the 298 bilaterals initiated at Torquay.⁶ A table of summary statistics about bargaining activity and tariffs by country is included in our Online Appendix.

Table 1 presents gravity-style regressions describing how bargaining activity correlates with the distance between countries and the gross domestic product of countries. Across all types of bargaining activity – that is, in making requests for concessions, in offering concessions, or in agreeing to concessions – distance is negatively correlated with the number of products on which there is bargaining activity, and GDP levels of both the proposing country and target are positively correlated.

In Figure 1 we represent a summary game tree for the Torquay Round, beginning from the “opening of talks” on September 28 1950 when countries first began to exchange initial offers (that is, we exclude from the tree the “request” stage prior to the opening of talks). The tree in Figure 1 abstracts from the multilateral aspects of negotiations by collapsing the 292 simultaneous bilaterals at Torquay into a single representative bilateral, with representative countries 1 and 2 having alternating opportunities to take an action, where the action may be an offer to cut one’s tariffs (O), a modification of an offer (OM), a modification of a previous request that the bargaining partner cut its tariffs (RM), an agreement to cut one’s tariffs (A), a modification of an agreement (AM), or the possibility of taking no action at that time (ϕ).⁷ On each branch of the tree we record the number of bilaterals along that branch (the first number in

⁵We count as participating any country that made a formal request or offer to or received a formal request or offer from at least one country in the context of the Torquay Round. The participating countries were Australia, Austria, Benelux Countries (Belgium, Luxembourg, Netherlands), Brazil, Burma, Canada, Ceylon, Chile, Cuba, Czechoslovakia, Denmark, Dominican Republic, Finland, France, Germany, Greece, Guatemala, Haiti, India, Indonesia, Italy, Korea, Liberia, New Zealand, Nicaragua, Norway, Pakistan, Peru, Philippines, Southern Rhodesia, Sweden, Syria-Lebanon, Turkey, South Africa, United Kingdom, United States and Uruguay. Of these, six were negotiating for accession at Torquay: Austria, Germany, Korea, Peru, Philippines and Turkey.

⁶Of the 298 bilaterals initiated at Torquay, 6 involved Burma (Myanmar) and these GATT bargaining records currently remain restricted so they are excluded from our dataset (these bilaterals did not progress past the request stage, and amounted to requests of Burma made by Canada, Czechoslovakia, Denmark, France, Norway and Sweden), bringing the total number of initiated bilaterals in our dataset to 292.

⁷Hence, two nodes connected by a line labeled “ ϕ ” indicate that a country moved twice before its bargaining partner responded.

parentheses), the mean number of products in play per bilateral along that branch (the second number in parentheses), and the mean of the proposed tariff divided by the pre-existing tariff along that branch (the third number in parentheses). Finally, a terminal node labeled “Y” indicates that this branch of the tree ends in a set of final agreed tariff commitments, while a terminal node labeled “N” indicates that this branch of the tree ends in no agreement.⁸

Beginning from the top of Figure 1, the initial left branch of the tree depicts immediate agreement that occurred (subsequent to requests, not shown) for a number of the countries that were negotiating for accession during the Torquay Round; the main initial branch of the tree is the right branch, which depicts a sequence of offers (O) and counteroffers (OM, RM) that led either to failed bilaterals (terminal node N) or to agreements (A, AM) and ultimate success (terminal node Y). As the branches of the tree in Figure 1 reveal, the majority of offers and counteroffers are concluded in a small number of alternating steps, and most terminal nodes are reached in a small number of steps after that. But there are also some longer branches that reflect more extensive sequences of offers and counteroffers and/or modifications of agreements. The mean proposed tariffs vary somewhat across the branches of the tree, and the same is true proceeding down a given branch, but there is no obvious pattern in the proposed tariffs across branches of the tree and the within-branch changes are often non-monotonic.

Finally, we zoom in on the US to provide a view of the Torquay Round from the perspective of an individual country and the bilaterals in which it is directly involved. The US was engaged in bilateral negotiations with 24 of its 36 potential negotiating partners.⁹ It reached final agreement with 15 of these countries. In Figure 2 we display an overview of the timing and actions – request (R), modification of request (RM), offer (O), modification of offer (OM), withdrawal of offer (OW), agreement (A) and modification of agreement (AM) – for each of the 24 bilateral negotiations involving the US at Torquay. Time is recorded on the horizontal axis in weekly intervals. For each US negotiating partner listed on the vertical axis, the bottom (blue) line displays the actions relating to the US tariff – the offers by the US and the requests coming from its negotiating partners – while the top (red) line displays the actions relating to the foreign negotiating partner’s tariff – the requests by the US and the offers of its negotiating partners. According to Figure 2, there were 57 dates across the 10 month period of the Torquay

⁸Entries in parentheses just prior to an agreement or a terminal node are omitted in Figure 1 when they are unchanged from the entry in the preceding action.

⁹The countries present at Torquay with which the US did not negotiate were Burma, Ceylon, Chile, Finland, Greece, Liberia, Nicaragua, Pakistan, Philippines, Southern Rhodesia, Syria-Lebanon and Uruguay.

Round on which the US and/or at least one of its negotiating partners took an action in their bilateral. Most of the dates involve multiple actions across a number of bilaterals.

4. A Framework for Interpreting GATT Tariff Negotiations

It is not self-evident how one can make sense of even the most basic features of tariff bargaining. Why do trade negotiators view own-tariff cuts as “concessions” to be granted only in return for foreign tariff cuts for their exporters? What do governments have to gain from bargaining over tariffs anyway? We begin this section by sketching a basic modeling framework that highlights the terms-of-trade externality associated with unilateral tariff choices and provides answers to these questions. We then augment this framework with the addition of a tariff bargaining forum built on reciprocity and MFN, the pillars of the GATT architecture, and we describe the nature of tariff bargaining within this institutional setting. As we confirm in later sections, our augmented framework yields predictions that can help interpret some of the key stylized facts of GATT tariff bargaining at Torquay. Our discussion is brief and in places paraphrases the treatment in Bagwell and Staiger (2010a). Additional details are also available in the Online Appendix.

4.1. The Purpose of a Trade Agreement

A Model Two-Country World Economy To begin, we describe a two-country model of the world economy. Two countries, domestic (no *) and foreign (*), trade two goods which are normal in consumption and produced in perfectly competitive markets under conditions of increasing opportunity costs. We let x (y) denote the natural import good of the domestic (foreign) country. The local relative price facing domestic (foreign) producers and consumers is defined as $p \equiv p_x/p_y$ ($p^* \equiv p_x^*/p_y^*$). Tariffs are non-prohibitive, and the domestic (foreign) ad valorem import tariff is t (t^*). Letting $\tau \equiv (1 + t)$ and $\tau^* \equiv (1 + t^*)$, we then have that $p = \tau p^w \equiv p(\tau, p^w)$ and $p^* = p^w/\tau^* \equiv p^*(\tau^*, p^w)$, where $p^w \equiv p_x^*/p_y$ is the “world” (i.e., untaxed) relative price. The foreign terms of trade is given by p^w , and the domestic terms of trade is $1/p^w$. We interpret $\tau > 1$ as an import tax and similarly for τ^* .

In each country, production levels for x and y are determined by the local relative price. Consumption is also influenced by the local relative price, which defines the trade-off faced by consumers and determines the level and distribution of factor income, but depends as well on tariff revenue, which is distributed lump-sum to domestic consumers. Within any country, the

tariff revenue that is consistent with the consumption that it induces can be represented as a function of local and world prices, where under our assumption of normal goods a country's tariff revenue increases with its terms of trade. National consumption can thus also be expressed as a function of local and world prices.

It follows that a country's import and export functions can likewise be expressed as a function of local and world prices. Let $M(p, p^w)$ and $E(p, p^w)$ respectively represent the import and export functions for the domestic country, with $M^*(p^*, p^w)$ and $E^*(p^*, p^w)$ defined similarly for the foreign country. For any prices, the domestic and foreign budget constraints are represented by the trade-balance equations:

$$p^w M(p, p^w) = E(p, p^w), \text{ and } M^*(p^*, p^w) = p^w E^*(p^*, p^w). \quad (4.1)$$

The equilibrium world price, $\widehat{p}^w(\tau, \tau^*)$, is the value of p^w that clears the market for good y :

$$E(p(\tau, p^w), p^w) = M^*(p^*(\tau^*, p^w), p^w), \quad (4.2)$$

where we make explicit in (4.2) the functional dependencies for local prices. Market clearing for good x is assured by (4.1) and (4.2).

We assume $dp/d\tau > 0 > dp^*/d\tau^*$ and $\partial\widehat{p}^w/\partial\tau < 0 < \partial\widehat{p}^w/\partial\tau^*$, thereby ruling out the Metzler and Lerner paradoxes, and with the final two inequalities indicating that each country is "large" (i.e., each country can improve its terms of trade by increasing its tariff).

Government Preferences The traditional approach to representing government preferences is to impose the assumption that governments maximize national income; by contrast, in the political-economy approach, governments are also motivated by distributional concerns. Here, we follow Bagwell and Staiger (1999, 2002) and adopt a general approach to modeling government preferences, representing the objectives of the domestic and foreign governments with the general functions $W(p, \widehat{p}^w)$ and $W^*(p^*, \widehat{p}^w)$, respectively. We thus represent welfare in terms of the prices that the tariffs induce rather than directly in terms of the tariffs.

We place no restrictions on government preferences over local prices. With the level and distribution of factor incomes determined by local prices, we therefore accommodate a wide range of political motivations. We assume only that, holding its local price fixed, each government is pleased when its terms of trade improve: $W_{\widehat{p}^w} < 0 < W_{\widehat{p}^w}^*$. The meaning of this assumption with regard to the underlying tariff changes is that a government values the international income transfer that is implied by an increase in its own tariff and a decrease in

the tariff of its trading partner that together leave its local price unaltered. As Bagwell and Staiger (1999, 2002) discuss, governments maximize welfare functions of this form in both the traditional approach and in the leading political-economy approaches to trade policy.

Unilateral Policies To analyze optimal unilateral (non-cooperative) policies, we suppose that each government sets its tariff policy to maximize its welfare, for any given tariff choice of its trading partner. The associated tariff reaction curves are defined implicitly by

$$W_p + \lambda W_{\tilde{p}^w} = 0, \text{ and} \quad (4.3)$$

$$W_p^* + \lambda^* W_{\tilde{p}^w}^* = 0, \quad (4.4)$$

where $\lambda \equiv [\partial \tilde{p}^w / \partial \tau] / [dp / d\tau] < 0$ and $\lambda^* \equiv [\partial \tilde{p}^w / \partial \tau^*] / [dp^* / d\tau^*] < 0$. As these expressions highlight, the best-response tariff of each government strikes a balance between the effects on its welfare of the local- and world-price movements induced by its tariff choice.¹⁰

The welfare implications of the local-price movement in the first term of (4.3) are domestic in nature: they reflect the trade-off for the domestic government between the costs of the induced economic distortions and the benefits of any induced political support. By contrast, the welfare implications of the world-price movement in the second term of (4.3) are international in nature: they reflect the benefits to the domestic government of shifting some of the costs of its policy choice onto the foreign government. Cost shifting occurs, since any improvement in the domestic country's terms of trade is a deterioration in the foreign country's terms of trade. We may similarly interpret (4.4) for the foreign government.

In a Nash equilibrium, both governments are on their reaction curves, and a Nash equilibrium tariff pair (τ^N, τ^{*N}) thus satisfies (4.3) and (4.4). We take this equilibrium to represent the trade-policy decisions that governments would make if there were no trade agreement.

Trade Agreement Governments value a trade agreement if it leads to changes in trade policies that generate Pareto improvements for governments relative to their welfare in the Nash equilibrium. Thus, a trade agreement is potentially valuable if and only if the Nash equilibrium is inefficient, when efficiency is measured relative to government preferences.

Three observations can be stated.¹¹ First, Nash tariffs are indeed inefficient. Second, both governments can gain relative to Nash only if each agrees to set its tariff below its Nash level.

¹⁰We assume throughout that the second-order conditions for any maximization problem hold globally.

¹¹Formal proofs of these observations can be found in Bagwell and Staiger (1999, 2002).

Intuitively, when a government contemplates an increase in its unilateral tariff, it foresees an improvement in its terms of trade; thus, it is in part motivated by the prospect of shifting some of the costs of the tariff hike onto its trading partner. The incentive to shift costs naturally leads governments to set tariffs that are higher than is efficient. As a consequence, a mutually beneficial agreement *must* involve the exchange of tariff-cut concessions by the governments, providing an answer to the first question posed above.

To see if the terms-of-trade externality is the only reason for the inefficiency of Nash tariffs, consider a hypothetical world in which governments are not motivated by the terms-of-trade implications of their unilateral trade-policy choices, that is, a hypothetical non-cooperative setting in which $W_{\tilde{p}^w} \equiv 0$ and $W_{\tilde{p}^w}^* \equiv 0$. Next define the “domestic politically optimal reaction curve” by $W_p = 0$, the “foreign politically optimal reaction curve” by $W_{p^*} = 0$, and the *politically optimal tariffs* as any tariff pair (τ^{PO}, τ^{*PO}) that satisfies the first-order conditions $W_p = 0$ and $W_{p^*} = 0$. The third observation is that politically optimal tariffs are efficient (when evaluated with actual government preferences): the terms-of-trade externality is in this sense the sole rationale for a trade agreement in this modeling framework. Hence, the gains from tariff bargaining come from the ability to eliminate the inefficient terms-of-trade driven motives from unilateral tariff choices, providing an answer to the second question posed above.

The politically optimal tariffs are not the only efficient tariffs. In the special case where governments maximize national welfare, efficient tariffs satisfy $\tau = 1/\tau^*$ (as Mayer, 1981 shows) and politically optimal tariffs correspond to reciprocal free trade (i.e., $\tau = \tau^* = 1$), a point on the Mayer locus. A trade agreement enables governments to move from the inefficient Nash tariffs to some point on the contract curve, where the contract curve is that portion of the efficiency frontier on which neither government receives below-Nash welfare. The politically optimal tariffs lie on the contract curve, provided that the countries are not too asymmetric.

Interdependence in a Multilateral World We next extend the modeling framework to a three-country setting, in order to consider the interdependence across pairs of countries that arises in a multilateral world and how the MFN principle shapes this interdependence.

The domestic country now exports good y to two foreign countries, ‘*1’ and ‘*2,’ and imports good x from each of these countries (who do not trade with each other). Each foreign country can impose a tariff on its imports of good y from the domestic country (we denote the tariff of foreign-country i by τ^{*i}), while the domestic country can set tariffs on its imports of good

x from the two foreign countries. If the domestic country applies the tariff τ^1 to imports from foreign-country 1 and the *discriminatory* tariff $\tau^2 \neq \tau^1$ to imports from foreign-country 2, then separate world prices p^{w1} and p^{w2} apply to its trade with foreign-countries 1 and 2 respectively. This follows because there can only be one local price in the domestic economy, and the pricing relationships $p = \tau^1 p^{w1}$ and $p = \tau^2 p^{w2}$ then imply $p^{w1} \neq p^{w2}$ whenever $\tau^1 \neq \tau^2$.

The MFN rule imposes a very simple non-discrimination requirement: $\tau^1 = \tau^2 \equiv \tau$. An important implication of the MFN rule is then that a single equilibrium world price, $\widehat{p}^w(\tau, \tau^{*1}, \tau^{*2})$, must prevail; consequently, we may continue to express government preferences with the simple representation $W(p, \widehat{p}^w)$, $W^{*1}(p^{*1}, \widehat{p}^w)$ and $W^{*2}(p^{*2}, \widehat{p}^w)$, where $p = \tau p^w \equiv p(\tau, p^w)$ and $p^{*i} = p^w / \tau^{*i} \equiv p^{*i}(\tau^{*i}, p^w)$, $i = 1, 2$. In line with the two-country model, we assume that the function \widehat{p}^w as defined here is decreasing in τ and increasing in τ^{*1} and τ^{*2} .

In a multilateral world, the MFN principle therefore ensures that the international externality at the root of the problem to be solved by a trade agreement continues to exhibit the same structure as in the simpler 2-country setting. At the same time, as the equilibrium world price function $\widehat{p}^w(\tau, \tau^{*1}, \tau^{*2})$ indicates, each country's welfare will be impacted by the tariff choices of the remaining two countries if these tariff choices impact the world price. Bilateral MFN tariff bargains will therefore in general impose externalities on third countries, pointing to a potentially important multilateral dimension associated with such bargains.¹²

4.2. Tariff Bargaining under Reciprocity and MFN

Reciprocity and MFN are pillars of the GATT/WTO architecture. We now show that these institutional constraints can dramatically simplify the tariff bargaining problem. First, building on the two-country model, we describe how strict adherence to reciprocity simplifies strategic considerations and results in a dominant bargaining strategy. Second, building on the three-country version of the model, we confirm that strict adherence to reciprocity and MFN neutralizes third-party externalities. These findings provide a possible interpretation of the first two stylized facts of GATT tariff bargaining that we present below. Finally, anticipating the third stylized fact that we present below, we examine the relationship between bilateral and multilateral reciprocity when MFN is satisfied.

¹²Without MFN, there would also be potentially important multilateral dimensions associated with any bilateral (discriminatory) tariff bargain, but the spillovers would be different (see Bagwell and Staiger, 2005).

Reciprocity The GATT/WTO principle of reciprocity refers to the ideal of mutual changes in trade policy which bring about changes in the volume of each country’s imports that are equal in magnitude to the changes in the volume of its exports. Reciprocity arises in two places in GATT. First, governments seek a “balance of concessions” as a norm of negotiations, so that there is a rough equivalence between the market access value of the tariff cuts offered by one government and the concessions won from its trading partners. Second, when a government seeks to renegotiate, modify or withdraw a previous concession as an original action, GATT Article XXVIII permits affected trading partners to withdraw “substantially equivalent concessions,” and thereby to retaliate in a reciprocal manner.

Referring to the two-country model developed above, we now state a formal definition of reciprocity. Suppose that, beginning from an initial pair of tariffs, (τ^0, τ^{*0}) , a tariff negotiation results in a new pair of tariffs, (τ^1, τ^{*1}) . Denoting the initial world and domestic local prices as $\tilde{p}^{w0} \equiv \tilde{p}^w(\tau^0, \tau^{*0})$ and $p^0 \equiv p(\tau^0, \tilde{p}^{w0})$ and the new prices as $\tilde{p}^{w1} \equiv \tilde{p}^w(\tau^1, \tau^{*1})$ and $p^1 \equiv p(\tau^1, \tilde{p}^{w1})$, we say that the tariff changes conform to *the principle of reciprocity* when

$$\tilde{p}^{w0}[M(p^1, \tilde{p}^{w1}) - M(p^0, \tilde{p}^{w0})] = [E(p^1, \tilde{p}^{w1}) - E(p^0, \tilde{p}^{w0})], \quad (4.5)$$

where changes in trade volumes are valued at the existing world price. We next use the domestic balanced trade condition in (4.1) to establish that (4.5) may be rewritten as

$$[\tilde{p}^{w1} - \tilde{p}^{w0}]M(p^1, \tilde{p}^{w1}) = 0. \quad (4.6)$$

According to (4.6), reciprocity can be given a simple characterization: mutual changes in trade policy conform to the principle of reciprocity if and only if they leave the world price unchanged. With this characterization in hand, we next consider how strict adherence to reciprocity simplifies the bargaining problem.

We examine an illustrative model of tariff negotiations. Let us take the pre-negotiation tariff pair as exogenous, with the Nash tariffs being the natural candidate. The initial tariff pair fixes a particular iso-world-price line, where any such line is upward sloping in a graph with tariffs on the axes. Following Bagwell and Staiger (1999), governments simultaneously make tariff proposals, where any such proposal conforms to reciprocity and thus specifies a tariff pair (τ, τ^*) that lies along the fixed iso-world-price line. If the proposals agree, then the common proposal is implemented; otherwise, the proposal with the higher tariff pair (i.e., the lowest trade volume) is implemented. This model clearly captures the reciprocal nature of

tariff liberalization negotiations in GATT; in addition, the structure of the game captures in a short-hand way the potential for renegotiation under GATT Article XXVIII, since neither government can be forced to import a volume greater than implied by its proposal.¹³

As established by Bagwell and Staiger (1999), strict adherence to reciprocity ensures that it is a dominant strategy for each government to propose the tariff pair that if implemented would deliver its preferred trade volume along the given iso-world-price line. In other words, given a world price p^w , the domestic (foreign) government proposes the tariff pair that delivers its preferred local price and thus satisfies $W_p = 0$ ($W_{p^*} = 0$). The implemented tariff pair is then determined by the proposal with the highest tariff pair. Strict adherence to reciprocity then generates mutual gains for governments relative to the Nash tariff pair but delivers an efficient outcome only in a symmetric setting.¹⁴

Reciprocity with MFN We now build on the three-country version of the model and describe how reciprocity and MFN together can neutralize externalities across bargaining pairs.

Consider the case where foreign-country 2 is not involved in the negotiations and keeps its tariff unaltered. In the presence of MFN, the domestic government and the government of foreign-country 1 can still negotiate a reciprocal reduction in their tariffs τ and τ^{*1} which leaves the terms of trade $\tilde{p}^w(\tau, \tau^{*1}, \tau^{*2})$ unaltered but reduces p while raising p^{*1} , and which therefore provides these two countries with greater trade volume. But recall now that in foreign-country 2 we have the relationship $p^{*2} = p^w/\tau^{*2}$. It follows that, with τ^{*2} held fixed, if the negotiation between the domestic country and foreign-country 1 abides by MFN (so that a single equilibrium world price \tilde{p}^w prevails) and reciprocity (so that \tilde{p}^w is unaltered), then p^{*2} and therefore $W^{*2}(p^{*2}, \tilde{p}^w)$ and foreign-country 2's trade volume are unaltered by these negotiations as well. In abiding by the principles of MFN and reciprocity, the domestic government and the government of foreign-country 1 have thus engineered a bilateral tariff bargain without third-country spillovers.¹⁵ Intuitively, foreign-country 2 experiences a terms-of-trade gain (loss) from the reduction in τ (τ^{*1}), and the principles of MFN and reciprocity ensure that these two

¹³Under GATT Article XXVIII, if a negotiated tariff pair induces more trade volume than one government desires given the world price, then that government could raise its tariff, knowing that the other government would respond in reciprocal fashion. Our model captures this possibility in a short-hand way, by assuming that the proposal with the highest tariff pair is ultimately implemented. See our Online Appendix for additional discussion of the broader literature on reciprocity.

¹⁴In the symmetric case, defined as when the Nash and politically optimal tariffs generate the same terms of trade, strict adherence to reciprocity leads to an efficient outcome corresponding to the political optimum.

¹⁵These and related points are developed in Bagwell and Staiger (2005, 2010b).

opposing third-party externalities are just balanced. In this general manner, reciprocity and MFN together can neutralize bargaining externalities across bargaining pairs.¹⁶

Multilateral Reciprocity We now illustrate and examine the distinction between bilateral and multilateral reciprocity. After defining and illustrating multilateral reciprocity, we describe a multilateral bargaining setting and argue that each country again proposes for itself a tariff that corresponds to its politically-optimal-reaction-curve tariff when countries use dominant strategies, provided that tariff proposals satisfy MFN as well as multilateral - but not necessarily bilateral - reciprocity.¹⁷

For the three-country model with MFN tariffs, we say that a bilateral negotiation between the domestic country and foreign-country i , $i = 1, 2$, satisfies *bilateral reciprocity* if the resulting changes in τ and τ^{*i} maintain the terms of trade, $\tilde{p}^w(\tau, \tau^{*1}, \tau^{*2})$. Clearly, if the domestic country engages in two separate bilateral negotiations, with each negotiation satisfying bilateral reciprocity, then $\tilde{p}^w(\tau, \tau^{*1}, \tau^{*2})$ is maintained. The terms of trade can also be maintained, however, when the bilateral negotiations, viewed in isolation, violate bilateral reciprocity but do so in offsetting ways. We say that changes in τ, τ^{*1} and τ^{*2} satisfy *multilateral reciprocity* if the combined effect of these changes preserves the terms of trade at its initial level. Each foreign country then experiences an equal increase in the volume of its exports and imports once it takes account of the indirect trade effects associated with the tariff changes negotiated in the other bilateral. Bilateral reciprocity in both negotiations is thus sufficient but not necessary for multilateral reciprocity.

Bagwell and Staiger (2018) provide a formal analysis of dominant-strategy arguments in the three-country model. They consider a game in which the three countries take as given the initial tariff vector and the accompanying world price, and then make simultaneous tariff proposals. A strategy for each country is a proposal concerning its own tariff and that of its trading partner(s), where a proposal must satisfy MFN and multilateral reciprocity. Each country's proposal is associated with an "implied import volume" for itself. Bagwell and Staiger then construct a simple mechanism that takes the three proposals and assigns a vector of tariffs. The tariff vector comprised of each country's own-tariff proposal is assigned if the proposals agree.¹⁸

¹⁶We have described this result in a simple 2-good model. See Bagwell and Staiger (2002, Appendix B) for a discussion of this result in the many-good setting.

¹⁷As we discuss below, our discussion here draws on formal analysis found in Bagwell and Staiger (2018).

¹⁸Agreement occurs when the tariff vector constructed from each country's own-tariff proposal maintains the initial world price. Each country would then regard this "agreement tariff" as equivalent to its proposed tariff

If the proposals do not agree, the mechanism assigns a vector of tariffs that maximizes the value of trade volume subject to maintaining the initial world price and not forcing any country to import a volume in excess of its implied import volume.¹⁹ In this case, a “rebalancing” of offers is required, as the depth of the offer for one side of the market is reduced.

For the constructed mechanism, if countries use dominant strategies, Bagwell and Staiger (2018) show that each country’s proposal must specify a tariff for itself that delivers its preferred trade volume, given the initial world price. A novel feature of the multi-country setting is that the domestic country now has a *set* of dominant strategies. This set is defined by proposals under which the domestic country proposes for itself the tariff that delivers its preferred trade volume given the world price and proposes for the foreign countries any tariffs that when combined with the domestic tariff maintain the world price and thus ensure multilateral reciprocity. Importantly, the set of dominant strategies for the domestic country allows that its proposed tariff for itself may violate bilateral reciprocity when paired with its proposed tariff for an individual foreign country. Under dominant-strategy proposals, the implemented tariff vector is efficient if and only if the initial world price is set at the politically optimal level.

Hence, when negotiations must satisfy MFN and multilateral reciprocity, it is a dominant strategy for each participating government to propose for a given import product the tariff that generates its preferred trade volume for a fixed terms of trade. In this way, MFN and multilateral reciprocity convert a strategically complex multilateral bargaining problem into a comparatively straightforward collection of bilateral bargains. Under MFN and multilateral reciprocity, a government anticipates that any subsequent rebalancing of offers necessary for multilateral reciprocity would arise later in the round after all offers had been recorded and that this might lead to a reduction in the depth of its overall (multilateral) offer.

At a broad level, the theoretical framework developed by Bagwell and Staiger (2018) and described above delivers two general features. First, when negotiations satisfy the institutional constraints of MFN and multilateral reciprocity, the framework indicates that governments have dominant-strategy proposals and correspondingly predicts an absence of strategic behavior

vector.

¹⁹This requirement delivers a unique tariff vector assignment when the value of the domestic country’s implied import volume weakly exceeds the aggregate value of the foreign countries’ implied import volumes. If the domestic country is on the “short” side, rationing occurs, and this requirement does not result in a unique tariff vector assignment. For this case, Bagwell and Staiger (2018) construct the mechanism so that it randomly selects one foreign country to have first priority. Similar results would obtain under other prioritization rules, including rules that give priority to a principal supplier, provided that priority is not influenced by foreign proposals (conditional on being in the case where the domestic country is short).

among the participating governments. Second, the framework indicates that rebalancing may occur at the end of the round so as to ensure multilateral reciprocity and thus predicts as well an important multilateral element to the bilateral bargains. At a more specific level, these features imply that, when the institutional constraints of MFN and multilateral reciprocity are imposed, offers play a central role and are not often modified, lowball initial offers are absent, and linkages across bilaterals are present.²⁰ We explore the empirical support for these implications in the following two sections.

5. Stylized Facts of GATT Tariff Bargaining at Torquay

Under the institutional constraints of MFN and multilateral reciprocity, the theoretical framework described in section 4 predicts an absence of strategic behavior among the participating governments and an important multilateral element to bilateral bargains. In this section and the next, we use the bargaining records from the Torquay Round and provide empirical support for these two general features.

Before using this data, however, we note that these features are seen by GATT practitioners and legal scholars as hallmarks of the tariff bargaining that occurred in the early GATT rounds and are thought to distinguish GATT tariff bargaining from the tariff bargaining that preceded it.

Surveying the bargaining techniques used by countries over the first 5 GATT rounds of request-offer tariff negotiations, Curzon (1966) comments on the lack of strategic behavior:

...Their requests cannot be higher than their offers and negotiations start from this maximum position: if all requests are granted all the offers will be fulfilled. Similarly all other contracting parties are likely to make offers which match the requests they have made. As some of the requests are rejected, some of the offers are withdrawn. This procedure has been raised to a Gatt principle and is not laid down by any rule. It is a convention but one which creates a much better negotiating climate than the opposite trend which was a feature of the classical bilateral negotiations. Then, everyone put

²⁰The mechanism characterized by Bagwell and Staiger (2018) can generate outcomes consistent with no offer modification (when countries are symmetric) or one offer modification (when countries are asymmetric). If the framework were extended to allow for shocks (e.g., a given bilateral randomly fails), then the corresponding outcomes would be consistent with two or more offer modifications that require countries to switch to other strategies within their sets of dominant strategies.

forward very low offers with the intention of increasing gradually if the bargaining proved profitable. A country never knew, however, when it had reached the maximum its partner was willing to concede. (p. 74)

This feature is further clarified by Curzon's accompanying description of several countries that tried unsuccessfully to pursue classical bargaining strategies in the context of GATT rounds:

Several newcomers to GATT unaware of this new technique and starting with low offers found that in the course of negotiations they were unable to reach the level of requests they aimed for. Their initially low offers were taken as proof of their intentions and they either had to go home with a tariff higher than expected or had to increase their offers in the course of the negotiations. (p. 74)

In essence, Curzon describes a tariff bargaining forum in which offers were taken at face value; and as a result, there was no point in making lowball initial offers.

And while GATT tariff negotiations occurred bilaterally, GATT practitioners place great emphasis on the role that GATT played in relaxing the need for strict bilateral balance between concessions granted and concessions obtained (bilateral reciprocity), allowing countries to focus instead on achieving the desired balance on a multilateral basis (multilateral reciprocity). As one early GATT report put it (see also Curzon, 1966, pp. 75-77):

Multilateral tariff bargaining, as devised at the London Session of the Preparatory Committee in October 1946 and as worked out in practice at Geneva and Annecy, is one of the most remarkable developments in economic relations between nations that has occurred in our time. It has produced a technique whereby governments, in determining the concessions they are prepared to offer, are able to take into account the indirect benefits they may expect to gain as a result of simultaneous negotiations between other countries, and whereby world tariffs may be scaled down within a remarkably short time. ... The multilateral character of the Agreement enabled the negotiators to offer more extensive concessions than they might have been prepared to grant if the concessions were to be incorporated in separate bilateral agreements. Before the Geneva negotiations a country would have aimed at striking a balance between the concessions granted to another country and the direct concessions obtained from it without taking into account indirect benefits which might accrue from other prospective trade agreements; it might

even have been unwilling to grant an important concession if it had been obliged to extend that concession to third countries without compensation. (ICITO, 1949, p. 10)

In effect, the ICITO report claims that GATT rounds made it possible for governments to take into account linkages across bilaterals when assessing their overall benefits from the bargain, and by exchanging spillovers across bilaterals in a balanced way to enhance the possibilities for a more extensive agreement.

We next record and document three stylized facts of the Torquay bargaining patterns that are consistent with the defining features of GATT tariff bargaining described above.

5.1. Stylized Facts

Stylized Fact 1: Offers at Face Value. *Once the initial proposals are on the table, the focus of bargaining narrows to each country's own-tariff-cut offers, and countries respond to imbalances in the outstanding offers primarily by adjusting their own offers rather than by adjusting the requests they have made of their bargaining partners. Moreover, the numbers of back-and-forth offers and counteroffers in any bilateral bargain are relatively small.*

Figure 2 illustrates a striking pattern reflected in the US bilaterals: once initial requests and offers (and hence the initial proposals) have been exchanged between the US and its bargaining partners and the (post-September 28) bilateral bargaining stage of the Torquay Round begins, virtually all the back-and-forth occurs on offers rather than requests. That is, the US and its bargaining partners chose (with only one exception) to make counter-proposals by modifying their own-tariff-cut offers rather than by reissuing or modifying the tariff-cut requests they made of their bargaining partners. Moreover, this is a general feature of the bilaterals at Torquay: when a country made a counter-proposal, 82% of the time it did so by modifying its own-tariff-cut offers, not by modifying the tariff-cut requests it was asking of its bargaining partner.

And while we noted above in the context of Figure 2 that the US and/or its negotiating partners took actions on 57 separate dates before reaching a conclusion to the round, Figure 2 also reveals that the amount of “back-and-forth” within any US bilateral is much more limited, often consisting of only a couple of actions by each party over the course of the round and never more than a handful by either. In Table 2 we present evidence from all the Torquay bilaterals on the amount of back-and-forth offers and counteroffers during negotiations, and confirm that

this is a general feature of the round. As Table 2 reveals, on products for which a country made at least one offer in the bilateral, the average number of offers it made in a bilateral on that product is 1.4 and the maximum is 5; for requests the analogous numbers are 1 and 3.²¹ Conditional on a final agreement reached on that product in that bilateral, the average number of offers a country made on that product is 1.5 and the maximum is again 5; and for requests the analogous numbers are still 1 and 3.

Table 2 also reports the data on the simple counts of offers and counteroffers for a country pair (regardless of which products were contained in the offer). For bilaterals where a country made at least one offer, the average number of offers it made per bilateral is 1.8, with a maximum number of 6, and conditional on a final agreement reached between the two countries in that bilateral the analogous numbers are 2 and 6. And the analogous numbers of requests for a country pair are an average of 1.1 (and 1.2 conditional on a final agreement reached) and a maximum of 3.

Stylized Fact 2: Absence of Lowball Initial Offers. (a) *Offers for given import products are rarely deepened over the course of the negotiations; instead, adjustments typically involve a country “shopping around” its initial tariff-cut offers and ultimately reducing as necessary the depth of its overall (multilateral) offer.* (b) *When a country chooses to reduce the depth of its offers, it does so with adjustments on the “extensive margin” (i.e., by removing products from its offers), not on the “intensive margin” (i.e., by raising the level of the tariff cut offered).*

Table 3 describes the magnitude of the tariff concessions requested and offered at Torquay for Sales (that is, where the country is a “seller” of market access and the requests and offers refer to a country’s own tariffs) and Purchases (that is, where the country is a “buyer” of market access and the requests and offers refer to the tariffs of one’s bargaining partners). The top three rows of Table 3 describe the evolution of tariff concessions from initial requests to finalized agreed concession, all normalized relative to the pre-existing tariff, by product and within negotiating-partner pairs.²² As the top three rows reveal, the average tariff cuts initially

²¹For example, if a country made a single offer in a bilateral and a product was included in this offer, then we would record that a total of 1 offer was made on that product by that country in this bilateral. Alternatively, a product might be included in an initial offer, and then also be in the set of products that is included in a modified offer, and then later the offer on this product might be withdrawn, in which case we would record that a total of 3 offers (including the withdrawal/cancellation of this offer) were made on this product.

²²With all participating Torquay countries represented in Table 3, the Sales and Purchases numbers in the top three rows of the table are identical by construction. As we discuss below (see note 25), in our Online Appendix we present the analogs of Table 3 broken down by acceding and non-acceding countries where the

requested of a country by its bargaining partners would have reduced the tariffs on which requests were made to 55.1% of their existing levels, the average tariff cuts initially offered by the country to its bargaining partners would have reduced the tariffs on which offers were made to 82.2% of their existing levels, and the final tariff concessions agreed to by the country on average reduced these tariffs to 80.9% of their existing levels. A striking feature implied by these last two numbers is the apparent lack of significant deepening of offers for a product within a negotiating-partner pair between the initial tariff cut offered and the final tariff cut agreed (a downward movement of less than 2%, not two percentage points).²³

The bottom three rows of Table 3 report analogous statistics, but focus only on the sellers of market access and do not condition on the country making the request of or receiving the offer from the seller. These rows describe the evolution of tariff concessions from initial requests to the last offer made (whether or not the tariff offer made it into a finalized agreed concession), again all normalized relative to the pre-existing tariff.²⁴ The bottom two rows of the table confirm that sellers of market access at Torquay engaged in very little deepening of their product level tariff offers between the earliest offer they made on that product (to any bargaining partner) and the last offer they made on that product (to any bargaining partner).²⁵

Finally, the degree of adjustments to offers at the extensive margin over the course of the Torquay Round was more substantial. In total and prior to a final agreement, countries modified 1,330 of their 19,584 bilateral product-level offers (or roughly 7% of the bilateral product-level offers that were initially made). Figure 3 illustrates the extensive margin movement in one detailed example, the US-Italy bilateral. Each colored line corresponds to one product. The x-axis represents time. As time goes by, the US modifies its offer by adding and removing

Sales and Purchases numbers are no longer identical, and so to facilitate comparisons across tables we choose to include both the Sales and Purchases columns in the first three rows of Table 3.

²³One might worry that our HS6 aggregation is obscuring the occurrence of deepening of offers on some products and the reverse movement of offers on other products. But as we discuss in our working paper (Bagwell, Staiger and Yurukoglu, 2015, note 24), we have looked at the tariff-line-level bargaining records and if anything our aggregation to the HS6 level overstates the degree of deepening.

²⁴The drop in the numbers of final offers over existing tariffs as compared to initial offers over existing tariffs in the bottom two rows of Table 3 reflects missing data for existing tariffs associated with some final offers. Inferring existing tariffs from the existing tariffs recorded in previous offers is imperfect due to tariff-line aggregation, but filling in the missing data in this way does not change Table 3 in any substantial way.

²⁵As we have noted, Curzon (1966) suggests that newcomers to GATT sometimes behaved more in line with classical bargaining strategies until they learned that such strategies were unsuccessful in the context of GATT rounds. In the Online Appendix we present data for the subsample of countries that acceded to GATT at Torquay (Austria, Germany, Korea, Peru, Philippines and Turkey) and show that this subsample of countries does not exhibit behavior in line with Stylized Facts 1 or 2, consistent with Curzon's observation.

products. Similarly, Italy’s final offer to the US removes many products from its initial offer, while adding a handful.

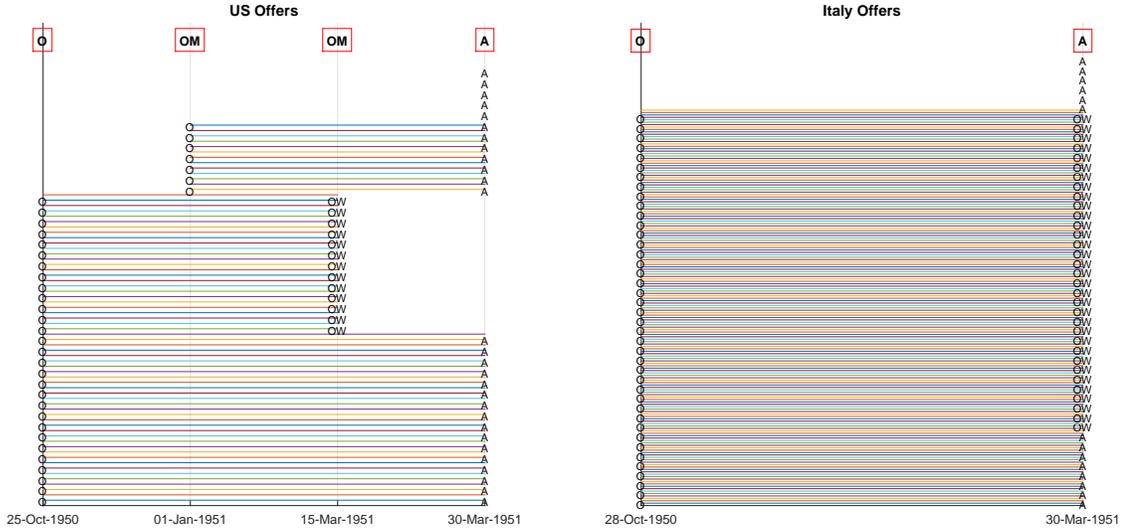


Figure 3: Extensive margin adjustments in US negotiations with Italy.

Notes: Each colored line corresponds to one product. The horizontal axis represents time. O indicates offer. A indicates agreement. M indicates modification. W indicates withdrawal.

Together these observations indicate that the most important dimension for negotiations was on the extensive margin, that is dropping and/or adding products from the negotiation, whereas there was minimal adjustment taking place on the intensive margin, that is, in the size of the tariff cuts being offered on any particular product. And roughly 71% of the product-level tariff cuts on offer made it into final concessions at Torquay, indicating that these extensive margin adjustments appear to represent the “shopping around” of a fixed set of offers across bargaining partners which ultimately led to an extensive-margin adjustment in the overall depth of successful offers through the removal of products.²⁶

Stylized Fact 3: Linkages Across Bilaterals. *For some bargains the initial offers sit dormant on the table for long periods of time and are then finalized with a single modification at the time that other bargains are concluded. And some agreements are themselves modified at the conclusion of the round.*

²⁶The 71% “success rate” of offers reflects both extensive-margin adjustments to proposals that were made over the course of the bargaining and the implications of failed bilateral bargains.

Figure 2 also indicates that some US bilateral bargains sit dormant for long periods of time and yet ultimately end in agreement. For example, as Figure 2 records, the US and Denmark exchanged initial offers on 11/8/1950, made no modifications to their requests or offers to each other after that date, and reached a final agreement on 3/31/1951. Table 2 confirms that this is also a prominent feature of Torquay bilaterals more generally: as reported there, conditional on a final agreement being reached, on average 11.8 weeks elapse between the last offer or modified offer made in a bilateral and the announcement of an agreement. Relatedly, as Figure 2 illustrates for the US bilaterals, a number of the initial offers were not tabled until midway through the round. These features suggest multilateral linkages giving rise to issues of sequencing across the bilaterals. Indeed, the importance of such linkages for understanding the pattern of bargaining at Torquay was emphasized in various accounts at the time.²⁷

Finally, as Figure 2 illustrates for the US bilaterals and as Table 2 confirms for the Torquay bilaterals generally, there are a number of agreements that are themselves modified late in the round (AM), as anticipated might happen according to step 4 of the protocol described in section 2. Table 2 reports that for the average agreement, modifications will apply to 3.5% of the total number of products on which initial agreement was reached.²⁸

5.2. Interpreting Tariff Bargaining at Torquay

Using our modeling framework described in section 4, we can now interpret the stylized facts of GATT tariff bargaining at Torquay emphasized above. These stylized facts are broadly consistent with what would be expected according to our framework, if governments make dominant-strategy proposals that adhere strictly to the twin institutional constraints of MFN and multilateral reciprocity. In particular, and as formalized by Bagwell and Staiger (2018), when governments make tariff proposals that must satisfy MFN and multilateral reciprocity, it is a dominant strategy for each participating government to propose for a given import product the tariff that generates its preferred trade volume for a fixed terms of trade. Once these offers are made, some rebalancing of offers may be necessary, in order to maximize trade volume while achieving multilateral reciprocity and ensuring that no government imports a volume in excess

²⁷For example, in its October 2 coverage of the opening of the Torquay Round negotiations, *The New York Times* (1950a) observed: “There is always a tendency in these meetings for delegations to delay negotiations until they get some inkling as to how bigger ones are going...”

²⁸Because modifications of agreements can include both the withdrawal of previously agreed tariff cuts and the addition of new tariff cuts, the fraction of goods for which agreement was later modified can rise to more than 100% of the goods in the original agreement.

of that implied by its own proposal. And each government anticipates that any subsequent rebalancing of offers would arise later in the round after all offers had been recorded and that this might lead to a reduction in the depth of its overall (multilateral) offer. Accordingly, it would be expected that offers would play a central role in the bargaining and be taken at face value (Stylized Fact 1), that there would be an absence of initial lowball offers (Stylized Fact 2), and that there would be evidence of linkages across bilaterals (Stylized Fact 3).²⁹

While our modeling framework thus offers an interpretation of the stylized facts provided above, we note that the framework as currently developed does not provide an explanation for all features of the data. In particular, the two-good framework allows only for intensive-margin adjustments and thus cannot directly explain why countries that reduced the depths of their offers typically did so with adjustments on the extensive margin. The development of an extended modeling framework that allows for both intensive- and extensive-margin adjustments is thus a valuable direction for future research.³⁰ We note as well that alternative interpretations are also possible. For example, some standard two-player models of bargaining (e.g., Admati and Perry, 1987, and Cramton, 1992) with asymmetric information also predict small numbers of offers and counteroffers. A further strength of these models is that they endogenously generate the possibility of delay.³¹ For the present application, however, a limitation of these models is that they cannot be directly applied to study bilateral bargaining with third-party externalities. Finally, it could also be interesting to explore the extent to which features of the data might be interpreted using an alternative model in which international negotiations are conducted by representatives from each country who follow simple negotiation strategies that are formulated in light of the institutional and possible domestic constraints that these representatives face.

²⁹We have shown above how MFN and reciprocity together can neutralize bargaining externalities across bargaining pairs, and we have argued that these institutional constraints can help account for core features of the Torquay bargaining records. And most of the tariff bargains in the Torquay Round conformed to the MFN principle. But there were exceptions. In particular, the UK and its Commonwealth partner countries negotiating at Torquay granted tariff preferences to each other on a range of selected products, and hence represent an important deviation from MFN; yet as a group these countries exhibited bargaining behaviors at Torquay which were not atypical with respect to the stylized facts we have described. In the Online Appendix we argue that the positive (though not the normative) features of our dominant-strategy arguments above extend to the case where some countries grant tariff preferences to other countries, provided that those preference margins are preserved by any proposals made in the bilateral MFN tariff negotiations. We then present evidence that Commonwealth countries did indeed propose to reduce their preferential tariff rates whenever they proposed to reduce their MFN tariff rates at Torquay in a way that essentially preserved the preference margins they granted to their Commonwealth partner countries.

³⁰In note 16 we describe a natural starting point for such an extension.

³¹It is also possible that the timing of counteroffers could reflect other, nonstrategic factors, such as the time-consuming process of drawing up the necessary lists.

6. Multilateral versus Bilateral Reciprocity

The theoretical framework described in section 4 points to an important multilateral element to the bilateral bargains. As discussed in the previous section, GATT practitioners also place great emphasis on the role that GATT played in allowing countries to seek multilateral as opposed to bilateral reciprocity in their tariff bargains. And the evidence we have provided above for Stylized Fact 3 is suggestive of important linkages in some form across bilaterals at Torquay, and of the possibility that governments took into account linkages across bilaterals when assessing their overall benefits from the bargain. But did the pursuit of multilateral as opposed to bilateral reciprocity figure prominently in the Torquay Round negotiations and account for these linkages, as the ICITO report claims? In this section we provide a further assessment of this claim.

One approach would be to attempt direct measures of the degree to which the Torquay bargaining outcomes violated bilateral reciprocity but conformed with multilateral reciprocity. A difficulty with this approach is that, in addition to requiring detailed trade data from the period, it also requires knowledge of detailed trade elasticities.

Here we use insights from the modeling framework presented above and pursue an alternative approach to assessing this claim. In particular, if countries were counting on indirect trade benefits from the MFN tariff cuts negotiated between third parties to achieve multilateral reciprocity in the Torquay Round, then we would expect to see reactions in the bilateral bargaining records of some countries when an unanticipated event occurs in the bilateral negotiations of other countries, whereas according to the theory sketched out in section 4 no such reaction would be expected if strictly bilateral reciprocity had been demanded and achieved all along. Indeed, a report issued by the GATT Secretariat in the aftermath of the failure of the UK and a number of its Commonwealth partners to reach agreement with the US in the Torquay Round suggests that such reactions to unanticipated third-party events were thought to be an important feature of the round:

The fact that certain of the more important negotiations initiated between existing contracting parties did not result in agreements inevitably had some reactions on other negotiations. If, for example, the other countries engaged in tariff negotiations at Torquay had been sure that substantial concessions were going to be exchanged between the United Kingdom, Australia and New Zealand on the one hand, and the United States on the other,

they might have been prepared, in the light of the benefits which they would have enjoyed from the automatic extension of these concessions to them, to go somewhat further in reducing their own tariffs. (ICITO, 1952, p. 9)

This discussion suggests an indirect way to evaluate the contribution to the success of GATT tariff bargaining of the relaxation of strict bilateral reciprocity. If the collapse of the bilateral bargains between the US on the one hand and the UK, Australia and New Zealand on the other triggered significant changes in the remaining bilaterals that these countries negotiated with third countries at Torquay, then this would be evidence that strict bilateral reciprocity was not a feature of the bargains that were anticipated to prevail on the eve of this collapse, and evidence therefore consistent with the view that the relaxation of strict bilateral reciprocity facilitated by the GATT multilateral bargaining forum was important to the success of the GATT approach. On the other hand, if little or no change in the remaining bilaterals of these countries is observed in response to this collapse, this would suggest that bilateral reciprocity between the US and each of these bargaining partners was in fact built into the bargains all along, and that the relaxation of the need for strict bilateral reciprocity facilitated by the GATT multilateral forum was then not likely to be a central reason for GATT's success.

To further relate this interpretation to the theoretical framework described in section 4, we make two additional observations. First, and focusing for illustration on the US proposals, if the failure of the US-Commonwealth bargains are regarded as random and exogenous, then under multilateral reciprocity any resulting changes in US proposals might be broadly interpreted as the utilization of an alternative dominant strategy for the US (and similarly for each of the changed proposals of the Commonwealth countries).³² Second, we note that the simple theory sketched out in section 4 does not explain why the relaxation of bilateral reciprocity in favor of multilateral reciprocity would matter to the success of tariff bargaining. Alternative models, however, may provide potential explanations.³³

³²Recall from section 4 that Bagwell and Staiger (2018) show for the multi-country model that the domestic country has a set of dominant strategies, where for each proposal strategy in this set the domestic country proposes for itself that tariff that delivers its trade volume given the world price and proposes for foreign countries any tariffs that satisfy multilateral reciprocity.

³³For example, in a 3-good, 3-country model of triangular trade, where country *A* exports good *a* to country *B*, country *B* exports good *b* to country *C*, and country *C* exports good *c* to country *A*, negotiations over import tariffs can generate potential gains under multilateral reciprocity but not under bilateral reciprocity. More generally, empirical evidence of a beneficial role for multilateral reciprocity may motivate interesting and new theoretical analyses.

We follow this logic with two tests. First, we check at the country level whether the breakdown in the US-UK, US-Australia and US-New Zealand bilaterals led to a retrenchment of offers by third parties to these four countries, as the passage quoted above from the GATT report suggests. Second, we test at the product level whether products which were under negotiation in these three bilaterals prior to their breakdown were more likely to be re-offered by these countries to third parties after the breakdown, thereby at least partially converting into direct benefits for these third parties what would have been anticipated as indirect benefits from successful bilaterals between the US and the UK, Australia and New Zealand.

To implement these tests, we must identify when the news of the breakdown of the US bilaterals with these Commonwealth countries occurred. This news was officially announced at the GATT Secretariat on March 31, 1951, but *The New York Times* (1951a) broke the news with a dateline March 30 special press report, and it seems unlikely that even the March 30 announcement would have come as a complete surprise to the other negotiating countries at Torquay. Below we will report results that set the “news” date at February 18, because that was the day after the last action in the US-UK bilateral – the UK’s modification of its offer to the US on 2/17/1951 – and it seems plausible that general news of the disappointing UK response to the US request that it substantially reduce the margins of preference which it accorded to its Commonwealth partners would have become known to other negotiators soon after (and there were no actions in the US-Australia or US-New Zealand bilaterals past this date). But we also experiment with alternative news dates between March 1 and March 30.

We begin with the question of retrenchment: Were the bargaining partners of the US, the UK, Australia and New Zealand less willing to make offers in their bilaterals with these four countries once it became known that these US-Commonwealth bilaterals had failed? We focus on the change in the share of product-level offers that the other participating countries at Torquay made to these four countries after they learned about the breakdown in these bilaterals, and ask whether these changes reorientated their offers away from these four countries. To this end, we define \mathcal{T} as the set of participating countries at Torquay, and we define \mathcal{F} as the subset of countries consisting of the US, the UK, Australia and New Zealand. And we denote by $\#O_{\mathcal{X}\rightarrow\mathcal{Y}}$ the number of product-level tariff-cut offers that countries in the set \mathcal{X} made to countries in the set \mathcal{Y} and by $\#O_{\mathcal{T}\setminus\mathcal{F}\rightarrow f}$ the number of product-level offers that countries in the set $\mathcal{T}\setminus\mathcal{F}$ made to a country $f \in \mathcal{F}$. With this we also have $\#O_{\mathcal{T}\setminus\mathcal{F}\rightarrow\mathcal{F}} = \sum_{f \in \mathcal{F}} \#O_{\mathcal{T}\setminus\mathcal{F}\rightarrow f}$. We then define the share of product-level offers that countries in the set $\mathcal{T}\setminus\mathcal{F}$ made to a country $f \in \mathcal{F}$

and to any countries in \mathcal{F} , respectively, by

$$SHARE_{T \setminus \mathcal{F} \rightarrow f} \equiv \frac{\#O_{T \setminus \mathcal{F} \rightarrow f}}{\#O_{T \setminus \mathcal{F} \rightarrow T \setminus \mathcal{F}}} \quad \text{and} \quad SHARE_{T \setminus \mathcal{F} \rightarrow \mathcal{F}} \equiv \frac{\#O_{T \setminus \mathcal{F} \rightarrow \mathcal{F}}}{\#O_{T \setminus \mathcal{F} \rightarrow T \setminus \mathcal{F}}}.$$

Fixing 2/18/1951 as the date at which negotiators at Torquay learned of the breakdown of these US-Commonwealth bilaterals, we find that on 2/18/1951, $SHARE_{T \setminus \mathcal{F} \rightarrow \mathcal{F}} = 0.345$ (with individual components $SHARE_{T \setminus \mathcal{F} \rightarrow US} = 0.231$, $SHARE_{T \setminus \mathcal{F} \rightarrow UK} = 0.105$, $SHARE_{T \setminus \mathcal{F} \rightarrow AUS} = 0.006$ and $SHARE_{T \setminus \mathcal{F} \rightarrow NZ} = 0.003$), indicating that on the eve of the breakdown the other participating countries at Torquay were making roughly 35% of their product-level offers to the US, the UK, Australia and New Zealand. We then recalculate these shares based on the offers outstanding at the end of the round, and find that $SHARE_{T \setminus \mathcal{F} \rightarrow \mathcal{F}} = 0.391$ (with individual components $SHARE_{T \setminus \mathcal{F} \rightarrow US} = 0.304$, $SHARE_{T \setminus \mathcal{F} \rightarrow UK} = 0.076$, $SHARE_{T \setminus \mathcal{F} \rightarrow AUS} = 0.008$ and $SHARE_{T \setminus \mathcal{F} \rightarrow NZ} = 0.002$), indicating that subsequent to the breakdown the other participating countries at Torquay were making roughly 39% of their product-level offers to these four countries. Clearly, while there is some variation across countries, with the shares of product-level offers to the US and Australia rising and the shares of product-level offers to the UK and New Zealand falling, these two sets of numbers do not suggest that overall there was a diminished willingness on the part of US, UK, Australia and New Zealand bargaining partners to make offers in their bilaterals with these countries after they had learned that the US-Commonwealth bilaterals would end in failure. Performing this same calculation with the “news” date fixed at either 3/1/1951, 3/15/1951 or 3/30/1951 yields similar results.

However, on closer examination this simple difference is driven strongly by a suite of offers from France after the US-Commonwealth breakdowns. While these offers from France may have been influenced by the US-Commonwealth breakdowns, the narrative from the time suggests that other factors unique to the France bargaining strategy were probably more decisive.³⁴ Eliminating France from the calculations above, we find that on 2/18/1951 $SHARE_{T \setminus \mathcal{F} \rightarrow \mathcal{F}} = 0.400$

³⁴In particular, as Curzun (1966, p. 110) describes, France was alone in following a strategy at Torquay that relied heavily on threats of renegotiating the existing tariff concessions it had agreed to in prior GATT rounds (under the GATT renegotiation provisions contained in Article XXVIII that we described in section 4). Curzun notes that most countries renegotiated less than ten items, whereas France was the exception and “renegotiated some 200 items, only to find later, to quote one of her negotiators, ‘that it had neither been necessary nor worthwhile.’” This discussion raises the possibility that France abandoned this strategy late in the round, which may account for the large number of offers it made to the US subsequent to 2/17/1951. That possibility seems to be supported by news coverage at the time: a November 8 1950 article in *The New York Times* (1950b) ran with the headline “French Now Seek New Tariff Duties: Torquay Trade Body Amazed as Paris Negates Efforts to Relax Import Curbs”; while an article published by the *Times* (1951b) on March 11 1951 stated that “France, which was frightening all participants in November with the number of items on which she wanted to raise duties (mostly items on which the French granted reductions in the earlier meetings at Geneva and

(with individual components $SHARE_{T\setminus\mathcal{F}\rightarrow US} = 0.266$, $SHARE_{T\setminus\mathcal{F}\rightarrow UK} = 0.125$, $SHARE_{T\setminus\mathcal{F}\rightarrow AUS} = 0.006$ and $SHARE_{T\setminus\mathcal{F}\rightarrow NZ} = 0.003$) while based on the offers outstanding at the end of the round we have $SHARE_{T\setminus\mathcal{F}\rightarrow\mathcal{F}} = 0.374$ (with individual components $SHARE_{T\setminus\mathcal{F}\rightarrow US} = 0.278$, $SHARE_{T\setminus\mathcal{F}\rightarrow UK} = 0.083$, $SHARE_{T\setminus\mathcal{F}\rightarrow AUS} = 0.010$ and $SHARE_{T\setminus\mathcal{F}\rightarrow NZ} = 0.003$). These numbers suggest modest retrenchment, as they indicate a drop in the overall share of product-level offers that the other participating countries at Torquay made to these four countries from 40% to roughly 37% after they learned of the breakdown in these bilaterals. This is in turn consistent with the position that countries had expected indirect trade benefits from the MFN tariff cuts negotiated between the US and its Commonwealth bargaining partners, and pulled back on their offers to these countries in an attempt to reestablish (multilateral) reciprocity once they realized that these indirect benefits would not be forthcoming.³⁵

We next turn to the question of re-offering: Were products which were under negotiation in the US-UK, US-Australia and/or US-New Zealand bilaterals more likely to be re-offered by these countries to third parties after the breakdown of these bilaterals, thereby converting into direct benefits for these third parties what would have been anticipated as indirect benefits from successful US-UK, US-Australia and US-New Zealand bilaterals? To answer this question, we define \mathcal{C} as the set of country pairs consisting of US-UK, US-Australia and US-New Zealand. Recalling that \mathcal{F} is the set of countries consisting of the US, the UK, Australia and New Zealand and that \mathcal{T} is the set of participating countries at Torquay, we estimate the following regression on the sample of products for which any country in the set \mathcal{F} made an offer:

$$OfferPost_{g,fm} = \alpha_{HS1} + \gamma_{fm} + \beta OfferPre_{g,f} + \epsilon_{g,fm} \quad (6.1)$$

where g indexes products, f is a country index referring to an element of \mathcal{F} , m is a country index referring to an element of $\mathcal{T}\setminus\mathcal{F}$, α_{HS1} is an HS1 fixed effect and γ_{fm} is a country-partner fixed effect (we also report results when only a country fixed effect γ_f is included).³⁶ The dependent variable $OfferPost_{g,fm}$ is an indicator variable that takes a value of 1 if country f made a new post-breakdown offer to country m on product g , and 0 otherwise. The independent variable $OfferPre_{g,f}$ is an indicator variable that takes a value of 1 if country f made a pre-breakdown

Anney) has mollified most of her trading partners. The French have withdrawn some of their demands for revision and given quoted compensation in other cases in the form of reductions on some other items, all after prolonged and sometimes acrimonious bargaining in dozens of hotel rooms.”

³⁵Again, performing this same calculation with the “news” date fixed at either 3/1/1951, 3/15/1951 or 3/30/1951 yields similar results.

³⁶We experimented with both HS1 and HS section fixed effects, finding that it made no material difference to our results, so we report results with HS1 fixed effects.

offer on product g in a bilateral in the set \mathcal{C} , and 0 otherwise. The focus of equation (6.1) is the coefficient β which, if positive, indicates that a product was more likely to be offered by a country in the set \mathcal{F} to a country in the set $\mathcal{T}\setminus\mathcal{F}$ after the breakdown of the US-Commonwealth bilaterals if it was part of the outstanding set of offers in the US bilaterals with the UK, Australia and New Zealand prior to the breakdown of these bilaterals.

Table 4 provides the regression evidence (Probit and OLS), with the news date fixed at 2/18/1951. The coefficient on $OfferPost_{g,fm}$ is positive and significant in all specifications, as would be expected if the failure of the three US-Commonwealth bilaterals led these four countries to extend their offers to countries directly on products where those countries had anticipated indirect market access benefits through the US-Commonwealth bilaterals. Using news dates of 3/1/1951 and 3/15/1951 yields similar results, while the official 3/30/1951 dateline of *The New York Times* press release generates results that are still significant in the Probit, but overall the relationship is weaker. The results are robust to excluding offers to France.

Overall, these results provide indirect evidence that news of the breakdown in the US-Commonwealth bilaterals caused 3^{rd} countries to rebalance their bilaterals with these countries, and hence evidence that bilateral reciprocity was not a feature of the bargains that were anticipated to prevail on the eve of this collapse, consistent with the view that the relaxation of bilateral reciprocity which was facilitated by the GATT multilateral bargaining forum was important for the success of the GATT approach.³⁷ Our results also provide some specific support for the view expressed in the report by the GATT Secretariat quoted above, that this rebalancing took the form at least partially of a general retrenchment of offers to the US, the UK, Australia and New Zealand, but only if the negotiating behavior of France is treated as

³⁷To be clear, our results reject the null hypothesis that the Torquay bilaterals satisfied the restriction of bilateral reciprocity, because under this null the breakdown of the US-UK, US-Australia and US-New Zealand bilaterals would not have triggered adjustments in the remaining bilaterals of these four countries with third parties. Moreover, the nature of the adjustments that we document are consistent with the kind of rebalancing that would be required to reestablish multilateral reciprocity after such a breakdown, in that these four countries were reorienting their offers toward the rest of the participants at Torquay at the same time that the rest of the participants at Torquay were reorienting their offers away from these four countries. And in further support of this interpretation we note that in US State Department (1951, p. 6) the US provided a preliminary estimate (based on trade coverage) of “the indirect benefits, which will accrue to the United States as the result of concessions exchanged by other participants in the Torquay Conference in approximately 130 negotiations between pairs of countries,” and concluded that these indirect benefits amounted to about 10 percent of the trade benefits accruing directly from its own negotiations at Torquay (a later accounting by the US International Chamber of Commerce, 1955 p. 24, put the number closer to 20 percent). Still, we can’t rule out the possibility that (i) there was a general lack even of multilateral reciprocity before the US-UK, US-Australia and US-New Zealand breakdowns, and (ii) as a consequence there were externalities across bilateral bargains which were impacted by these breakdowns and led to further adjustments in the remaining bilaterals.

unique, as described above. If one treats France as the same as others, our results suggest that this rebalancing still occurred, but that it was achieved not by an overall retrenchment of offers but rather by reorienting offers from the failed US-UK, US-Australia and US-New Zealand bilaterals directly to 3rd countries who would have gained indirectly from those bilaterals.

7. Conclusion

We have provided a first look at the newly declassified bargaining records of the GATT Torquay Round (1950-51), where over a 10 month period 298 separate bilateral negotiations among the 37 participating countries covering thousands of tariff-line products took place. We have shown that GATT multilateral tariff bargaining displays an array of interesting stylized facts. These stylized facts lend support to two features that are seen by GATT practitioners and legal scholars as hallmarks of the tariff bargaining that occurred in the early GATT rounds, namely, a lack of strategic behaviors, such as lowball initial offers, among the participating governments, and an important multilateral element to the bilateral bargains. We have suggested that, when viewed through the lens of the terms-of-trade theory of trade agreements, these features can be understood as emerging from a tariff bargaining forum that emphasizes the GATT pillars of MFN and multilateral reciprocity. And we have offered the first evidence for the claim that the relaxation of strict bilateral reciprocity facilitated by the GATT multilateral bargaining forum was important to the success of the GATT approach.

To interpret the GATT bargaining data we have relied on strong institutional assumptions that have allowed us to make contact with a number of important features of GATT tariff bargaining and the stylized facts that seem to reflect these features. But the set of stylized facts that we have identified also point to an additional feature of the tariff bargaining at Torquay that our theoretical framework does not currently and perhaps cannot speak to, namely, the reliance on extensive margin adjustments to reduce the size of offers when such reductions were desired. This points to the importance of additional theoretical work to guide the analysis of tariff bargaining and interpret the results. All of these features would be unknowable without the detailed bargaining data that the WTO has made publicly available. In this light, as more of this data becomes accessible to researchers, we view our initial look at the GATT bargaining data as providing a promising view for the road ahead.

References

- Admati, Anat R. and Motty Perry (1987), "Strategic Delay in Bargaining," *Review of Economic Studies*, LIV, 345-364
- Bagwell, Kyle and Robert W. Staiger (1999), "An Economic Theory of GATT," *American Economic Review* 89(1): 215-48
- Bagwell, Kyle and Robert W. Staiger (2002), *The Economics of the World Trading System*, Cambridge, MA: The MIT Press
- Bagwell, Kyle and Robert W. Staiger (2005), "Multilateral Trade Negotiations, Bilateral Opportunism and the Rules of GATT/WTO," *Journal of International Economics* 67(2): 268-94
- Bagwell, Kyle and Robert W. Staiger (2010a), "The WTO: Theory and Practice," *Annual Review of Economics*, 2: 223-56
- Bagwell, Kyle and Robert W. Staiger (2010b), "Backward Stealing and Forward Manipulation in the WTO," *Journal of International Economics*, 82(1): 49-62
- Bagwell, Kyle and Robert W. Staiger (2011), "What do trade negotiators negotiate about? Empirical evidence from the World Trade Organization," *American Economic Review* 101(4): 1238-73
- Bagwell, Kyle, Robert W. Staiger and Ali Yurukoglu (2015), "Multilateral Trade Bargaining: A First Look at the GATT Bargaining Records," NBER WP 21488, August
- Bagwell, Kyle and Robert W. Staiger (2018), "Multilateral Trade Bargaining and Dominant Strategies," *International Economic Review*, 59(4): 1785-1824
- Bown, Chad P. and Meredith A. Crowley (2013), "Self-Enforcing Trade Agreements: Evidence from Time-Varying Trade Policy," *American Economic Review* 103(2): 1071-1090
- Broda, Christian, Nuno Limao, and David E. Weinstein (2008), "Optimal Tariffs and Market Power: The Evidence," *American Economic Review*, 98(5): 2032-65
- Cramton, Peter (1992), "Strategic Delay in Bargaining with Two-Sided Uncertainty," *Review of Economic Studies*, 59(1): 205-225

- Crawford, Gregory S., and Ali Yurukoglu (2012), "The Welfare Effects of Bundling in Multichannel Television Markets," *American Economic Review*, 102(2): 643-85
- Curzon, Gerard (1966), *Multilateral Commercial Diplomacy: The General Agreement on Tariffs and Trade and its Impact on National Commercial Policies and Techniques*, Praeger: New York
- Gowa, Joanne and Soo Yeon Kim (2005), "An Exclusive Country Club: The Effects of the GATT on Trade, 1950-94," *World Politics*, 57(4): 453-478
- Hoda, Anwarul (2001), *Tariff Negotiations and Renegotiations under the GATT and the WTO: Procedures and Practices*, WTO and Cambridge University Press
- Irwin, Douglas A. (1995), "The GATT in Historical Perspective," *American Economic Review Papers and Proceedings* 85 May: 323-328
- Interim Commission for the ITO (1949), *The Attack on Trade Barriers: A Progress Report on the Operation of the General Agreement on Tariffs and Trade*. Geneva, August
- Interim Commission for the ITO (1952), *GATT in Action: Third Report on the Operation of the General Agreement on Tariffs and Trade*. Geneva, January
- Karacaovali Baybars and Nuno Limao (2008), "The Clash of Liberalizations: Preferential vs. Multilateral Trade Liberalization in the European Union," *Journal of International Economics* 74(2): 299-327
- Keniston, Daniel (2013), "Bargaining and Welfare : A Dynamic Structural Analysis of the Autorickshaw Market," Working Paper
- Larsen, Bradley (2014), "The Efficiency of Dynamic, Post-Auction Bargaining: Evidence from Wholesale Used-Auto Auctions," Working Paper
- Limao, Nuno (2006), "Preferential Trade Agreements as Stumbling Blocks for Multilateral Trade Liberalization: Evidence for the U.S.," *American Economic Review* 96(3): 896-914
- Limao, Nuno (2007), "Are Preferential Trade Agreements with Non-trade Objectives a Stumbling Block for Multilateral Liberalization?" *Review of Economic Studies* 74(3): 821-55
- Ludema, Rodney D. and Anna Maria Mayda (2009), "Do Countries Free Ride on MFN?," *Journal of International Economics* 77(2): 137-50

- Ludema, Rodney and Anna Maria Mayda (2013), “Do Terms-of-Trade Effects Matter for Trade Agreements? Theory and Evidence from WTO countries,” *Quarterly Journal of Economics* 128(4)
- Mayer Wolfgang (1981), “Theoretical Considerations on Negotiated Tariff Adjustments,” *Oxford Economic Papers* 33(1): 135-53
- New York Times (1950a), “Tariff Parley Off To A Good Start: 20 or 30 Negotiations to Open at Torquay This Week—U.S. in a Position to Bargain,” *Special to The New York Times* by Michael L. Hoffman, dateline October 1; published October 2
- New York Times (1950b), “French Now Seek New Tariff Duties: Torquay Trade Body Amazed as Paris Negates Efforts to Relax Import Curbs,” *Special to The New York Times* by Michael L. Hoffman, dateline November 8; published November 10
- New York Times (1951a), “U.S.-British Trade Talks Fail: Imperial Preference Blamed,” *Special Press Report to The New York Times* by Michael L. Hoffman, dateline March 30; published March 31
- New York Times (1951b), “Big Tariff Parley Nearing Its Close: 1,000 Experts at Torquay See New Convention Ready for Signatures by April 20,” *Special to The New York Times* by Michael L. Hoffman, dateline March 11; published March 12
- United States Council of the International Chamber of Commerce (1955), *G.A.T.T.: An analysis and appraisal of the General Agreement on Tariffs and Trade*. Prepared by the William L. Clayton Center for International Economic Affairs of the Fletcher School of Law and Diplomacy, February
- United States Department of State (1951), *Preliminary Analysis of Torquay Protocol of Accession, Schedules, and Related Documents: General Agreement on Tariffs and Trade*. US Government Printing Office, Washington, DC

8. Tables

	Requests		Offers		Agreements	
	(1)	(2)	(3)	(4)	(5)	(6)
logDistance	-31.67 (9.06)	-26.82 (9.02)	-10.45 (3.77)	-9.57 (3.85)	-11.38 (4.86)	-10.80 (4.70)
logGDPproposer	20.94 (3.22)	4.45 (1.58)	6.11 (1.88)	2.70 (1.06)	5.07 (1.86)	2.48 (1.45)
logGDPtarget	14.67 (2.44)	11.85 (1.07)	7.41 (1.74)	1.69 (0.46)	7.68 (2.44)	1.745 (0.58)
Proposer FE		X		X		X
Target FE		X		X		X
N	1260	1260	1260	1260	1260	1260
R-squared	0.21	0.36	0.14	0.25	0.11	0.24

Table 1: Each column corresponds to a separate regression. In columns (1) and (2), the dependent variable is the number of HS6 codes with requests by country pair-direction. In (3) and (4), it is the number of HS6 codes with offers. In (5) and (6), it is the number of HS6 codes that were part of final agreements. Standard errors (in parentheses) are clustered by target country.

	Mean	SD	Min	Max	N
Number of offers per good-country	1.363	0.516	1	5	19584
Number of offers per country	1.790	0.658	1	6	324
Number of requests per good-country	1.021	0.148	1	3	38678
Number of requests per country	1.129	0.368	1	3	442
Conditional on Final agreement					
Number of offers per good-country	1.531	0.546	1	5	13054
Number of offers per country	1.969	0.595	1	6	260
Number of requests per good-country	1.047	0.214	1	3	6991
Number of requests per country	1.194	0.446	1	3	242
Number of weeks from the last offer (O or OM) to the first agreement (A)	11.771	7.405	0.143	26.286	124
Fraction of goods for which agreement was later modified	0.035	0.197	0	2	145

Table 2: Back-and-Forth Offers and Counteroffers in the Torquay Round: This table presents statistics on the amount of back and forth on goods and with negotiating partners over concessions negotiated by all participating countries in the Torquay Round. Offer statistics reflect averages conditional on at least one offer; Request statistics reflect averages conditional on at least one request.

		Sales			Purchases		
		Ad Val	Specific	All	Ad Val	Specific	All
Country-Specific							
Initial request over existing tariff	Mean	0.529	0.589	0.551	0.529	0.589	0.551
	SD	0.250	0.315	0.277	0.250	0.315	0.277
	Min	0	0	0	0	0	0
	Max	1	1	1	1	1	1
	N	21987	12667	34654	21987	12667	34654
Initial offer over existing tariff	Mean	0.808	0.843	0.822	0.808	0.843	0.822
	SD	0.202	0.220	0.210	0.202	0.220	0.210
	Min	0	0	0	0	0	0
	Max	1	1	1	1	1	1
	N	10185	7022	17207	10185	7022	17207
Final agreed concession over existing tariff	Mean	0.789	0.836	0.809	0.789	0.836	0.809
	SD	0.199	0.238	0.218	0.199	0.238	0.218
	Min	0	0	0	0	0	0
	Max	1	1	1	1	1	1
	N	6271	4665	10936	6271	4665	10936
Cross-Country							
Initial request over existing tariff	Mean	0.532	0.593	0.555			
	SD	0.250	0.318	0.280			
	Min	0	0	0			
	Max	1	1	1			
	N	17043	10875	27918			
Initial offer over existing tariff	Mean	0.815	0.849	0.829			
	SD	0.204	0.219	0.211			
	Min	0	0	0			
	Max	1	1	1			
	N	8336	6033	14369			
Final offer over existing tariff	Mean	0.799	0.829	0.812			
	SD	0.208	0.240	0.222			
	Min	0	0	0			
	Max	1	1	1			
	N	7847	5785	13632			

Table 3: Initial requests, initial offers and final offers and concessions over existing tariffs for all participating countries in the Torquay Round. "Sales" refer to requests of and offers on own tariffs. "Purchases" refer to requests of and offers on the tariffs of the bargaining partner. Country-Specific numbers refer to a given Seller-Purchaser-HS6, and describe the evolution of tariff concessions from initial requests to finalized agreed concession. Some goods appear in both the ad valorem and specific columns. Cross-Country numbers refer to a given Seller-HS6, and describe the evolution of tariff concessions from initial requests to the last offer made.

VARIABLES	(1) PROBIT	(2) PROBIT	(3) OLS	(4) OLS
OfferPre	0.292 (0.152)	0.581 (0.154)	0.0653 (0.0326)	0.0954 (0.0316)
Observations	3,055	2,641	3,055	3,055
R-squared			0.166	0.533
Country FE	Yes	No	Yes	No
Country-pair FE	No	Yes	No	Yes
HS1 FE	No	Yes	No	Yes

Table 4: Regression of whether an HS6 product - country pairing offered by the US, the UK, Australia or New Zealand to countries outside this set was added after 2/18/1951 (after the breakdown of the US-UK, US-Australia and US-New Zealand bilaterals) on whether the product in question had been offered by that country in one of these bilaterals prior to their breakdown. A positive coefficient implies that a product is more likely to be offered by one of these countries to countries outside this set following the breakdown of the US-UK, US-Australia and US-New Zealand bilaterals if that country was offering a concession on this product in one of these bilaterals prior to their breakdown. SEs clustered by negotiating partner.