

When Trade as Aid Isn't:  
GSP, the GATT/WTO and Trade

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## INTRODUCTION

Does membership in the World Trade Organization (WTO) increase trade? In the debate touched off by Rose's findings to the contrary,<sup>1</sup> scholars have looked at this question from nearly every angle save one: the role of the Generalized System of Preferences (GSP). As a one-way tariff preference given by rich to poor countries, GSP is often found to be a better predictor of trade than WTO membership.<sup>2</sup> But GSP was never meant as a substitute for membership in the multilateral trading system. GSP was created to promote economic growth and encourage developing countries to participate in the global economy. Thus, rather than compare the trade effects of GSP and the WTO, the better question is: Do GSP recipients benefit more or less from WTO membership than non-recipients?

Although it is routine to include GSP in models of the WTO's effects on trade, the literature has had surprisingly little to say about this variable. Studies often note that GSP required a "waiver" from the General Agreement on Tariffs and Trade (GATT) because it runs afoul of the institution's Most-Favored Nation (MFN) provision. Some studies also explain that GSP matters for domestic politics because it is one-way, or *nonreciprocal*: if exporters have guaranteed market access abroad, they will not incur the costs of lobbying against tariffs at home, leaving import-competing constituents unopposed on trade policy. Özden and Reinhardt call this the "perverse" effect of GSP, their finding being that recipients are more protectionist when on GSP, and more liberal once off.<sup>3</sup> We argue that this logic is incomplete. The perversity of GSP requires that the program be *nondiscriminatory*, not just nonreciprocal. Here, discrimination means *differential treatment* of criteria, or the use of wholly different criteria, for determining the eligibility of recipients and their

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<sup>1</sup> Rose 2004a. Subramanian and Wei 2007

<sup>2</sup> Rose 2004a, 102.

<sup>3</sup> Özden and Reinhardt 2005.

goods. The US program, for example, requires recipients to respect American intellectual property and comply with arbitral decisions on investor rights under bilateral investment agreements, among other criteria. Like Europe, the US also ties GSP to labor standards, but Brussels has provisions on environmental standards and democratic governance. Under threat of losing access to GSP because of these conditions, exporters can hardly stay silent on domestic tariffs; in fact, to secure their market access abroad, they have to lobby on foreign policy more generally, triggered by concerns for their competitiveness. If GSP were *nondiscriminatory*, meaning that these conditions would be applied similarly across recipients, rather than on an ad hoc basis, this would lower the risk of investing in the program, and would allow exporters to disengage from the politics of domestic tariffs. This is exactly what GATT/WTO membership does. Herein lies *the* key to the debate over whether the WTO increases trade: GSP recipients benefit *less* because membership makes these nonreciprocal tariff preferences nondiscriminatory.

When GSP started in 1971 there was no requirement that recipients had to join the GATT. Then as now, membership did *not* change anything about GSP, either in terms of the breadth or depth of the tariff concessions on offer. The only thing GATT/WTO membership could do was offer recipients a chance to influence the rules governing GSP, and the opportunity to seek dispute settlement in the event these rules were misapplied. To be clear, rich countries are allowed to impose conditions on GSP. GATT/WTO membership does *not* give recipients a say in whether the US links GSP to respect for American intellectual property rights, for example. Rather, the aim was to shape the rules of nondiscrimination governing *all* GSP programs, prevent the ad hoc application of conditionality, and have recourse to judicial review for GATT/WTO members. With these benefits in

mind—at the cost of accession—exporters could be expected to withdraw from the debate over the domestic tariff. Taken together, the GATT/WTO makes GSP nondiscriminatory, and this brings out the worst in the domestic politics of these nonreciprocal tariff preferences. As a result, we argue that the *marginal effect* of joining the WTO will be *negative* for GSP recipients, meaning they are likely to realize lesser (positive) gains from joining the multilateral trading system.

We test our hypothesis on five different data sets. We start with our own data set, which looks at GSP-eligible dyads, in contrast to the literature’s look at all dyads (regardless of GSP eligibility), and allows us to assess exports, not just imports. We then turn to a replication of Rose,<sup>4</sup> whose data and methodology are the most widely used in the literature. We next replicate two studies by Tomz, Goldstein and Rivers,<sup>5</sup> both of which employ a broader definition of WTO membership than Rose. Finally, we replicate Subramanian and Wei’s study<sup>6</sup> of the WTO’s trade effects across different income groups. Taking a peek behind the curtain, we find strong, robust support for our hypothesis across all five data sets.

Others have found—but not explained—this result. In particular, Tomz et al. find that the interaction between GSP and GATT/WTO is *negative*, but insist that “[t]his finding is implausible but resistant to manipulation.”<sup>7</sup> We agree that this result is robust—it is, in fact, *the* most robust result across all five data sets—but contend that it is anything but implausible. On the contrary, the politics of protectionism in GSP countries belonging to the GATT/WTO has been hiding in plain sight since the program debuted in 1971. The

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<sup>4</sup> Rose 2004a.

<sup>5</sup> Tomz, Goldstein and Rivers (TGR) 2007(a) and (b).

<sup>6</sup> Subramanian and Wei 2007.

<sup>7</sup> TGR 2007(b)

implication for the literature is clear: *these* are the countries that cast doubt on the trade benefits of joining the multilateral trading system. GATT/WTO membership, as a check on discrimination in GSP, gives rise to a domestic political reality that is averse to liberalization. The GATT/WTO *per se* is not failing these countries, but rather, by making non-reciprocal tariff preferences less discriminatory, the institution brings out the full perversity of GSP.

Our paper proceeds as follows. First, we look at how GSP works. Second, we explain how GATT/WTO membership can serve as a check on discrimination in GSP. The intuition is that, by reducing the threat of ad hoc conditionality, GATT/WTO membership gives exporters greater confidence in GSP, leaving import-competing constituents unopposed on domestic tariffs. This results in a *negative marginal effect* of WTO membership on trade. Third, we introduce our methodology, and the five data sets used to test our hypothesis. Fourth, we report our results, and perform a variety of robustness checks. Finally, we conclude with implications.

## ARGUMENT

Our argument, in brief, is as follows. GSP is a nonreciprocal tariff preference, but it comes with conditions, and thus can be applied in a *discriminatory* way. To lessen this risk, GATT/WTO membership affords recipients the opportunity to influence the rules of GSP, and have access to dispute settlement. This leaves import-competing constituents calling the shots on trade policy, resulting in fewer imports, more costly intermediate inputs, and thus lower levels of trade resulting from GATT/WTO membership. In other words, and not with a little irony, the GATT/WTO, by making GSP nondiscriminatory,

brings out the “perversity” of this nonreciprocal program.<sup>8</sup> Put another way, the key to this protectionist story is *not* that GSP is nonreciprocal, but that the GATT/WTO makes GSP *nondiscriminatory*.

### *The Generalized System of Preferences*

GSP dates to a 1968 meeting in New Delhi, held under the auspices of the United Nations Conference on Trade and Development (UNCTAD). At the time, there were already one-way tariff preferences offered by several rich countries like Australia and Austria.<sup>9</sup> In this sense, the novelty of GSP was *not* that it was going to be nonreciprocal. On the contrary, the issue was that, in providing one-way tariff preferences to a larger group of poor countries, care was needed to *generalize* these programs in a nondiscriminatory way. Many of the conferees agreed that the patchwork of preferences offered by a few rich countries to their former colonies (and others) was discriminatory. Moreover, those granting preferences were members of the GATT, and while many GSP recipients were not, it was argued that the program should fit within the rules of the multilateral trading system. At first, the plan was to make GSP temporary. Vietnam proposed an upper bound of 20 years,<sup>10</sup> but by the time the first GATT waiver was signed in 1971, the program was given ten years. Europe’s GSP was the first one launched that year, and the US’s the 23<sup>rd</sup> in 1976.<sup>11</sup> GATT’s *Decision on Differential and More Favourable Treatment Reci-*

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<sup>8</sup> Özden and Reinhardt trace this “perverse” effect of GSP to being *nonreciprocal*, whereas we argue that this effect hinges on GSP being *nondiscriminatory*, which requires GATT/WTO membership.

<sup>9</sup> UNCTAD 1968. For excellent histories, see Bhattacharya 1976; Graham 1978; Mason 2004.

<sup>10</sup> UNCTAD 1968, 166.

<sup>11</sup> Graham 1978, 513. As of 15 March, 2013, there are thirteen GSP programs. European Union integration, with members adhering to the common external tariff, and other countries choosing to drop their programs, reduced the number from 23.

*procuity and Fuller Participation of Developing Countries*, known as the “Enabling Clause,” was to make GSP a permanent fixture of the global economy in 1979.

The Enabling Clause allows—*but does not require*—rich countries to give nonreciprocal tariff preferences to poor countries, even though the program runs afoul of MFN. Since GSP is nonreciprocal, the fear has always been that poor countries might fail to liberalize. Indeed, because GSP gives exporters duty-free market access abroad even if their government keeps tariffs high, these industries may have little incentive to lobby against protection at home, leaving import-competing industries unopposed.<sup>12</sup> The literature has long rehearsed this logic. Most influentially, Özden and Reinhardt find that recipients are more open to trade after being *removed* from GSP, the logic being that graduation or suspension re-engages exporters in questions over domestic tariffs.<sup>13</sup> Others echo this same concern, urging that GSP undercuts free trade in developing countries because it leaves them politically vulnerable to protectionism.<sup>14</sup>

This logic is compelling, but we argue that it cannot play out in full unless GSP is *nondiscriminatory*. To be sure, the risk of being removed from GSP would keep exporters fully involved not only in the debate over domestic tariffs, but in foreign policy more generally. By its very design, GSP comes with conditions, such that recipients are strongly motivated to keep good relations with grantors. The main fear for recipients is suspension from the program, but even graduation, which is based on per capita wealth, is often contested. Suspension from GSP hinges on conditionality. Programs include both discretionary and mandatory criteria for suspension, ranging from workers’ rights to democratic

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<sup>12</sup> Unless, of course, they import inputs, which is less likely for firms in these countries, given their level of development.

<sup>13</sup> Özden and Reinhardt 2005.

<sup>14</sup> Hudec 1987; Trachtman 2009.

governance.<sup>15</sup> For example, US legislation emphasizes compliance with investor- and intellectual property rights, the former being a mandatory criterion, the latter a discretionary one. In line with this, the US suspended Nicaragua (1987), Paraguay (1987), Romania (1987), Chile (1988), Sudan (1991) and Belarus (2000) for violating worker rights; Argentina (2012) for noncompliance with two arbitral decisions under the countries' bilateral investment treaty; and India (1992), Argentina (1997) and Ukraine (2001) for intellectual property rights violations.<sup>16</sup> Similarly, Europe's GSP legislation calls for the suspension of recipients for "systematic violations" of human rights, adds in environmental standards, and attributes the "temporary withdrawal" of Myanmar and Belarus to their "political situation" more generally.

The evidence suggests that these suspensions have the intended effect, not least in the case of human rights.<sup>17</sup> Beyond the specific criteria set out in legislation, studies find that GSP has broader influence. For example, Sykes notes that countries on US GSP are less likely to retaliate for unilateral trade sanctions imposed by Washington under Section 301, a unilateral trade sanction that was especially popular in the 1980s.<sup>18</sup> Likewise, Kelley finds that GSP recipients are more likely to sign agreements with Washington to resist surrendering American citizens to the International Criminal Court, even if these countries are not, themselves, a party to the Court.<sup>19</sup> In short, as Brazil explained to the WTO, GSP is "a tool of foreign policy of developed countries...."<sup>20</sup>

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<sup>15</sup> GATT Document C/M/69.

<sup>16</sup> This is not an exhaustive, but rather illustrative, list. We thank the Office of the United States Trade Representative for these data.

<sup>17</sup> Elliott 2000.

<sup>18</sup> Sykes 1992.

<sup>19</sup> Kelley 2007, 588.

<sup>20</sup> WTO Document WT/DSB/M/167, 19.

It was no accident that Brazil shared this perspective with the Geneva-based institution. The prompt for all of these foreign policy concerns is how the grantor's industries see their competitive position in relation to recipients. Both imports and exports factor in this calculation. First, recipients can have certain goods removed from GSP where import volumes exceed a threshold value. This means that they have an incentive to curtail sales abroad, keeping exports below these competitive limitations. Second, exporters in grantor countries can also call attention to a recipient's adherence to mandatory and discretionary criteria if their sales underperform in these markets. US companies and unions, for example, are the ones who flag intellectual- and worker's rights abuses on the part of GSP recipients. This means that, by virtue of GSP's conditionality, political and commercial criteria keep recipient exporters focused on domestic tariffs. Indeed, at the 1968 UNCTAD meeting, poor countries saw this as a problem; they reasoned that, if these one-way tariff preferences were to be taken seriously, the GATT/WTO would have to make GSP non-discriminatory.

#### *Trade Politics Under a Nondiscriminatory GSP*

GSP is *not* a legal obligation in the sense that rich countries are *not* obliged to offer these preferences to poor countries.<sup>21</sup> What, then, are recipients owed? Poor countries expected a lot in New Delhi. Some insisted, for example, that rich countries should not be allowed to set *any* eligibility criteria whatsoever. The concern was that criteria for removing certain goods, or graduating recipients on the basis of wealth, would be politicized. In this view, far from getting duty-free market access abroad, exporters would have to lobby on a wide range of foreign policy matters, all linked to the commercial concerns of gran-

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<sup>21</sup> Hudec 1987, 60.

tors. If exporters were to take full advantage of GSP, these preferences would have to be applied similarly across recipients according to the letter (and spirit) of the law. The only way to achieve this would be by joining the GATT/WTO, even though GSP was *not* limited to members of the multilateral trading system.

First, the Geneva-based institution would give recipients a say in GSP's rules, notably through the Enabling Clause. Indeed, as we discuss below, this has been treated as a source of law. Second, and most importantly, it would offer a forum in which recipients could have access to both *informal* (i.e., in GATT/WTO committees) and *formal* dispute settlement. Starting with rule making, the ink was not even dry on the first GATT waiver before poor countries urged the Geneva-based institution to discipline GSP. In 1971, for example, Spain raised concerns about GSP, but took comfort in the fact that it “retained all its rights under the General Agreement if it considered that the system caused prejudice to its interests.”<sup>22</sup> These rights, as poor countries explained, were unambiguous. In a remarkable statement, Brazil put the matter succinctly, urging in 1987 that “[t]he fact that [GSP] schemes were of a voluntary character and did not constitute a binding obligation for the preference-giving countries *did not ... give those countries the right to ignore the legal GATT framework* under which they had been authorized to implement such schemes.”<sup>23</sup> With nonreciprocity taken care of by a GATT waiver, and then the Enabling Clause, this meant that GSP was nondiscriminatory, *but only for members of the multilateral trading system*. Like Brazil, Egypt opined that, among other things, rich countries should notify GATT of *all* modifications to their GSP programs.<sup>24</sup> Singapore agreed, demanding that GSP eligibility criteria were arbitrary and in need of the GATT's full atten-

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<sup>22</sup> GATT Document C/M/69, 3.

<sup>23</sup> GATT Document C/M/209, 12. Emphasis added.

<sup>24</sup> GATT Document C/M/187, 13.

tion.<sup>25</sup> Nicaragua backed a request by Brazil to have GATT take up matters of GSP implementation more generally.<sup>26</sup> On an even grander scale, India showed support for participating in the GATT's Tokyo Round primarily because it saw these negotiations as an opportunity to bring GSP rules into sharper relief.<sup>27</sup>

Little has changed under the WTO. In preparation for the 1999 WTO Ministerial, for example, Cuba, the Dominican Republic and Honduras proposed that “[p]reference-giving countries *shall not subject preferential market access to conditionalities*, whether trade-related or not, *in order to comply fully with the provisions of the Enabling Clause*,” and should “not initiate any form of unilateral action against preference-receiving countries, including through ‘warnings,’ ‘watch lists,’ ‘priority watch lists’ or any other form of *discriminatory characterization*,” all of which ought to be “monitored” by the General Council every three months.<sup>28</sup> Likewise, Malaysia said that the Enabling Clause is “non-discriminatory” and asked the WTO to ensure “compliance with Enabling Clause” so that GSP is “generalized, *non-discriminatory* and non-reciprocal in nature.”<sup>29</sup> Offering specific examples, India explained that “there is an attempt to give concessions under their GSP scheme subject to recipient governments committing to comply with certain environmental/labour standard norms. *This is in violation of the ‘enabling clause’ of GATT relating to GSP which clearly sets out that GSP must be non-discriminatory, non-reciprocal and generalized.*”<sup>30</sup> More generally, the GATT Council explained in 1995 that recipients were

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<sup>25</sup> GATT Document C/M/193, 6.

<sup>26</sup> GATT Document C/M/208, 19.

<sup>27</sup> GATT Document C/M/100, 4.

<sup>28</sup> WT/GC/W/377. Emphasis added.

<sup>29</sup> WT/GC/W/188. Emphasis added.

<sup>30</sup> WT/GC/W/123, 4. Emphasis added.

raising concerns about “new conditions under some GSP schemes, as well as changes regarding beneficiary countries of GSP schemes.”<sup>31</sup>

Importantly, recipients expected that their rights would be enforced by the GATT. GSP has only twice been the subject of *formal* dispute settlement: India filed a WTO case against Europe, known as *EC—Tariff Preferences*, escalating this to the Appellate Body. A second case, brought by Thailand, with support from Colombia and Costa Rica, ended in consultations.<sup>32</sup> On the other hand, *informal* dispute settlement, which involves raising complaints before GATT/WTO committees, has been common. For example, Singapore took up its frustration over being graduated from US GSP, noting its intent to “raise this matter again in other appropriate GATT bodies.”<sup>33</sup> A decade later, Brazil requested ad hoc consultations with several grantors before the GATT’s Committee on Trade and Development, hoping to curb what it perceived to be discriminatory given its read of the Enabling Clause.<sup>34</sup> Likewise, in 1988, Chile sought meetings over US GSP, raising concerns that caused Europe to worry about its own GSP.<sup>35</sup> In fact, these very same concerns were subsequently litigated in *EC—Tariff Preferences*.

The Appellate Body’s ruling in *EC—Tariff Preferences* speaks to our argument. It establishes, among other things, that the Enabling Clause is an “exception,” not a waiver, to GATT Article I:1 MFN.<sup>36</sup> It says that GSP programs should be nondiscriminatory even if “identical” tariff preferences are not offered to all recipients. But as the Appellate Body cautions, for this to hold true, “preference-granting countries are required, by virtue of the

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<sup>31</sup> WT/GC/W/25, Section VII, 4.

<sup>32</sup> WTO Document WT/DSB/M/117, 7-8.

<sup>33</sup> GATT Document C/M/217, 36.

<sup>34</sup> GATT Document C/M/152, 29.

<sup>35</sup> GATT Document C/M/220, 25.

<sup>36</sup> WTO Document WT/DS246/AB/R, paragraph 99.

term ‘*non-discriminatory*,’ to ensure that identical treatment *is available to all similarly-situated GSP beneficiaries....*”<sup>37</sup> Note that the term “similarly-situated” is with respect to the “development, financial and trade needs” of the recipients in question. So if Europe offers a provision to Pakistan, for example, to assist it in the fight against drugs, Europe must offer this provision to “all GSP beneficiaries that are similarly affected by the drug problem.”<sup>38</sup> In practice, since the WTO has resisted ruling on the “development” needs of poor countries in disputes,<sup>39</sup> it is difficult to see how *differential* conditionality will pass legal scrutiny in the future, even between developing and least-developed countries.

India’s reaction to the verdict in *EC—Tariff Preferences* is also revealing. In explaining its disappointment, India demanded that, had the Appellate Body consulted more closely the documents from the 1968 UNCTAD meeting, it would have had no choice but to rule that “differentiation between developing countries was *impermissible*.”<sup>40</sup> The Appellate Body did not entirely disagree; once the “development, financial and trade needs” of recipients are taken into account, there may be little room left for differential treatment of poor countries. Unsurprisingly, Trachtman concludes that GSP “will be tested in future litigation.”<sup>41</sup> That GSP *can* be tested in future litigation goes to our point: the program is, indeed, disciplined by the GATT/WTO. Note, as well, that the volume of informal versus formal dispute settlement is not unique to GSP. In terms of regulatory politics, for example, the number of “specific trade concerns” brought before WTO committees on health

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<sup>37</sup> WTO Document WT/DS246/AB/R, paragraph 173. Emphasis added.

<sup>38</sup> WTO Document WT/DS246/AB/R, paragraph 180.

<sup>39</sup> See, for example, *Brazil—Aircraft*, in which, despite the invocation of a special and differential provision concerning subsidies, the WTO left Brazil to decide its “development goals,” rejecting any effort by Canada to weigh in on this issue, even though the WTO ruled against Brazil on the subsidy.

<sup>40</sup> WTO Document WT/DSB/M/167, 11. Emphasis added.

<sup>41</sup> Trachtman 2009, 116.

and safety standards, and technical barriers to trade, outnumber formal dispute settlement by more than 10 to 1.<sup>42</sup>

The last issue to address is whether GATT/WTO accession would make it unlikely that import-competing industries, even if unopposed by exporters, could preserve their protectionism at home. The WTO nods to this concern: “[a] major challenge for acceding governments is building and sustaining stable coalitions for trade opening.”<sup>43</sup> In fact, Pelc explains that these import-competing industries are unlikely to be asked for many concessions. Importantly, the markets of GSP recipients are generally of little economic value to exporters in rich countries, making it unlikely that they will mobilize to make demands of applicants. Along these lines, Pelc finds that poor countries, more generally, get generous accession terms.<sup>44</sup> Indeed, the WTO proscribes asking too much from poor applicants. In particular, the norm, long since codified, is that “*WTO Members shall exercise restraint in seeking concessions and commitments on trade in goods and services....*”<sup>45</sup> In particular, developing countries get “special and differential” treatment on all of their accession terms, including a longer period in which to phase in obligations (like intellectual property) and a prohibition against conditioning their membership on signing the so-called “plurilateral” agreements, notably the one covering government procurement.

To see this as work, consider, for example, Nigeria, Egypt and Fiji. Each is a GSP recipient and all are members of the WTO. Nonetheless, Nigeria has capped only 20% of its tariffs, and negotiated an average of 106 percentage points of “overhang” between its bound and applied rates (versus an average of 18% for all WTO members), leading the

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<sup>42</sup> Trade-specific concerns are to be distinguished from notifications more generally. As the term suggests, they center on complaints about particular types of potential violations of the letter, or spirit, of the law.

<sup>43</sup> WT/ACC/13, 5

<sup>44</sup> Pelc 2011.

<sup>45</sup> WTO Document WT/L/508, 2. Emphasis added.

WTO to warn that its tariff is “quite unpredictable and acts as a significant disincentive to investment.”<sup>46</sup> Even more to our point, Egypt specifically attributes much of this problem to GSP itself, noting to the WTO’s Committee on Trade and Development that “*one of the fundamental ways in which developing countries are exempted from WTO disciplines regarding market access is the principle of non-reciprocity in trade negotiations with developed countries in reducing [sic] tariff or removing other trade barriers. This principle is recognized in Article XXXVI of GATT 1994 and in the enabling clause. Consistent with these provisions, many developing countries have not bound their tariffs on industrial products to levels comparable to those of developed countries.*”<sup>47</sup> Looking toward a future without GSP, the WTO’s 1997 *Trade Policy Review* of Fiji lends further weight to our argument. Here, Fiji explains that, with the expiration of EU preferences, the country will have to use “a more reciprocal, tariff-based arrangement,” and that its reform efforts, notably in the sugar industry, will have to succeed if Fiji is to remain competitive, the point being that GSP, not WTO accession, had made this a political reality.<sup>48</sup> None of this is to say that accession is costless, but rather that GATT/WTO membership is highly accommodating of the domestic trade politics to which GSP gives rise.

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<sup>46</sup> WTO Document WT/TPR/S/247, Rev. 1.

<sup>47</sup> WTO Document WT/GC/W/109, paragraph 16. Emphasis added.

<sup>48</sup> WT/TPR/M/24/Add.1, paragraph 3.1.

Summing up, we argue that membership in the GATT/WTO serves as a check on the discrimination inherent in GSP. In turn, this gives rise to a domestic political situation that is averse to liberalization. By making the preferential treatment under GSP nondiscriminatory, the WTO serves to bring out the unintended consequences of the GSP. This leads to the following testable hypothesis:

*Hypothesis: the marginal effect of WTO membership on trade flows will be lower for GSP recipients than for non-GSP recipients*

## EMPIRICS

To test our hypothesis, we need a standard gravity-model dataset that focuses on imports into, and exports from, GSP-eligible countries. This we build from scratch. As a second step, not least because there is a sizable literature on the trade effects of GATT/WTO membership, we include our interaction term in replications of four studies: Rose;<sup>49</sup> two by Tomz, Goldstein and Rivers;<sup>50</sup> and Subramanian and Wei.<sup>51</sup> Overall, we find that, regardless of the separate effects of GSP and the GATT/WTO across each replication, our main variable of interest—the interaction between GSP and GATT/WTO membership (GSP\*GATT/WTO)—is *always* negative and statistically significant. In other words, countries that are both GSP recipients and GATT/WTO members trade less than countries with access to one or the other. This puts the literature’s results on GSP in a new light, but it also offers a counterintuitive view of how nondiscrimination can sometimes work in unexpected ways in the multilateral trading system.

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<sup>49</sup> Rose 2004a.

<sup>50</sup> TGR 2007(a) and 2007(b).

<sup>51</sup> Subramanian and Wei 2007.

*The marginal effect of WTO membership on trade, accounting for GSP*

We start by following Anderson and van Wincoop (2003) and specify a symmetric model of trade (directed dyad), linking trade flows (both imports and exports) to economic size, bilateral trade barriers (distance), multilateral resistance, and our policy variables of interest in a particular country (rather than a country-pair).

As per convention, trade flows are both the log of exports from country  $i$  to country  $j$  and the log of imports to country  $i$  from country  $j$ . The data come from the IMF's Direction of Trade Statistics (DOTS) for 1948-2011.<sup>52</sup> We rely on importer's trade values where available, as these statistics tend to be more reliable than export figures.<sup>53</sup> Thus, we measure exports from country  $i$  to country  $j$  as imports reported by country  $j$  from country  $i$ . Since most countries report imports in cost, insurance and freight values (CIF), and exports in free on board values, we subtract 10 percent from reported imports to account for CIF costs. Where import data are not available, we use export data (exports reported by country  $i$  to country  $j$ ). Similarly, we measure imports to country  $i$  from country  $j$  as those reported by country  $i$ . Where these data are unavailable, we supplement exports from country  $j$  to country  $i$ , inflated by 10 percent to account for CIF costs, as above. Continuing with convention, we eliminate all export and import flows of 0 when creating the log of trade flows. Although 17 percent of import flows and 21 percent of export flows in our dataset are 0s, and thus eliminated from the dataset, the vast majority of the 0s represent country-pairs that do not trade with each other on a normal basis, and

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<sup>52</sup> IMF 2011.

<sup>53</sup> States are more likely to tax and therefore monitor goods flowing into their countries rather than out. See Barbieri et al (2009) for their justification of the measurement of trade data in the Correlates of War dataset.

their presence in the estimations would be likely to bias our estimates.

Second, we eliminate developed countries from our list of target (importing and exporting) countries. Developed countries are *not eligible* for GSP. Much of the literature ignores this point, but the problem is that, if we code these as 0s, our results may be biased. Looking behind the curtain, we show that our results also work when developed countries are included. That said, our main specifications take these rich countries out.

Third, we include dyad fixed effects to deal with the myriad observable and unobservable factors that likely to determine trade flows between countries. Our results also hold up for fixed-country (importer and exporter) effects and random effects specifications.

Finally, we exclude observations from years prior to 1970, as GSP was first introduced in 1971. That said, we show that our results work when we expand the dataset back to 1948, but our main specification focuses on years during which GSP was formally in operation.

### *Independent Variables*

Our key independent variables are whether a country is a recipient of GSP, and whether it is a member of the GATT/WTO. *GSP* is coded as 1 in each year that country *i* received one-way tariff concessions from country *j*. Importantly, our data set includes *all 11 GSP schemes* on offer in the global economy, as notified to UNCTAD and coded by Herz and Wagner.<sup>54</sup> Data on WTO membership is somewhat controversial in the litera-

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<sup>54</sup> We thank Herz and Wagner (2010) for making their data available. In addition to traditional GSP, Herz and Wagner 2010 code GSP as a one for any non-reciprocal and preferential relationship, including African, Caribbean and Pacific trade preferences, the African Growth and Opportunity Act, and Everything but Arms.

ture. We follow the standard coding of membership as being equal to 1 in any year that a target country is a *formal* member of GATT/WTO. However, in our robustness checks, we show that our findings on the conditional nature of GSP and GATT/WTO are robust to considerations of non-member participation in the multilateral trading system as well as the membership of both parties in the relationship.<sup>55</sup>

### *Control Variables*

Our choice of control variables follows the literature on gravity models of trade, supplemented by a number of studies on the relationship between WTO membership and trade. We include distance between country-pairs and joint income variables. Distance is measured as the log of the great circle distance between capital cities in kilometers. The data are from Gleditsch.<sup>56</sup> Income is measured as the log of each country's *GDP* and *GDP per capita*. Additionally, we follow Rose<sup>57</sup> in augmenting the standard gravity equation with country- and dyad-level factors that may affect trade (a few of these are only included in non-dyadic fixed effects models).

We include a dummy variable equal to one if: one country is currently a *Colonizer* of the other (*Current Colony*); both belong to the same currency union (*Common Currency*); and both countries are members of a Regional trading block (*Regional*). In non-dyadic fixed effects estimations, we include a dummy variable equal to one if: the country-pair shares a *Common Language* as their official language; the countries share a *Border*; both countries were colonies of the same colonizer (*Common colony*); and one country was ever a *Colonizer* of the other (*Ever Colony*).

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<sup>55</sup> Rose 2004 and TGR 2007(a) and (b).

<sup>56</sup> Gleditsch

<sup>57</sup> Rose 2004

We include year fixed effects to control for time-varying concerns, and either dyad-fixed effects or country-fixed effects for both the country of interest, and its paired trade partner, to proxy for multilateral resistance.<sup>58</sup> Finally, as is convention, our robust standard errors are clustered by directed-dyad.

Our data cover 178 countries for the period 1970-2011.<sup>59</sup> Table 1 presents descriptive statistics.

[Table 1 here]

### *Models*

Our basic specification takes the following linear form: the log of imports to (exports from) country  $i$  in year  $t$  depends on country  $i$ 's access to GSP from country  $j$  in year  $t$ , membership of country  $i$  in the WTO in year  $t$ , our vector of gravity variables (**Gravity**), our vector of control variables (**Controls**), country-level fixed effects for the importer ( $M_i$ ) and the exporter ( $X_i$ ) (or dyadic fixed effects), fixed period effects ( $\tau$ ), and an error term ( $\varepsilon$ ):

$$\begin{aligned} \text{Log Imports}_{i,j,t} = & \alpha + \beta_1 \text{GSP}_{i,j,t} + \beta_2 \text{WTO}_{i,t} + \beta_4 \mathbf{Gravity}_{i,j,t} \\ & + \beta_5 \mathbf{Controls}_{i,j,t} + \gamma M_i + \delta_j + \tau + \varepsilon_{i,j,t} \end{aligned} \quad (1)$$

Thus, our basic estimation replicates the standard gravity model of trade and allows us to estimate the average association between being a GSP recipient and GATT/WTO membership and trade flows. However, our theory leads us to believe that

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<sup>58</sup> In the sensitivity analysis we substitute a time trend for period specific effects and include both to check the robustness of our estimates. Further, we include dyadic fixed effects rather than country-level and random effects models.

<sup>59</sup> A list of included countries is available in Appendix B.

these relationships are dependent on each other. To test this hypothesis, we estimate equation (2), which includes an interaction between *GSP* and *WTO*:

$$\begin{aligned} \text{Log Imports}_{i,j,t} = & \alpha + \beta_1 \text{GSP}_{i,j,t} + \beta_2 \text{WTO}_{i,t} + \beta_3 \text{GSP} * \text{WTO}_{i,j,t} \\ & + \beta_4 \text{Gravity}_{i,j,t} + \beta_5 \text{Controls}_{i,j,t} + \gamma M_i + \delta_j + \tau + \varepsilon_{i,j,t} \end{aligned}$$

### *Results*

Tables 2 and 3 present estimates of our dyad-fixed effects model for exports and imports, as well as two alternative specifications: fixed country effects (for both importers and exporters) and random effects. We find strong support for our argument across all specifications: the marginal effect of WTO membership on trade is lower for GSP recipients than for those not on GSP. Specifically, those countries that are recipients GSP *and* members of the GATT/WTO trade less (i.e., for both imports and exports) than other countries that are *either* on GSP, or members of the multilateral trading system, *but not both*.

Model (1) excludes the interaction term between GSP and WTO membership. We believe that this equation is mis-specified without the interaction term, but include it to compare with the extant literature. Here, GSP has a positive association with imports and a negative association with exports, while the opposite is true for GATT/WTO membership.

Model (2) includes the interaction term between GSP and WTO. Here, WTO membership alone (for those countries not on GSP) again has a negative association with imports and a positive association with exports, while GSP by itself (for those countries that are not members of the WTO) has a positive association with both exports and imports. The interaction term is negative and significant, indicating that the relationship is

indeed conditional. Specifically, the marginal effect of WTO membership on exports for developing countries *on* GSP is equal to  $-23\% \approx e^{(0.172-0.431)} - 1$ , in other words, all else equal, developing countries *on* GSP who are GATT/WTO members export 23% less than those countries *on* GSP who are not GATT/WTO members. Similarly, the marginal effect of GATT/WTO membership on imports for those developing countries *on* GSP is equal to  $-25\% \approx e^{(-0.042-0.239)} - 1$ , or GATT/WTO members import 25% less than developing countries who are not members of the GATT/WTO.

The results for our interaction term and GSP are very similar for the random effects model and country-fixed effects models across exports and imports. Not surprisingly, as in the general models, the impact of WTO membership, by itself, on trade flows is mixed. Thus, *regardless* of the estimation strategy we use, a country that is *on* GSP *and* is a WTO member trades less than a country that is either *on* GSP alone, or is a GATT/WTO member without being *on* GSP.

[Tables 2-3 here]

To take a slightly different look at our results, we consider the average marginal effects on imports and exports of GATT/WTO membership for those countries *on* GSP versus not, and the marginal effects of being *on* GSP for members versus non-members. Table 4 displays these results using the coefficient estimates from our dyadic fixed effects models of exports and imports. The results again show that overall trade for countries that are both *on* GSP, and are members of the WTO, is *lower* than for countries that are party to only one of the two institutions. The average marginal effect of joining the GATT/WTO is 26 percent lower exports for those countries *on* GSP, versus 17 percent higher for those countries that are not *on* GSP. Likewise, the average marginal effect of

GSP for countries that are WTO members is exports 25 percent below, as opposed to exports 19 percent higher for non-WTO members.

The results are similar for imports; the average marginal effect of joining the WTO is imports that are on average 28 percent below non-members for those countries on GSP versus import levels 4 percent below non-members for those countries that are not on GSP. The average marginal effect of gaining GSP for those countries that are WTO members is imports 6 percent higher as opposed to imports of nearly 31 percent above for non-WTO members. So regardless of the independent impact of GSP or GATT/WTO membership, the combination of the two has a negative impact on both exports and imports.

[Table 4 here]

Taken together, these results offer clear support for our hypothesis. Moreover, they shed new light on the concern that GSP not only impairs a recipient's imports, but may reduce exports as well.

### *Sensitivity Analysis*

The performance of policy variables in gravity models can be significantly affected by changes to the sample and specification. To check the robustness of our results, we conduct a variety of additional tests. Unless stated otherwise, all of the estimates below rely on dyad-fixed-effects estimation.

First, in Tables 5 and 6, we make some changes to the sample for both imports and exports, respectively. Models (1) and (2) of both tables include high-income countries as potential importers and exporters, regardless of the fact that they are not eligible

for GSP. In Model (1) we include a measure for high-income GATT/WTO membership separate from developing countries, as in Subramanian and Wei. In Model (2) we pool all WTO members together. Model (3) includes only developing countries, but opens the dataset to the years 1948-2011 (i.e., prior to the formal launch of GSP in 1971). Finally, in Model 4, we include both high-income countries (pooled with developing countries) and the earlier time period. In each of these models, the marginal effect of WTO membership is significantly smaller for those countries on GSP than those that are not partaking in these one-way tariff preferences.

[Tables 5-6 here]

Second, in Tables 7 and 8 we look at a few potential time dynamics for imports and exports. Model (1) in both tables is our primary estimation including a lagged dependent variable. This lagged dependent variable is highly significant and very strong, swamping both GSP and WTO membership. Importantly, however, the interaction retains its negative sign and significance. Model (2) excludes the time dummy variables and includes a time counter. Model (3) averages all variables over a five-year time period to deal with any potential spikes in trade flows. Again, our results remain robust to these changes in specification: the interaction between GSP and the GATT/WTO is negative and significant, indicating lower levels of trade for countries that are both on GSP and are members of the GATT/WTO.

[Tables 7-8 here]

Third, we look to see if there are any differences across income groups. Appendix Tables 9 and 10 show estimates of our main specification for all developing countries by

upper-middle income (Model 1), lower middle-income (Model 2), and low-income countries (Model 3). Here, too, our results hold for each of the income groupings.

[Tables 9-10 here]

Fourth, we look for regional differences. Appendix Tables 11 and 12 display estimates of our model for East Asia and the Pacific (Model 1), Europe and Central Asia (Model 2), Latin America and the Caribbean (Model 3), Middle East and North Africa (Model 4), South Asia (Model 5), and Sub-Saharan Africa (Model 6). The only region where our results differ from our main results in the Middle East and North Africa and South Asia, likely reflecting the lack of reach of either GSP or GATT/WTO to these regions and the “*rentier state*” orientation of many of these economies (i.e., their reliance on oil rents versus domestic tariff revenue).

[Tables 11-12 here]

Taken together, our results for the marginal effect of WTO membership, by whether or not a country is on GSP, are strongly robust. We believe that some of the confusion surrounding the relationship between WTO membership and trade flows may stem from a misunderstanding of the relationship between GSP and the WTO. The literature has long appreciated that GSP can make recipients more protectionist than they otherwise would be. Our argument is that, in pursuit of a *nondiscriminatory* GSP, these recipients have an incentive to join the GATT/WTO, rather than simply take advantage of trade as aid. However, in doing so, we find that empirically, the two do not mix well in terms of facilitating either exports or imports.

## *Replications*

We have shown that the relationship between GSP and the WTO performs as we hypothesize for both exports and imports under our modified gravity model of trade. That is, regardless of the effect of the WTO or GSP individually on trade flows, the policies are contingent on each other and together have a negative effect on trade flows. To better insure the robustness of our results, we replicate three of the most influential studies examining the trade effects of the WTO, comprising four data sets: Rose;<sup>60</sup> two by Tomz, Goldstein and Rivers;<sup>61</sup> and Subramanian and Wei.<sup>62</sup> We find strong support for our hypothesis across all four replications. All replication tables are available in an online appendix.

We did not use any of these models as our main specification because of how they model GSP. In Rose, as well as in Tomz, Goldstein and Rivers, GSP is coded as a 1 or 0 depending on whether it is offered by one country in the dyad to the other. The problem is that most of these dyads are *not* eligible for GSP. In the case of US-EU trade, for example, their dyad is scored 0, when in fact neither is eligible for these one-way tariff preferences. This means that, for our purposes, there are a large number of *irrelevant* dyads in the data, potentially biasing the results. Subramanian and Wei do something different. They have one variable that is the better of the market access enjoyed by that dyad, whether under the WTO, a preferential trade agreement or GSP. This is interesting, but for our purposes this setup makes it impossible to test the interaction between GSP and the WTO. Subramanian and Wei, and Tomz, Goldstein and Rivers, also look only at imports, whereas GSP begs attention to exports. We replicate each of their models in turn,

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<sup>60</sup> Rose 2004a.

<sup>61</sup> TGR 2007(a) and 2007(b).

<sup>62</sup> Subramanian and Wei 2007.

including an interaction between GSP eligibility and GATT/WTO membership.

*Replication 1: Rose*<sup>63</sup>

Rose measures trade as the log of the average value of exports and imports between a pair of countries. This is actually an average of four values as exports as reported from  $i$  to  $j$  is in almost all cases not equal to imports as reported to  $j$  from  $i$ . For our purposes, the key is whether a country is a recipient of GSP and a member of the GATT/WTO. Rose codes *GSP* as 1 in each year that a bilateral GSP relationship existed between a country pair. To measure WTO membership at the dyad-level, Rose creates three exclusive groups: both countries in the dyad are WTO members (*both in*), one country in the dyad is a member (*one in*) or none are members (the excluded category). To Rose's model, we add an interaction between GSP and *both in* and *one in*.

Rose follows a standard gravity model, including distance between country-pairs, joint income variables and several dyad-level factors measuring whether: the country-pair shares a *Common Language* as their official language; the countries share a *Border*; one country is a *Colonizer* of the other; both are members of the same *Currency Union*; and both countries are members of a *Regional* trade bloc. We add year-fixed effects to control for time-varying concerns, and, diverging slightly from Rose, employ both dyad-fixed effects (models (1) and (2)) and importer/exporter-fixed effects (models (3) and (4)). Tomz et al<sup>64</sup> detail the theoretical and empirical reasons for preferring a fixed effects estimator in this case, most importantly the unobservable dyadic differences that would be likely to bias the OLS estimator. Further, Rose includes fixed effects in a number of ro-

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<sup>63</sup> Rose 2004a.

<sup>64</sup> TGR 2007(a)

bustness checks and acknowledges, in response to a critique, that including them makes little difference to the fit of the model<sup>65</sup> Rose's dataset covers the years 1948-1999, with gaps.

Replication Table 1 presents fixed-effects (by dyad and importer/exporter) estimates of Rose's specification (Models 1 and 3) and his specification including our interaction between GSP and the WTO (Models 2 and 4). As in Rose, WTO membership has a weak (though significant) association with trade flows and GSP has a strong positive association with trade flows. It is in the marginal effect of WTO membership for those members on GSP that might help to explain the negative relationship between WTO membership and trade that Rose finds in a number of his specifications. Specifically, when both countries in the dyad are members of the WTO, but neither is a GSP recipient, the marginal effect of membership on trade is about 19%  $\approx e^{(0.17)} - 1$ . However, when both countries in the dyad are WTO members and at least one is on GSP, the marginal effect of WTO membership on trade is actually negative: -12% or -49% depending on the model. The effect is smaller when only one country is a member, but we do not interpret the marginal impact, because here, the interaction does not necessarily represent a real relationship between GSP and the WTO. In a large number of the cases, one party is a member to the WTO and the other is on GSP.

*Replications 2 and 3: Tomz, Goldstein and Rivers*<sup>66</sup>

Tomz, Goldstein and Rivers criticize Rose's accounting of how non-member *participants* in the WTO are counted as non-WTO *members*. The idea is that some countries,

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<sup>65</sup> Rose 2004b

<sup>66</sup> TGR 2007(a) and (b).

which were not formally members of the WTO, inherited obligations from colonizers, or enjoyed rights while awaiting membership because they were politically consequential in a foreign policy context. While we have no theoretical reason to believe that non-member participation should be any more or less likely than membership to affect the conditional relationship between GSP and the WTO, we replicate both their original study (which is in turn a replication of Rose) and a second study which expands the time period of the dataset and focuses on imports rather than the average of imports plus exports as in Rose. Both help us to calibrate whether our results are sensitive to definitions of membership. Rather than a simple membership variable, the authors break WTO membership into five categories: 1)  $i$  and  $j$  are formal members (*gattff*); 2)  $i$  or  $j$  is a formal member, the partner is a non-member participant (*gattfn*); 3)  $i$  and  $j$  are non-member participants (*gattnn*); 4)  $i$  or  $j$  is a formal member, the partner is not a member (*gattfo*), a non-formal member, 5)  $i$  or  $j$  is a non-member participant, the partner is a non-member (*gattno*). We include each of these variables with both countries as non-members as the excluded category, and include the interaction between each and GSP.

In Replication Table 2, we present dyad and importer/exporter fixed-effects estimates of a replication of Tomz, Goldstein and Rivers<sup>67</sup> (Models 1 and 3) and a replication including our interaction terms (Models 2 and 4). As in the original article, the replication shows a strong positive association between trade flows and any type of membership pairing, as compared to non-WTO membership. However, the interaction between WTO membership and GSP on trade is negative and significant. That is, in most cases countries are worse off being both WTO members and having GSP than having neither, and in all cases they are worse off having both than being WTO members alone. Again, we do not

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<sup>67</sup> TGR 2007(a)

interpret the marginal impact, because the interaction does not necessarily represent a real relationship between GSP and the WTO.

In Tomz, Goldstein and Rivers<sup>68</sup> they expand on their replication of Rose, focusing not only on institutional standing, but also on institutional embeddedness. Their econometric focus is similar to their AER piece, but the data is extended through 2004 and they focus on imports between directed dyads of all countries in the world. Replication Table 3 presents directed dyad fixed-effects estimates of a replication of their main model (Model 1), a replication including our interaction terms (Model 2) and a replication including our interaction term but limiting the time frame to post 1970 and the introduction of GSP.

As in the original article, the replication shows a strong positive association between trade flows and any type of membership pairing, as compared to non-WTO membership. Further, as with our replication of their Rose data, once we include our interactions between GSP and the WTO, the marginal effect of WTO membership on trade for those members on GSP is always less than for those that are only members of the WTO or that only have access to GSP.

#### Replication 4: Subramanian and Wei<sup>69</sup>

Subramanian and Wei argue that WTO membership works differently depending on the income level of the WTO member. Specifically, they hypothesize and show that high-income countries benefit from trade flows while low-income countries do not. Their gravity model is a mirror of Rose in terms of control variables, but differs in three im-

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<sup>68</sup> TGR 2007(a)

<sup>69</sup> Subramanian and Wei (2007)

portant respects. First, rather than examining a dyadic relationship, they use a unidirectional model and look only at imports to  $i$  from  $j$ , hypothesizing that the trade effects of GSP and the WTO relate to imports.

Second, they code WTO membership according to income level to separate out their hypothesized effect, so *WTO Developed* is a dummy variable equal to one for high-income countries that are members of the WTO and *WTO Developing* is a dummy variable equal to one for low-income countries that are members of the WTO.

Third, and most interesting from our perspective, Subramanian and Wei hypothesize that the WTO, GSP and free trade areas (FTAs) offer differing degrees of liberalization and code them as *mutually exclusive* variables. This means that GSP is coded as 1 in any year that country  $j$  offers GSP to country  $i$ , *unless* the pair of countries is a member of the WTO or an FTA or customs. This specification is problematic for our purposes because we want to understand the conditional relationship between GSP and the WTO. Thus, we recode Subramanian and Wei's data so that these categories are not mutually exclusive: GSP is equal to 1 in any year that country  $j$  offers GSP to country  $i$ , regardless of their status as WTO or FTA members.

Replication Table 4 presents dyad and importer/exporter fixed-effects estimates of a replication of Subramanian and Wei also using their data, adjusting for our recoding of their GSP variable (Models 1 and 3) and a replication including our interaction terms (Models 2 and 4).

We focus on the models including the interaction terms. As in their model, the marginal effect of WTO membership is positive for developed countries and negative for developing countries. Specifically, developed country members of the WTO have import

flows that are  $63\% \approx e^{(.49)} - 1$  or  $34\% \approx e^{(.29)} - 1$  higher than non-members, depending on the model. Developing country WTO members that are not on GSP have import flows that are 7% or  $28\% \approx e^{-(.32)} - 1$  lower than non-members. But things are worse for developing country WTO members on GSP. These countries, on average, have import flows that are  $18\% \approx e^{-(.07-.13)} - 1$  or  $41\% \approx e^{-(.32-.21)} - 1$  lower than their counterparts that are neither WTO members nor on GSP.

The inclusion of an interaction term between GSP and WTO in some of the most influential studies examining the trade effects of the WTO clearly shows that these policy instruments cannot be looked at in isolation. The marginal effect of WTO membership on trade flows is smaller for recipients of GSP than for non-recipients, including those just on GSP, and those who only pursue GATT/WTO membership.

## CONCLUSION

In the debate over whether the WTO increases trade, a crucial variable has been hiding in plain sight: GSP. Not that scholars have failed to control for GSP. On the contrary, many studies, starting with Rose, have been quick to observe that GSP may have a more profound influence on trade than membership in the multilateral trading system. But this misses the point that GSP was always intended to work within the framework of GATT. Indeed, the rich and poor countries that gathered in New Delhi to design GSP in 1968 were keenly aware that, if “trade as aid” was to work in any meaningful sense, the program would have to be *nondiscriminatory*, not just nonreciprocal. This meant joining the GATT/WTO to make the most of the one-way tariff preferences on offer by the rich, even if many poor countries, themselves, were skeptical of trade liberalization per se. The

GATT/WTO provided a check against discrimination in GSP, but rather than helping developing countries make the most of the multilateral trading system, membership locked in a domestic political economy that was anything but conducive to liberalization.

Two implications follow. First, it would be a mistake to underestimate the effects of the WTO simply because GSP recipients do not liberalize like other members. That membership has differential effects across countries is hardly surprising. Subramian and Wei, for example, premise their entire study on the suspicion that this is true. And Tomz et al. provide an important insight that even GATT/WTO membership, itself, is not the same for all countries, in that some are informal versus formal beneficiaries. We contribute to this line of reasoning by identifying a key institutional tension: GSP conditional on GATT/WTO membership. While we are not the first to observe the result that this interaction is negative, we are the first to explain it. The literature has long known to look at GSP in this regard. Our contribution, then, is twofold: the key is not GSP itself, but rather GSP conditional on GATT/WTO membership; and GSP's nonreciprocal nature is not the key, but instead the prospect that GATT/WTO membership makes GSP nondiscriminatory.

Second, and related, preventing nondiscrimination in trade may sometimes backfire. GSP is a case in point. Conferees in New Delhi knew that in order for these one-way tariff preferences to work, the program had to be nondiscriminatory, not just nonreciprocal. This encouraged recipients to join the multilateral trading system because they wanted to make the most of GSP, not because they necessarily believed in trade liberalization per se. Of course, countries join the GATT/WTO for a variety of reasons, as the literature

makes clear. Our point is that GSP should be counted among them, and that, in an ironic twist, GATT/WTO membership made “trade as aid” anything but.

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Table 1 – Summary Statistics

Variable	Observations	Mean	Standard Deviation
Log of Imports	271,404	15.32	3.33
Log of Exports	268,582	15.06	3.44
GATT/WTO	332,702	0.73	0.44
GSP	332,702	0.24	0.43
Log of Distance	332,702	8.17	0.83
Log real GDP Importer	332,702	23.25	2.04
Log real GDP Partner	332,702	24.28	2.29
Log real GDP pc Importer	332,702	7.15	1.16
Log real GDP pc Partner	332,702	8.05	1.58
Common Language	332,702	0.20	0.40
Common Border	332,702	0.03	0.18
Common Colony	332,702	0.11	0.32
Current Colony	332,702	0.00	0.01
Ever Colony	332,702	0.01	0.11
Common Currency	332,702	0.016	0.13
FTA	332,702	0.072	0.26

Table 2: Directed Dyads—Exports

Model	(1)	(2)	(3)	(4)
GATT/WTO	0.091*** (0.011)	0.172*** (0.012)	-0.132*** (0.017)	0.175*** (0.012)
GSP	-0.142*** (0.016)	0.184*** (0.024)	0.327*** (0.023)	0.219*** (0.024)
GATT/WTO*GSP		-0.431*** (0.024)	-0.022 (0.021)	-0.426*** (0.023)
Log of Distance			-1.503*** (0.007)	-1.207*** (0.025)
Log GDP Country 1	1.305*** (0.027)	1.239*** (0.027)	-0.278*** (0.045)	1.165*** (0.007)
Log GDP Country 2	1.028*** (0.027)	0.964*** (0.027)	2.040*** (0.040)	0.900*** (0.007)
GDP PC Country 1	0.172*** (0.026)	0.218*** (0.026)	1.678*** (0.042)	0.171*** (0.010)
GDP PC Country 2	0.068*** (0.026)	0.117*** (0.026)	-1.139*** (0.039)	0.067*** (0.010)
Current Colony	-0.348 (0.297)	-0.390 (0.297)	-0.135 (0.327)	-0.377 (0.296)
Common Currency	0.194** (0.094)	0.185** (0.094)	0.472*** (0.038)	0.285*** (0.084)
Regional	0.393*** (0.019)	0.384*** (0.019)	0.805*** (0.017)	0.397*** (0.019)
Common Lang.			0.447*** (0.014)	0.341*** (0.052)
Border			0.433*** (0.024)	1.001*** (0.129)
Common Colony			0.877*** (0.017)	1.101*** (0.066)
Ever Colony			1.122*** (0.038)	2.073*** (0.171)
Constant	-43.078*** (0.984)	-40.692*** (0.992)	-18.434*** (1.159)	-27.148*** (0.344)
Dyad Fixed Effects	Yes	Yes	No	No
Importer/Exporter Fixed Effects	No	No	Yes	No
Time Effects	Yes	Yes	Yes	Yes
Observations	268582	268582	268582	268582
R-squared	0.77	0.77	0.65	0.63

Robust standard errors in parentheses

\* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

Table 3: Directed Dyads—Imports

Model	(1)	(2)	(3)	(4)
GATT/WTO	-0.0890*** (0.0105)	-0.0421*** (0.0114)	0.0469*** (0.0157)	-0.0420*** (0.0111)
GSP	0.129*** (0.0151)	0.307*** (0.0224)	0.309*** (0.0209)	0.291*** (0.0216)
GATT/WTO*GSP		-0.239*** (0.0222)	-0.0155 (0.0193)	-0.213*** (0.0215)
Log of Distance			-1.542*** (0.00638)	-1.295*** (0.0225)
Log GDP Country 1	0.843*** (0.0251)	0.803*** (0.0253)	0.894*** (0.0415)	0.825*** (0.00668)
Log GDP Country 2	1.129*** (0.0251)	1.091*** (0.0253)	0.871*** (0.0370)	1.107*** (0.00672)
GDP PC Country 1	0.173*** (0.0241)	0.201*** (0.0243)	0.0645* (0.0390)	0.0652*** (0.00874)
GDP PC Country 2	0.244*** (0.0242)	0.274*** (0.0243)	0.421*** (0.0364)	0.135*** (0.00862)
Current Colony	0.282 (0.278)	0.253 (0.278)	0.800*** (0.302)	0.237 (0.277)
Common Currency	0.170* (0.0886)	0.163* (0.0886)	0.498*** (0.0357)	0.215*** (0.0790)
Regional	0.303*** (0.0184)	0.297*** (0.0184)	0.711*** (0.0160)	0.316*** (0.0180)
Common Lang.			0.438*** (0.0124)	0.427*** (0.0466)
Border			0.387*** (0.0222)	1.032*** (0.117)
Common Colony			0.885*** (0.0162)	1.103*** (0.0596)
Ever Colony			1.288*** (0.0350)	1.181*** (0.155)
Constant	-35.50*** (0.913)	-34.07*** (0.922)	-19.37*** (1.071)	
Dyad Fixed Effects	Yes	Yes	No	No
Importer/Exporter Fixed Effects	No	No	Yes	No
Time Effects	Yes	Yes	Yes	Yes
Observations	271404	271404	271404	271404
R-squared	0.78	0.78	0.68	0.65

Robust standard errors in parentheses

\* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

Table 4: Average Marginal Effects

Exports

<u>Average Marginal Effect on Exports of WTO Membership by GSP</u>		
WTO	On GSP	No GSP
	-0.259***	0.173***
	0.023	0.012

  

<u>Average Marginal Effect on Exports of GSP by WTO Membership</u>		
GSP	On WTO	No WTO
	-0.247***	0.185***
	0.017	0.024

Imports

<u>Average Marginal Effect on Imports of WTO Membership by GSP</u>		
WTO	On GSP	No GSP
	-0.282***	-0.042***
	0.021	0.011

  

<u>Average Marginal Effect on Imports of GSP by WTO Membership</u>		
GSP	On WTO	No WTO
	0.068***	0.308***
	0.016	0.022

Table 5: Changes to Sample: Imports

	(1) High Income	(2) High Income	(3) 1948-2011	(4) All countries/years
GATT/WTO	-0.054***			
(Developing)	(0.010)			
GATT/WTO	0.328***			
(Developed)	(0.015)			
GATT/WTO		0.002	-0.034***	0.026***
		(0.010)	(0.011)	(0.009)
GSP	0.246***	0.141***	0.326***	0.218***
	(0.016)	(0.017)	(0.020)	(0.016)
GATT/WTO*GSP	-0.229***	-0.224***	-0.246***	-0.258***
	(0.017)	(0.018)	(0.021)	(0.017)
Log GDP Country 1	0.867***	0.870***	0.739***	0.740***
	(0.020)	(0.020)	(0.022)	(0.017)
Log GDP Country 2	1.046***	1.046***	1.021***	0.905***
	(0.020)	(0.020)	(0.022)	(0.017)
GDP PC Country 1	0.241***	0.276***	0.287***	0.431***
	(0.020)	(0.019)	(0.021)	(0.016)
GDP PC Country 2	0.353***	0.323***	0.350***	0.466***
	(0.020)	(0.020)	(0.021)	(0.016)
Common Currency	0.287***	0.285***	0.477***	0.421***
	(0.042)	(0.043)	(0.066)	(0.037)
Regional	0.380***	0.376***	0.353***	0.415***
	(0.015)	(0.015)	(0.018)	(0.014)
Constant	-34.676***	-34.706***	-32.078***	-31.637***
	(0.702)	(0.702)	(0.803)	(0.622)
Dyad Fixed Effects	Yes	Yes	Yes	Yes
Time Effects	Yes	Yes	Yes	Yes
Observations	399085	399085	292676	434043
R-squared	0.80	0.80	0.77	0.79

Robust standard errors in parentheses

\* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

Table 6: Changes to Sample: Exports

	(1) High Income	(2) High Income	(3) 1948-2011	(4) All countries/years
GATT/WTO	0.243***		0.146***	
(Developing)	(0.010)		(0.011)	
GATT/WTO	-0.227***			
(Developed)	(0.015)			
GATT/WTO		0.177***		0.107***
		(0.010)		(0.009)
GSP	0.052***	0.217***	0.146***	0.083***
	(0.016)	(0.017)	(0.022)	(0.016)
GATT/WTO*GSP	-0.240***	-0.244***	-0.389***	-0.181***
	(0.018)	(0.018)	(0.023)	(0.018)
Log GDP Country 1	1.023***	1.023***	1.088***	0.888***
	(0.020)	(0.020)	(0.024)	(0.017)
Log GDP Country 2	0.843***	0.849***	0.816***	0.725***
	(0.020)	(0.020)	(0.024)	(0.017)
GDP PC Country 1	0.366***	0.323***	0.370***	0.469***
	(0.019)	(0.019)	(0.023)	(0.016)
GDP PC Country 2	0.255***	0.284***	0.276***	0.445***
	(0.019)	(0.019)	(0.023)	(0.016)
Current Colony	0.038	0.054	0.000	0.338***
	(0.170)	(0.170)	(0.195)	(0.114)
Common Currency	0.298***	0.298***	0.536***	0.422***
	(0.042)	(0.042)	(0.070)	(0.037)
Regional	0.369***	0.373***	0.422***	0.412***
	(0.015)	(0.015)	(0.019)	(0.014)
Constant	-33.827***	-33.960***	-35.804***	-31.158***
	(0.700)	(0.701)	(0.869)	(0.621)
Dyad Fixed Effects	Yes	Yes	Yes	Yes
Time Effects	Yes	Yes	Yes	Yes
Observations	399158	399158	289089	434116
R-squared	0.80	0.80	0.76	0.79

Robust standard errors in parentheses

\* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

Appendix Table 7: Accounting for Time: Imports

	(1) Lagged DV	(2) Time Counter	(3) 5-year Averages
Lagged DV	0.624*** (0.002)		
GATT/WTO	-0.025*** (0.009)	-0.061*** (0.011)	-0.116*** (0.022)
GSP	0.113*** (0.017)	0.300*** (0.022)	0.341*** (0.047)
GATT/WTO*GSP	-0.089*** (0.017)	-0.245*** (0.022)	-0.159*** (0.045)
Log GDP Country 1	0.326*** (0.019)	0.661*** (0.025)	0.829*** (0.049)
Log GDP Country 2	0.431*** (0.020)	0.951*** (0.025)	1.095*** (0.049)
GDP PC Country 1	0.046** (0.019)	0.489*** (0.023)	0.195*** (0.047)
GDP PC Country 2	0.091*** (0.019)	0.557*** (0.023)	0.247*** (0.047)
Current Colony	0.020 (0.219)	0.486* (0.279)	0.516 (0.423)
Common Currency	0.021 (0.069)	0.188** (0.089)	0.174 (0.154)
Regional	0.105*** (0.014)	0.391*** (0.018)	0.243*** (0.036)
Time Counter		-0.026*** (0.001)	
Constant	-13.434*** (0.710)	20.882*** (1.502)	-34.044*** (1.704)
Dyad Fixed Effects	Yes	Yes	Yes
Time Effects	Yes	Yes	Yes
Observations	249810	271404	67663
R-squared	0.87	0.78	0.83

Robust standard errors in parentheses

\* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

Appendix Table 8: Accounting for Time: Exports

	(1)	(2)	(3)
	Lagged DV	Time Counter	5-year Averages
Lagged DV	0.631*** (0.002)		
GATT/WTO	0.065*** (0.010)	0.157*** (0.012)	0.160*** (0.023)
GSP	0.041** (0.019)	0.173*** (0.024)	0.127** (0.051)
GATT/WTO*GSP	-0.167*** (0.018)	-0.433*** (0.024)	-0.412*** (0.049)
Log GDP Country 1	0.478*** (0.021)	1.112*** (0.027)	1.261*** (0.052)
Log GDP Country 2	0.379*** (0.021)	0.835*** (0.027)	1.003*** (0.052)
GDP PC Country 1	0.074*** (0.020)	0.474*** (0.024)	0.168*** (0.050)
GDP PC Country 2	0.021 (0.020)	0.372*** (0.025)	0.089* (0.050)
Current Colony	-0.148 (0.231)	-0.187 (0.297)	0.211 (0.444)
Common Currency	0.028 (0.073)	0.204** (0.094)	0.150 (0.162)
Regional	0.137*** (0.015)	0.463*** (0.019)	0.325*** (0.038)
Time Counter		-0.043*** (0.001)	
Constant	-15.678*** (0.768)	47.461*** (1.613)	-40.369*** (1.800)
Dyad Fixed Effects	Yes	Yes	Yes
Time Effects	Yes	Yes	Yes
Observations	246114	268582	67302
R-squared	0.87	0.77	0.82

Robust standard errors in parentheses

\* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

Table 9: Income Groups: Imports

	(1) Upper Middle Income	(2) Lower Middle Income	(3) Low- Income
GATT/WTO	0.053*** (0.019)	0.212*** (0.022)	-0.216*** (0.041)
GSP	0.408*** (0.035)	0.192*** (0.038)	0.233*** (0.062)
GATT/WTO*GSP	-0.343*** (0.034)	-0.293*** (0.035)	-0.264*** (0.059)
Log GDP Country 1	0.748*** (0.041)	0.820*** (0.044)	1.251*** (0.068)
Log GDP Country 2	1.075*** (0.041)	1.089*** (0.044)	1.605*** (0.065)
GDP PC Country 1	0.098** (0.041)	0.287*** (0.044)	-0.759*** (0.077)
GDP PC Country 2	0.588*** (0.041)	0.129*** (0.043)	-0.181*** (0.066)
Current Colony	0.699 (0.519)	1.345*** (0.407)	-2.113*** (0.472)
Common Currency	0.081 (0.309)	0.012 (0.149)	0.354*** (0.118)
Regional	0.338*** (0.026)	0.215*** (0.032)	0.234*** (0.049)
Constant	-33.764*** (1.415)	-33.775*** (1.614)	-45.459*** (2.164)
Dyad Fixed Effects	Yes	Yes	Yes
Time Effects	Yes	Yes	Yes
Observations	102743	88176	48235
R-squared	0.82	0.81	0.78

Robust standard errors in parentheses

\* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

Table 10: Income Groups: Exports

	(1) Upper Middle Income	(2) Lower Middle Income	(3) Low-Income
GATT/WTO	0.081*** (0.019)	0.088*** (0.023)	-0.229*** (0.052)
GSP	0.128*** (0.037)	0.283*** (0.040)	0.142* (0.075)
GATT/WTO*GSP	-0.453*** (0.036)	-0.313*** (0.038)	-0.100 (0.073)
Log GDP Country 1	1.171*** (0.042)	2.209*** (0.048)	1.809*** (0.088)
Log GDP Country 2	0.859*** (0.042)	1.938*** (0.047)	1.558*** (0.083)
GDP PC Country 1	0.247*** (0.042)	-0.634*** (0.047)	-0.112 (0.096)
GDP PC Country 2	-0.196*** (0.041)	-0.888*** (0.046)	-0.773*** (0.083)
Current Colony	-0.100 (0.563)	0.458 (0.413)	-3.588*** (0.581)
Common Currency	0.329 (0.337)	0.494*** (0.171)	0.188 (0.133)
Regional	0.224*** (0.027)	0.329*** (0.034)	0.438*** (0.059)
Constant	-33.745*** (1.422)	-73.411*** (1.732)	-55.376*** (2.824)
Dyad Fixed Effects	Yes	Yes	Yes
Time Effects	Yes	Yes	Yes
Observations	105154	87356	45357
R-squared	0.81	0.79	0.72

Robust standard errors in parentheses

\* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

Table 11: Region: Imports

	(1)	(2)	(3)	(4)	(5)	(6)
	Asia/Pacific	Europe	Latin America	MENA	South Asia	SS Africa
GATT/WTO	0.169*** (0.033)	0.110*** (0.027)	0.332*** (0.024)	-0.093*** (0.034)	-0.194* (0.114)	-0.475*** (0.034)
GSP	-0.064 (0.056)	0.306*** (0.046)	0.476*** (0.045)	0.152** (0.060)	0.693*** (0.161)	0.086 (0.055)
GATT/WTO*GSP	-0.147*** (0.055)	-0.010 (0.055)	-0.539*** (0.039)	0.224*** (0.055)	-0.529*** (0.153)	-0.046 (0.052)
Log GDP Country 1	0.691*** (0.078)	0.369*** (0.085)	0.975*** (0.050)	1.038*** (0.076)	1.247*** (0.109)	1.025*** (0.052)
Log GDP Country 2	0.995*** (0.077)	0.649*** (0.084)	1.461*** (0.049)	1.228*** (0.073)	1.309*** (0.105)	1.538*** (0.051)
GDP PC Country 1	0.514*** (0.075)	1.021*** (0.090)	0.011 (0.051)	-0.386*** (0.070)	0.543*** (0.129)	-0.372*** (0.051)
GDP PC Country 2	0.346*** (0.075)	1.070*** (0.087)	0.274*** (0.050)	-0.099 (0.069)	-0.153 (0.104)	-0.136*** (0.050)
Current Colony	0.926 (0.615)		1.150*** (0.393)			-1.395*** (0.423)
Common Currency	0.820 (0.555)	0.538*** (0.189)	-0.085 (0.225)		1.421* (0.734)	0.282*** (0.104)
Regional	0.358*** (0.064)	0.447*** (0.032)	0.289*** (0.034)	0.293*** (0.041)	0.110 (0.183)	0.086** (0.037)
Constant	-30.96*** (2.676)	-25.24*** (2.840)	-46.75*** (1.758)	-34.88*** (2.619)	-47.71*** (3.989)	-42.40*** (1.810)
Dyad Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Time Effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	35321	42938	69388	27563	15642	80552
R-squared	0.85	0.85	0.82	0.83	0.82	0.76

Robust standard errors in parentheses

\* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

Table 12: Region: Exports

	(1)	(2)	(3)	(4)	(5)	(6)
	Asia/Pacific	Europe	Latin America	MENA	South Asia	SS Africa
GATT/WTO	0.077*** (0.029)	-0.018 (0.028)	-0.343*** (0.025)	0.245*** (0.044)	-1.023*** (0.093)	-0.185*** (0.042)
GSP	-0.099* (0.053)	0.263*** (0.046)	0.080 (0.049)	0.156** (0.077)	-0.252* (0.132)	0.476*** (0.068)
GATT/WTO*GSP	-0.196*** (0.051)	-0.387*** (0.056)	-0.396*** (0.042)	0.013 (0.071)	0.614*** (0.126)	-0.436*** (0.065)
Log GDP Country 1	1.773*** (0.068)	1.538*** (0.079)	2.244*** (0.055)	2.538*** (0.099)	1.291*** (0.082)	2.208*** (0.066)
Log GDP Country 2	1.486*** (0.067)	1.192*** (0.078)	1.769*** (0.055)	2.382*** (0.094)	0.952*** (0.078)	1.701*** (0.065)
GDP PC Country 1	-0.264*** (0.064)	-0.323*** (0.083)	-0.815*** (0.055)	-0.636*** (0.089)	0.590*** (0.098)	-0.829*** (0.064)
GDP PC Country 2	-0.272*** (0.065)	-0.353*** (0.079)	-1.014*** (0.054)	-1.035*** (0.087)	-0.181** (0.077)	-1.044*** (0.062)
Current Colony	1.276** (0.523)		0.755* (0.426)			-3.220*** (0.499)
Common Currency	2.227*** (0.508)	0.171 (0.189)	0.066 (0.236)		0.772 (0.601)	0.303** (0.121)
Regional	0.005 (0.059)	0.424*** (0.031)	0.252*** (0.036)	-0.017 (0.053)	-0.073 (0.150)	0.437*** (0.044)
Constant	-58.33*** (2.358)	-44.72*** (2.638)	-66.58*** (1.954)	-88.02*** (3.402)	-39.09*** (2.995)	-64.23*** (2.296)
Dyad Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Time Effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	37172	43212	69049	27642	18344	73163
R-squared	0.87	0.85	0.80	0.79	0.86	0.72

Robust standard errors in parentheses

\* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

Replication Table 1 – Replication of Rose (2004a) – Trade, WTO and GSP

Model	(1)	(2)	(3)	(4)
Both in GATT/WTO	0.127*** (0.020)	0.177*** (0.020)	0.136*** (0.024)	0.177*** (0.024)
One in GATT/WTO	0.060*** (0.017)	0.040** (0.017)	0.037** (0.019)	0.018 (0.019)
GSP	0.175*** (0.011)	0.350*** (0.106)	0.525*** (0.011)	1.252*** (0.119)
Both in WTO*GSP		-0.299*** (0.107)		-0.840*** (0.120)
One in WTO*GSP		0.024 (0.106)		-0.559*** (0.120)
Log Product Real GDP	0.443*** (0.018)	0.407*** (0.018)	0.226*** (0.021)	0.200*** (0.021)
Log Product Real GDP p/c	0.237*** (0.017)	0.271*** (0.017)	0.480*** (0.020)	0.505*** (0.020)
Regional FTA	0.764*** (0.026)	0.739*** (0.026)	1.414*** (0.032)	1.403*** (0.032)
Currency Union	0.631*** (0.047)	0.623*** (0.047)	1.112*** (0.037)	1.095*** (0.037)
Currently Colonized	0.296*** (0.045)	0.260*** (0.046)	0.702*** (0.071)	0.687*** (0.071)
Log of Distance			-1.318*** (0.007)	-1.318*** (0.007)
Common Language			0.278*** (0.013)	0.284*** (0.013)
Land Border			0.343*** (0.025)	0.344*** (0.025)
Landlocked			-1.402*** (0.241)	-1.468*** (0.241)
Island			-0.079 (0.113)	-0.136 (0.113)
Log Product Land Area			0.481*** (0.015)	0.494*** (0.015)
Common Colonizer			0.553*** (0.022)	0.542*** (0.022)
Ever Colony			1.158*** (0.022)	1.160*** (0.022)
Common Country			-0.007 (0.161)	0.008 (0.160)
Constant	-14.555*** (0.615)	-13.454*** (0.618)	-8.380*** (0.538)	-7.897*** (0.539)
Dyad Fixed Effects	Yes	Yes	No	No
Importer/Exporter Fixed Effects	No	No	Yes	Yes
Time Effects	Yes	Yes	Yes	Yes
Observations	234,597	234,597	234,597	234,597
R-squared	0.85	0.85	0.71	0.71

Robust standard errors in parentheses

\* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

Replication Table 2 – Replication of Tomz, Goldstein and Rivers (2007a) – Trade, WTO and GSP

Model	(1)	(2)	(3)	(4)
Both Formal Members	0.476*** (0.062)	0.517*** (0.062)	0.532*** (0.063)	0.577*** (0.063)
Formal Member and Non-member Participant	0.565*** (0.063)	0.536*** (0.064)	0.636*** (0.064)	0.632*** (0.065)
Both Non-member Participants	0.877*** (0.094)	0.874*** (0.094)	0.872*** (0.116)	0.881*** (0.116)
One Formal Member	0.229*** (0.057)	0.215*** (0.057)	0.224*** (0.058)	0.206*** (0.058)
One Non-member Participant	0.345*** (0.067)	0.343*** (0.067)	0.416*** (0.077)	0.424*** (0.077)
GSP	0.182*** (0.028)	0.606*** (0.177)	0.529*** (0.029)	1.499*** (0.265)
Both Formal Members *GSP		-0.537*** (0.179)		-1.079*** (0.267)
Formal Member and Non- member Participant*GSP		-0.237 (0.181)		-0.897*** (0.270)
One Formal Member*GSP		-0.262 (0.179)		-0.759*** (0.268)
One Non-member Participant *GSP		-0.891*** (0.261)		-0.892 (0.920)
Log of Distance			-1.320*** (0.024)	-1.319*** (0.023)
Log Product Real GDP	0.466*** (0.048)	0.432*** (0.048)	0.250*** (0.049)	0.222*** (0.049)
Log Product Real GDP p/c	0.213*** (0.046)	0.245*** (0.046)	0.454*** (0.047)	0.480*** (0.047)
Regional FTA	0.763*** (0.072)	0.739*** (0.073)	1.408*** (0.104)	1.399*** (0.104)
Currency Union	0.608*** (0.118)	0.604*** (0.118)	1.094*** (0.124)	1.077*** (0.124)
Common Language			0.276*** (0.043)	0.286*** (0.043)
Land Border			0.342*** (0.100)	0.345*** (0.100)
Landlocked			-1.306*** (0.330)	-1.374*** (0.330)
Island			0.007 (0.217)	-0.057 (0.217)
Log Product Land Area			0.472*** (0.035)	0.487*** (0.035)
Common Colonizer			0.550*** (0.068)	0.533*** (0.068)
Currently Colonized	0.283* (0.159)	0.303* (0.164)	0.714*** (0.263)	0.718*** (0.265)
Ever Colony			1.167*** (0.102)	1.171*** (0.102)
Common Country			0.002 (0.788)	-0.012 (0.793)
Constant	-15.445*** (1.553)	-14.375*** (1.564)	-9.207*** (1.174)	-8.626*** (1.179)
Importer/Exp. Fixed Effects	No	No	Yes	Yes
Dyad Fixed Effects	Yes	Yes	No	No
Time Effects	Yes	Yes	Yes	Yes
Observations	234,597	234,597	234,597	234,597
R-squared	0.85	0.85	0.72	0.72

Robust standard errors in parentheses; \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

Replication Table 3 – Replication of Tomz, Goldstein and Rivers (2007b) – Trade, WTO and GSP

Model	(1)	(2)	(3)
Both Formal Members	0.341*** (0.035)	0.406*** (0.035)	0.391*** (0.046)
Formal Member and Non-member Participant	0.381*** (0.037)	0.366*** (0.038)	0.305*** (0.056)
Both Non-member Participants	0.447*** (0.07)	0.455*** (0.07)	0.145 (0.158)
One Formal Member	0.200*** (0.03)	0.190*** (0.03)	0.155*** (0.042)
One Non-member Participant	0.173*** (0.04)	0.176*** (0.04)	0.058 (0.069)
GSP	-0.098*** (0.019)	0.387*** (0.117)	0.423*** (0.118)
Both Formal Members *GSP		-0.590*** (0.118)	-0.478*** (0.119)
Formal Member and Non- member Participant*GSP		-0.338*** (0.123)	-0.232* (0.126)
One Formal Member*GSP		-0.338*** (0.118)	-0.198* (0.119)
One Non-member Participant *GSP		-0.335* (0.181)	-0.347* (0.190)
Reciprocal PTA	0.344*** (0.022)	0.328*** (0.022)	0.300*** (0.024)
Nonreciprocal PTA	-0.052 (0.032)	-0.032 (0.032)	-0.045 (0.030)
Currency Union	0.496*** (0.088)	0.494*** (0.088)	0.160** (0.070)
Colonial Orbit	0.808*** (0.082)	0.811*** (0.082)	0.113 (0.521)
Log Product Real GDP	0.661*** (0.011)	0.658*** (0.011)	0.593*** (0.013)
Constant	-15.379*** (0.541)	-15.254*** (0.539)	-12.258*** (0.586)
Importer/Exp. Fixed Effects	No	No	No
Dyad Fixed Effects	Yes	Yes	Yes
Time Effects	Yes	Yes	Yes
Observations	381,656	381,656	275,169
R-squared	0.84	0.84	0.87
Time Period	1946-2004	1946-2004	1970-2004

Robust standard errors in parentheses;  
\* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

Replication Table 4 – Replication of Subramanian and Wei (2007) – Trade, WTO and GSP

	(1)	(2)	(3)	(4)
Developed WTO Member	0.438*** (0.035)	0.488*** (0.038)	0.244*** (0.033)	0.286*** (0.036)
Developing WTO Member	-0.094*** (0.029)	-0.067** (0.030)	-0.447*** (0.045)	-0.321*** (0.061)
GSP	0.686*** (0.026)	0.753*** (0.033)	-0.169*** (0.043)	-0.101** (0.048)
Developing WTO*GSP		-0.131*** (0.040)		-0.209*** (0.069)
Log of Distance	-1.246*** (0.011)	-1.246*** (0.011)	-0.193 (0.147)	-0.215 (0.148)
Log real GDP importer	0.639*** (0.055)	0.645*** (0.055)	0.731*** (0.060)	0.746*** (0.060)
Log real GDP partner	0.198*** (0.055)	0.170*** (0.055)	0.769*** (0.060)	0.785*** (0.060)
Log real GDP per capita Importer	0.306*** (0.051)	0.297*** (0.051)	0.329*** (0.062)	0.303*** (0.062)
Log real GDP per capita Partner	1.012*** (0.051)	1.038*** (0.052)	0.728*** (0.061)	0.715*** (0.061)
Common Language	0.328*** (0.022)	0.331*** (0.022)	0.812** (0.335)	0.883*** (0.336)
Common Border	0.145*** (0.041)	0.145*** (0.041)	0.067 (0.496)	-0.079 (0.498)
Common colony	0.564*** (0.031)	0.560*** (0.031)		
Current colony	0.807*** (0.156)	0.810*** (0.156)	-0.227 (0.560)	-0.199 (0.560)
Ever Colony	1.327*** (0.049)	1.327*** (0.049)		
Common Country	0.296 (0.428)	0.297 (0.428)		
Common Currency	1.047*** (0.062)	1.042*** (0.063)	0.497*** (0.147)	0.496*** (0.147)
FTA	1.058*** (0.052)	1.076*** (0.052)	0.727*** (0.053)	0.758*** (0.053)
Constant	-1.688* (0.998)	-1.374 (1.003)	-21.751*** (1.421)	-21.834*** (1.420)
Importer/Exporter F-Effects	Yes	Yes	No	No
Dyad Fixed Effects	No	No	Yes	Yes
Time Effects	Yes	Yes	Yes	Yes
Observations	73,688	73,688	7,177	7,177
R-squared	0.71	0.71	0.92	0.92

Standard errors in parentheses

\* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%