HAS THE WORLD TRADE ORGANIZATION PROMOTED SUCCESSFUL REGIONAL TRADE AGREEMENTS?

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Abstract

The Committee on Regional Trade Agreements (CRTA) of the World Trade Organization (WTO) is charged with monitoring, examining, and ensuring the compliance of notified RTAs. Our comprehensive dataset on regional integration reveals that almost half (44%) of all agreements in existence (up to 2005) are neither notified nor accounted for in the RTA database published by the WTO. We exploit variation in the notification status of an RTA to test whether the WTO has fostered successful RTAs. After an extensive empirical search, we find very little evidence that notified RTAs, which are subject to conformity reviews and compliance standards, trade more than non-notified agreements. In fact, we find just the opposite. Non-notified RTAs significantly outperform their notified counterparts. This surprising result is robust to a number of empirical specifications and various subsets of the data. The results are not particularly encouraging because they suggest that current WTO rules and compliance standards may actually impede the effectiveness of regional integration.

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1. Introduction

Andrew Roseôs (2004) finding that the General Agreement on Tariffs and Trade (GATT) and its successor, the World Trade Organization (WTO), has not promoted trade among its signatories came as a big surprise given that increased global trade is one of the great success stories since the GATT entered into force more than 50 years ago. The fact that Rose (2004) found an insignificant (and even negative) impact on trade between countries that are party to the WTO across a number of empirical specifications was puzzling. Why would the leaders of the global economy (both developed and developing) promote membership into an organization that failed to deliver on the promise of freer trade? Indeed, Rose (2004, page 112) concludes that this result is ñ... an interesting mystery.ò

A growing body of literature has developed to explain or overturn this result (Subramian and Wei 2007; Tomz, Goldstein, and Rivers 2006; Felbermayr and Kohler 2006; Herz and Wagner 2006; Chang and Lee 2007; Li 2007; Engelbrecht and Pearce 2004). A few insights are worth noting. First, a positive and significant trade flow effect of the GATT/WTO can be found if we ignore developing and least-developed countries. Subramian and Wei (2007) exclude developing and least-developed countries from the analysis because these countries undertook smaller trade liberalization commitments and did not participate fully in the GATT/WTO rounds. Second, Roseôs result can be overturned if we alter the control group by which WTO membership is judged. Tomz, Goldstein, and Rivers (2006) find a positive trade flow effect of the GATT/WTO by considering countries that participated informally. Finally, the GATT/WTO can produce positive results if one excludes heavily protected sectors such as agriculture and textiles (Engelbrecht and Pearce 2004).

Clearly, the GATT/WTO can clearly deliver positive effects on trade. However, it appears that we have to select on certain commodity sectors, developed countries, or alternative membership status. Yet we know *a priori* where the GATT/WTO has worked well and where it has not, so conditioning on these factors is not the most convincing argument to promote the overall success of the institution. Indeed, Rose (2006) notes succinctly that ñé the GATT/WTO has worked well if you ignore its failuresò (i.e. developing countries or agricultural trade) (p.9).

While the question of whether the GATT/WTO facilitates membersô multilateral trade continues to be debated, it might be worthwhile to consider whether the GATT/WTO has successfully promoted trade through other channels. One such channel is to consider trade on a regional scale, that is, within regional trade agreements (RTAs). Rules governing the formation and implementation of RTAs fall under the purview of Article XXIV of the GATT/WTO, whereas the task of verifying compliance and assessing the effectiveness of RTAs is entrusted to the Committee on Regional Trade Agreements.[1] Growth in the number of RTAs over the last 15 years has exploded. The latest numbers from the WTO indicate some 205 agreements in force as of July 2007. For this reason the WTO created the CRTA in 1996, to help monitor, evaluate, and ensure the compliance of RTAs with Article XXIV.[2]

The GATT/WTO recognizes that expanding world trade may be considerably easier through regional integration and may complement the multilateral process.[3] RTAs tend to have deeper coverage, extending into areas such as investment, services, domestic policy, and non-

[1] The majority of RTAs are notified under GATT Article XXIV covering trade in goods, but there are other Articles that apply to the formation of regional trade agreements. RTAs encompassing trade in services can be established under Article V of the General Agreement on Trade in Services (GATS), and RTAs incorporating developing countries can be notified under the Enabling Clause of Article XXIV.

[2] By monitoring, evaluating and compliance, we mean the CRTA works to promote increased trade by ensuring that policy barriers are reduced or eliminated on ñsubstantiallyò all trade within the RTA and that RTA implementation (i.e. phase-in) periods are being met (exceeding 10 years only under exceptional circumstances).

[3] The preamble to GATT Article XXIV which governs the formation and implementation of regional trade agreements for trade in goods states: "é the expansion of world trade that may be made by closer integration between the economies of the parties to such agreements.ò

tariff issues compared to simple tariff concessions negotiated within the WTO (Crawford and Laird 2000). Moreover, regional integration typically occurs much faster than the multilateral process because it involves fewer negotiating parties.

In this article we ask an alternative policy question related to the GATT/WTO: has the GATT/WTO promoted successful regional trade agreements? We develop an original dataset covering some 290 RTAs that have entered into force since 1960. A remarkable feature of the data reveals that 43 percent of all regional agreements in existence up to 2005 (customs unions, free trade areas, partial scope agreements, and accession free trade agreements), are neither notified, nor accounted for in the RTA database published by the WTO. Yet the capacity of the GATT/WTO to foster successful RTAs is limited to those agreements that are actually *notified* to the CRTA. Thus, we exploit variation in the notification status of an RTA to test econometrically whether the GATT/WTO has cultivated successful RTAs through CRTA compliance reviews and implementation procedures enshrined in Article XXIV.[4]

We expect notified RTAs to be more successful than non-notified agreements for several reasons. First, the data shows that non-notified RTAs tend to be partial scope in nature whereas most notified agreements are free trade areas (and customs unions).[5] Second, the CRTA believes that non-notified agreements exist because of: (i) difficulties in reducing or eliminating trade barriers on ñsubstantiallyò all trade as spelled out in Article XXIV; (ii) protracted negotiations covering politically sensitive sectors; and (iii) prolonged implementation and transitional periods

[4] Article XXIV is the main GATT agreement that covers customs unions and free trade areas and the associated rules for reducing or eliminating trade barriers, the timeframe from which to do so, and the treatment of trade barriers affecting nonmember countries.

[5] It is difficult to find an exact definition of partial scope agreements. However, just as its name suggests, partial scope agreements involve only ñpartialò commitments among members to reduce and harmonize border policies within the RTA.

of trade liberalization that are inconsistent with Article XXIV.[6] Third, notified RTAs must undergo a mandatory compliance review by the CRTA. The committee then makes recommendations if RTAs are inconsistent with Article XXIV. Non-notified RTAs are under no obligations and there are no provisions within the WTO rules to counter non-notification of RTAs.

From the WTOôs perspective, the success of a growing list of complicated and far-reaching RTAs hinges on two factors: (i) whether the agreement complies with the rules of implementation enshrined in Article XXIV; and (ii) whether the agreement is notified so that the CRTA can conduct mandatory reviews to ensure conformity. All RTAs involving WTO members require notification (WTO 2000). Yet as the CRTA notes in its ñSynopsisò relating to systematic issues of regional trading arrangements (WTO 2000): ñé a large number of RTAs today in force have not been notified to the WTO. This hinders any comprehensive and precise evaluation of RTAs,ò (p. 9). The examination of RTAs by the CRTA serves three purposes. First, RTA members submit documentation describing the implementation process and this is viewed as promoting greater transparency and facilitates a better understanding of RTAs. Second, RTA examination ensures the RTAôs consistency with the relevant rules of the GATT/WTO. Finally, RTA examination allows the CRTA to generate appropriate recommendations to the parties involved (WTO 2000).[7]

If CRTA is correct in its assessment, then we would expect to see notified RTAs significantly outperforming their non-notified counterparts. After an extensive empirical search however, we find very little evidence that the trade flow effects of notified RTAs is greater than

[6] The CRTA recently confirmed this (non-notification) as one of its ñSystematic Issues Relating to Regional Trade Agreementsò (WTO 2007). The committee is well aware that there are numerous RTAs in existence that have never been notified to the WTO.

[7] It is useful to note that RTA examinations can not be launched until the RTA is formally notified to the CRTA of the GATT/WTO.

non-notified RTAs. In fact, we find just the opposite which begs the following question: what is the WTO doing wrong?

The remainder of the paper is laid out as follows. Section two summarizes the emergence and trends of notified and non-notified RTAs since 1960. Section three develops the econometric model. Section four discusses the data used in this study and section five presents the results. Section six concludes and provides two possible explanations for our results.

2. Trends in RTAs by Notification Status

Regional Trade Agreements are now a ubiquitous feature of global trade. In July of 2007, the CRTA recognized 205 regional trade agreements in force.[8] This is up from 180 agreements in 2003, less than 100 agreements in 1995, and just 40 agreements in 1990. Since the advent of the WTO in 1995, the CRTA has received an average of 11 notifications per year - almost one per month - and many WTO Members are participating in multiple RTAs (Crawford and Fiorentino 2005).

A careful review of the empirical literature estimating the trade flow effects of RTAs reveals that trade increases among RTA members can hardly be taken for granted. In fact, the simple question of whether RTAs stimulate trade among members has motivated an explosion in the number of *ex post* econometric analyses using the gravity equation (Frankel 1997; Wei and Frankel 1996; Soloaga and Winters 1999; Krueger 2000; BB; Grant and Lambert 2008). Conflicting reports abound as highlighted in recent studies by Baier and Bergstrand (B&B 2007), Ghosh and Yamarik (2004) and Grant and Lambert (2008). Thus, an important policy question is not whether RTAs have created or diverted trade categorically (i.e., the EU, NAFTA, ASEAN,

[8] Of the 205 RTAs currently in force, 128 agreements have been notified under GATT Article XXIV as either free trade areas or customs unions; 25 agreements are notified under the Enabling Clause and an additional 52 agreements cover trade in services under GATS Article V.

etc.), but can we identify factors that have ensured successful RTAs? A natural starting point is the WTO since it oversees the formation and implementation regional integration.

Both the number of RTAs and the share of global trade occurring within RTAs have increased steadily since the first wave of regionalism began in the 1960ôs. To see this, figure 1 plots the share of (real) international trade occurring within RTAs. In 1960, just 13 percent of world trade occurred within RTAs. Sixty-nine percent of this share occurred between the original EU member countries; 23 percent occurred between the original EFTA members; and the remaining eight percent occurred between the non-notified Canada-Australia preferential agreement. By 1980, 21 percent of international trade occurred within RTAs. Again, the EU, which is now composed of nine members, makes up 71 percent of this total. By 2005, the share of RTA trade more than doubled with over half of all trade (52%) taking place within RTAs.[9] The EU, now encompassing 25 member countries, accounts for 40 percent of this share. For comparison purposes, in 2005, 82 percent of all trade occurs between WTO members.

In figure 2, we report the mean value of trade by notification status and year. This is the first indication of how notified RTAs have performed compared to their non-notified counterparts. What is interesting about figure 2 is that in every year the mean value of trade between members of an RTA that is notified to the WTO is significantly greater than the mean value of trade between members of a non-notified agreement. However reporting mean trade flows across categories can be problematic. First, simple averages do not control for country size or trade barriers, nor does it control for cultural affinities and geographic characteristics that may promote or impede trade flows. To address this question formally we need an empirical model of trade flows which we develop shortly. Second, the mean value of notified and non-

[9] The share of world trade occurring within RTAs reported in this study (i.e., in 2005) may differ from that of the WTO because a large number of non-notified RTAs are incorporated into the analysis.

notified trade could reflect a difference in the scale of these RTAs. Notified RTAs may cosist of larger regional blocs (> 3 members) whereas non-notified RTAs could be bilateral agreements with only two members. Third, there could be a ñWTO effectò whereby more countries chose to notify their RTA just prior to and after the advent of the WTO in 1995 so that the share of RTA trade taking place inside non-notified RTAs declined in the 1990ôs (Figure 2). Non-notified RTA trade increased during the period 1960-1980, but fell thereafter. Finally, the decline in non-notified RTA trade could be due to the fact that many of these agreements are only partial scope in nature.

To gain additional insight into these factors, figure 3 reports the number of RTAs by notification status and year in our database. Also plotted on the secondary vertical axis is the number of bilateral RTAs in force, defined as those RTAs encompassing only two members. The recent proliferation in the number of RTAs is evident. In 1960, only three RTAs existed, two of which, the European Free Trade Agreement (EFTA) and the original European Union (EU), were notified to the GATT/WTO. The only non-notified RTA in existence in 1960 was the partial scope (bilateral) agreement between Canada and Australia.[10] By 1990, 50 regional trade agreements were in existence. However, only 21 of these agreements were notified to the GATT/WTO. For notified RTAs, our database is consistent with the 21 notified RTAs recognized by the WTO in 1990 (see Fiorentino, Verdeja, and Toqueboeuf 2006). In 2005, the last year for which we have data, there were 160 notified RTAs and 126 non-notified RTAs. Compared with 1990, the increase in the total number of RTAs is 272 percent. Remarkably however, the number of notified RTAs increased by a factor of almost eight, while non-notified agreements increased more than four-fold.

[10] Details on the Canada-Australia trade agreement can be found on the Australian Customs Service website: http://www.customs.gov.au/site/page.cfm?u=4401

What is also evident in Figure 3 is the surge in the number of bilateral RTAs. For example, in 1990, there were 25 bilateral RTAs in force (i.e., those agreements involving only two members), or roughly 50 percent of the total number of RTAs (25/50). By 2005, the number of bilateral RTAs increased seven-fold from 25 bilateral agreements to 178. Moreover, bilateral RTAs now make up the largest share -- 61 percent (178/290) -- of the total number of notified and non-notified RTAs in world trade.

Finally, figure 4 illustrates the structure of notified and non-notified RTAs by year and type of RTA (customs unions (CU), free trade agreements (FTA), partial scope agreements (PSA) and accession free trade agreements (AFTA)). A few important trends are worth noting. First, very few CUs are signed and entered into force over the sample period 1960-2005, reflecting the fact the CUs are far more difficult to negotiate both politically and economically. In 2005, a total of eleven different CUs existed in world trade ï ten of which are notified to the WTO and one that is not notified (South African Customs Union (SACU)). Second, for notified RTAs, the majority of agreements in world trade are FTAs, whereas non-notified agreements are dominated by PSAs. In 2005 for example, 94 of the notified RTAs are FTAs compared to just eleven for notified PSAs (figure 4). For non-notified RTAs in 2005, 56 agreements were PSAs compared to 50 FTAs and 20 AFTAs, while in 1990, non-notified PSAs totaled 27 compared to just two FTAs and 4 AFTAs. Thus, although PSAs make up the largest share of non-notified RTAs, non-notified FTAs and AFTAs are becoming more prevalent.

This section has illustrated some important trends in the total number and trade shares of all RTAs in existence since 1960. The WTO notifications summarizing RTA formation include only those RTAs that are notified to the CRTA. Our database considers 290 RTAs. In 2005, the final year of our sample, 126 RTAs are classified as non-notified implying that almost half

(126/290=43%) of all RTAs are neither notified nor accounted for in the RTA database published by the WTO.[11] This is a significant improvement over previous studies and the RTA database published by the WTO.[12] . However, this qualitative summary is limited because it can not answer the central question in this article: has the WTO cultivated successful RTAs? In what follows, we develop a formal model of trade flows to answer this question. On the surface however, the CRTA examination and compliance standards appear to be working well.

3. Gravity Econometrics

The gravity equation has become the workhorse for empirical econometric studies of trade flows. Developed by Tinbergen (1962), the gravity model is akin to Newtonôs law of universal gravitation, whereby larger and closer countries trade more with one another than smaller and more distant countries. In its basic form, the gravity model predicts that trade flows from country *i* to country *j* are proportional to the multiplicative interaction (in levels) of each countryôs size, often measured by GDP, and inversely proportional to the distance between them. Denoting trade flows from *i* to *j* as T_{ij} , GDP of country *i* (*j*) as Y_i (Y_j) and the distance between country *i* and *j* as D_{ij}, the gravity model for trade is formalized as:

$$T_{ij} = \beta_0 Y_i^{\beta_1} Y_j^{\beta_2} D_{ij}^{\beta_3} \quad (1)$$

where, β_0, β_1, β_2, and β_3 are unknown parameters.

While the theory assumes a physical relationship for trade between countries, economic forces may prohibit a universal set of coefficients for which the relationship holds. To

[11] Our findings are consistent with Medvedev (2006) in a recent World Bank survey of RTAs.
[12] For example, B&B (2007) provide the most comprehensive analysis of the effects of RTAs on trade to date. However, their analysis incorporated 60 RTAs, all of which are notified to the GATT/WTO. Similarly, Grant and Lambert (2008) accounted for 64 agreements notified to the GATT/WTO. Interestingly, Rose (2004) included just ten regional trade agreements in his study of the effects of the GATT/WTO on trade.

operationalize the model, a multiplicative, stochastic error term, ε_{ij}, is appended to equation (*1*) yielding:

(2) $$T_{ij} = \beta_0 Y_i^{\beta_1} Y_j^{\beta_2} D_{ij}^{\beta_3} \varepsilon_{ij}$$

Traditional econometric studies of trade flows assume that the expectation of the random noise, conditional on the explanatory variables is equal to one. Thus, taking logs of both sides yields a traditional, linear in parameters, gravity equation that can be easily estimated:[13]

(3) $$\ln(T_{ij}) = \alpha_0 + \beta_1 \ln(Y_i) + \beta_2 \ln(Y_j) + \beta_3 \ln(D_{ij}) + \gamma Z_{ij} + \varepsilon_{ij},$$

where, Z_{ij} is a vector of additional controls of interest to the researcher. Common variables include whether the countries share a common language, a common currency, or if both countries are members of a particular trade agreement. The traditional gravity equation in (*3*) can also be estimated across time (in a panel setting), in which case the Z_{ij} vector may contain a set of country-pair fixed effects (Rose 2004).

In 2003, James Anderson and Eric van Wincoop developed a theoretically consistent version of the gravity model using the general equilibrium structure of the model. The implication of their model is that multilateral prices (termed ñmultilateral resistanceò) surface in one form or another. The idea is that trade depends not only on the bilateral barriers separating countries *i* and *j*, but also on the multilateral resistance they face with their partners in the rest of the world. The theoretically consistent model of Anderson and van Wincoop (2003) suggests estimating the gravity equation subject to *N* unobserved multilateral price terms (B&B 2007):

(4) $$\ln\left[\frac{T_{ij}}{Y_i Y_j}\right] = \beta_0 + \beta_3 \ln D_{ij} + \gamma Z_{ij} - \ln P_i^{1-\sigma} - \ln P_j^{1-\sigma} + \varepsilon_{ij}$$

[13] This of course assumes that zero trade does not exist, which is typically not the case. It is common for researchers to either drop zero trade flow observations, or to add one to all zero trade flows so that the logarithmic function is well defined.

subject to $i = 1 \ldots N$ equilibrium conditions:

$$(5) \qquad P_i^{1-\sigma} = \sum_{i=1}^{N} P_i^{\sigma-1} \left(\frac{Y_i}{Y_W} \right) \cdot e^{\beta_3 \ln D_{ij} + \gamma Z_{ij}}$$

where, Y_W denotes world GDP (constant across countries); $P_i^{1-\sigma}$ and $P_j^{1-\sigma}$ are exporter and importer price indices (i.e., the multilateral resistance terms), respectively; and σ is the elasticity of substitution between varieties (i.e., countries).

The general equilibrium structure of Anderson and van Wincoopôs (2003) model is different from the traditional gravity equation in (*3*) due to the explicit role for $P_i^{1-\sigma}$ and $P_j^{1-\sigma}$, and the restriction of the income coefficients to unity. Because the multilateral price terms are largely unobservable, the authors use a nonlinear least squares procedure to recover unbiased estimates of modelôs parameters. However, a computationally easier method to control for the multilateral resistance terms in the cross-section is to estimate equation (*4*) using exporter (*i*) and importer (*j*) fixed effects (Anderson and van Wincoop 2003; Feenstra 2004).[14] In a panel data setting, the multilateral price terms are potentially time varying so the use of country-by-time (*it*, *jt*) fixed effects is more appropriate (B&B 2007). This is the approach applied here.

4. Data

The data sources for the majority of our gravity equation variables are standard. The dependent variable is the natural log of bilateral import flows from country *i* (the exporter) to country *j* (the importer). Bilateral trade flows (T_{ijt}) at five-year intervals in U.S. dollars from 1950-2005 are taken from the International Monetary Fundôs (IMFôs) Direction of Trade Statistics (DOTS). The IMFôs DOTS covers 206 reporting and partner countries. This type of

[14] Note that the inclusion of importer and exporter fixed effects in the cross-section mean that one can drop those variables that are specific to each importer (i.e. GDP_i and GDP_j). Thus, we are left with all country-pair specific effects that are of interest.

country coverage is essential because it allows us to incorporate a large number of non-notified RTAs. Real trade flows (T_{ijt}) in ($1000) U.S. dollars are calculated by deflating bilateral trade flows by the American Consumer Price Index (CPI) available from the Bureau of Labor Statistics.[15]

Gross Domestic Product (GDP) data (in US dollars) are obtained from two primary sources: the World Bank (WB) Development Indicators database; and the United Nations (UN) National Accounts. GDP data from the International Monetary Fundôs (IMF) *Financial Statistics Yearbook* and the Penn World Tables are used to supplement WB and UN data when it is incomplete or missing (IMF 2005).[16]

Distance, contiguity and common language indicators are taken from the *Centre d'Etudes Prospectives et d'Informations Internationales* (CEPII) geo-distance dataset (Mayer and Zignago 2006).[17] CEPII uses the great circle formula to calculate the geographic distance between countries, referenced by latitudes and longitudes of the largest urban agglomerations in terms of population.

Beyond the construction of a database with standard gravity equation covariates, an important contribution of this study is the development of a comprehensive database of RTAs spanning over 45 years (1960-2005). Some 290 bilateral and regional trading agreements (counting the numerous European Union expansions as a single RTA) that were signed and entered into force up to 2005 are accounted for in the database.[18] This is a critical feature of this

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[15] http://data.bls.gov/cgi-bin/surveymost?cu

[16] WB Development Indicators Data can be accessed (with subscription) at: http://ddp-ext.worldbank.org/ext/DDPQQ/member.do?method=getMembers&userid=1&queryId=135, and UN GDP data can be retrieved at: http://unstats.un.org/unsd/snaama/dnllist.asp. Penn World Tables can be accessed at the Center for International Comparisons at the University of Pennsylvaniaôs website: http://pwt.econ.upenn.edu/

[17] CEPII is an independent European research institute on the international economy stationed in Paris, France. CEPIIôs research program and datasets can be accessed at www.cepii.com.

[18] We actually have 296 RTAs in the database. However, six of these concern the numerous expansions of the original EU agreement.

study because most previous work has incorporated only a handful of RTAs notified to the GATT/WTO. For each agreement, we record three important statistics: (i) the type of agreement; (ii) the number of members; and (iii) whether the agreement has been notified to the WTO. In addition, we also document whether one, both or none of the RTA members are current WTO members. Our definition of GATT/WTO membership is akin to Rose (2004).[19]

The data sources used to construct the RTA database are found in the appendix. We draw heavily from three sources: the Preferential Trade Agreements Database (PTAD) published by McGill Universityøs Faculty of Law; the WTO list of RTAs published by the CRTA; and the recent survey of RTAs published by the World Bank (see Mevedev 2006).[20] The WTO publishes a list of RTAs that are notified to the CRTA and indicates the date the agreement entered into force. Some agreements overlap creating Baghwatiøs ñspaghetti bowlò phenomenon. This is particularly true of the African agreements. While this will not affect the results if both of the overlapping agreements are either notified or non-notified, it does create a problem if some RTA members are party to one notified agreement and one (or more) non-notified agreement. While these occasions are rare, in instances where they do occur, we incorporate the longest standing RTA and record information for that agreement.

The completed panel dataset spans 1960-2004 in five-year intervals and potentially contains 422,300 (206*205*10) observations. However, after dropping zero trade flow records, the completed panel dataset contains 112,928 observations.

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[19] We do not control for *de facto* or *de jure* membership as in Tomz, Goldstein, and Rivers (2007). A list of GATT/WTO members prior to and after the Uruguay Round of 1995 can be found at: http://www.wto.org/English/thewto_e/gattmem_e.htm and http://www.wto.org/English/thewto_e/gattmem_e.htm

[20] The McGill and WTO databases are freely available at: http://ptas.mcgill.ca/; and http://www.wto.org/english/tratop_e/region_e/region_e.htm

5. Results

The results are organized in two main sections. In section one we test whether the GATT/WTO has cultivated successful RTAs using cross-section and panel data methods and allowing for separate effects based on the notification status of an RTA. Cross-section regressions are estimated at five-year intervals from 1950-2005. In the panel regressions, we test the same hypothesis using log level data but include additional controls for the implementation and phase-in period of an RTA (Grant and Lambert 2008; B&B 2007). This is particularly important since almost all RTAs are phased-in over 10 to 15 year time periods. Moreover, if the CRTA is correct in its assessment that non-notified RTAs are not reporting their agreements to the WTO because of difficulties with implementation or reductions in trade barriers, then it seems reasonable to gauge how these agreements are progressing relative to those RTAs which are notified to the WTO. Section two provides a set of robustness checks by conditioning on the development level of RTA members (i.e., North-North, North-South, South-South) and the size of the agreement (i.e., the number of members).

RTA Notification Using Cross-Sectional Data

Table 1 contains our cross-section results. The default specification is theoretically consistent gravity equation that uses country-specific fixed effects and scales trade flows by the product of importer and exporter GDPs (Feenstra 2004; Anderson and van Wincoop 2003). The cross-section gravity model is estimated at five-year intervals from 1960-2005 using ordinary least squares and standard errors that are robust to clustering on country pairs. In each regression we allow for separate coefficients for notified (N_RTA_{ij}) and non-notified (NN_RTA_{ij}) RTAs and test for any significant differences between the two. If the WTOôs committee on regional trade

agreements is right, then we should see notified RTAs outperforming their non-notified counterparts.

Like many previous studies, the gravity model fits the data well. Countries that share a common border and speak a common language trade more with each other as expected, whereas doubling the economic distance between countries more than halves trade in most cross-section years. Language similarity and adjacency variables are highly significant and have typical magnitudes found in the literature (see for example Rose 2004 or B&B 2007).

The effects of notified and non-notified RTAs on membersô international trade in the cross-section are consistent with recent findings in B&B (2007) and Ghosh and Yamarik (2004). RTAs, regardless of notification status, seem to promote trade significantly in some years, while in other years the effect on trade is small, insignificant, and in some cases, even negative. In 1970 for example, notified and non-notified country-pairs in an RTA traded an additional 123 ((exp(0.80)-1)*100) and 183 percent more with each respectively, but the difference between notified and non-notified agreements is not statistically significant. By 1990 however, two RTA members who notified their agreement traded just 11 percent more with each other. The trade flow effect of non-notified RTAs in 1990 was not significant nor is the difference in effect size between notified and non-notified RTAs.

The variation in RTA effects over different cross-section years seems implausible and is likely plagued by endogeneity concerns of B&B (2007). The authors recently addressed this issue and found that countries select endogenously into RTAs. The authors found that panel data methods applied to a theoretically consistent gravity equation that controls for multilateral resistance tends to eliminate this endogeneity bias. Next, we turn to panel data methods to get a more reliable indication of the effects of notification on RTA member trade.

RTA Notification using Panel Data Methods

Table 2 contains the econometric results using panel data. In columns (1) through (3), we use log-level data without lagged RTA effects and include different fixed-effects controls typically found in the literature: (i) Time and Country Pair fixed effects (Rose 2004); (ii) Time and Country-Specific fixed Effects; and (iii) Country-by-Time Specific Fixed Effects (B&B 2007; Grant and Lambert 2008). The final three columns ((4) to (6)) in Table 2 are identical to the first three except we allow for lagged RTA effects to control for long transitional periods of trade liberalization that characterize almost all RTAs. This is also important in the case of non-notified RTAs since the CRTA believes that RTA members may not notify their agreement due to difficulties meeting implementation periods. Thus the cumulative effect of an RTA may be even larger once we account for the transitional period of trade liberalization of an RTA.

Again the gravity model works well. Economic size, measured by the GDP of the importing and exporting countries, is consistently positive and significant. Distance reduces trade while speaking a common language and sharing a common border facilitates trade. The use of panel data generates plausible and robust RTA effects, regardless of the type of fixed effects estimator one uses (country-pair, country specific, or country-by-time fixed effects). The formation of an RTA that is notified to the WTO increases membersô trade by an additional 64 percent.[21]

Has the WTO cultivated successful RTAs through monitoring, evaluation and ensuring compliance with Article XXIV for those agreements notified to the CRTA? The short answer is no. In fact, the WTO may actually impede the effectiveness of those RTAs notified to the CRTA. Using our preferred specification which controls for potentially time-varying

[21] One will note that the effect of RTAs on trade involving a notified agreement is very similar to the findings in Baier and Bergsrtand (2007) who restricted their attention to WTO-notified agreements and found that RTAs approximately doubled members trade after controlling for time-varying multilateral resistance.

multilateral resistance using country-by-time fixed effects and no lags (column (3)), the effect of notified RTAs is to increase membersô trade by 64 percent. However, the trade flow effect of a non-notified RTA is to increase membersô trade by 92 percent ï an increase of almost 30 percentage points over RTAs notified to the WTO. This difference is also statistically significant.

While the above result provides some initial insight on how WTO-notified RTAs compare to non-notified RTAs, it does not account for the phase-in period of an RTA (B&B 2007). It may take several years, or even longer than a decade before the trade flow effects of RTAs are measurable. Moreover, the CRTA believes that members of non-notified RTAs are choosing not to notify their agreements to the WTO for fear of being incompliant with GATT/WTO rules relating to trade liberalization commitments and implementation periods stretching well beyond ten years. This is also one of the main reasons why the majority of non-notified RTAs are categorized as partial scope agreements as figure 4 illustrated.

Columns (4) through (6) estimate identical fixed effects gravity models but control for 15 years of RTA phase-in using three dummy variable lags for notified and non-notified agreements. The results are striking. After 15 years of RTA phase-in, two RTA members of a non-notified agreement increased trade by an average of 245 percent compared to just 28 percent for notified agreements when we specify a country-by-time fixed effects gravity model (column (6)). In other words, non-notified RTAs which are presumably struggling with implementation and trade liberalization issues exceeded WTO-notified agreements by a factor of more than eight! Moreover, a test of equality of notified and non-notified RTA effects is strongly rejected in all three specifications that control for implementation and phase-in (columns (4)-(6)).

This surprising result is also robust. Estimating a traditional panel data gravity equation with time and country-pair fixed effects (column (4)) as in Rose (2004), or a smaller version of the model that controls for time-invariant multilateral resistance using country specific fixed effects delivers the same basic result. For example, with time invariant country-specific fixed effects (column (5)) non-notified RTAs increased membersô trade by 164 percent compared to 60 percent for notified agreements. This is a difference of more than 100 percentage points and is highly significant at all conventional levels.

RTA Notification by Development Status

Why would non-notified RTAs, many of which are partial scope in nature, appear to be outperforming their notified counterparts which are predominantly free trade agreements? In this section we test the robustness of this puzzling result by conditioning on the level of development of the country-pairs in notified and non-notified RTAs. Subramanian and Wei (2006) found a large positive WTO effect when restricting their sample to developed countries because these countries participated more actively in the WTO negotiations. A simialr story may hold in the formation and implementation of an RTA. Developed countries may participate more actively in the trade liberalization and implementation commitments of an RTA since these provisions are monitored by the WTO (i.e., the CRTA). Table 3 reports the results after sub-setting on three levels of development: (i) North-North trade; (ii) North-South trade; and (iii) South-South trade. Again our preferred specification of the gravity model uses country-by-time fixed effects and separate RTA coefficients for notification status. Each regression is estimated twice, once with phase-ins and once without.

Aside from the typical gravity equation estimates, does the level of development of the country-pair affect the degree to which RTA notification impacts trade flows? The answer is a

resounding no. In all but one development category (South-South, no phase-ins), RTAs that have never been notified to the WTO, have not been subject to compliance standards of GATT Article XXIV, and are generally partial scope in nature, appear to increase membersô trade on a scale that is not seen in notified RTAs (typically free trade areas). What is also interesting is that non-notified RTAs outperform notified agreements even when we *do not account* for implementation and phase-in. In the log-level panel data scenario above, notified and non-notified agreements performed similarly in terms of increasing membersô trade when we did not account for implementation and phase-in periods. However, when we condition on the development status of country pairs, notifying the RTA to the WTO actually impedes the performance of the RTA.

For Trade involving industrial countries (North-North), the numbers suggest that notified RTAs increase membersô trade by a modest 14 percent in the concurrent period (i.e., no phase-ins) and actually decreases slightly to a nine ((exp(0.09)-1)*100) percent increase after controlling for implementation (Table 3). For non-notified regional agreements the respective trade increases are 70 ((exp(0.53)-1)*100) and 73 ((exp(0.55)-1)*100) percent. Moreover, the difference in effect sizes between notified and non-notified agreements are significant with and without phase-ins. Similar magnitudes appear when we slice the data according to North-South trade flows. Interestingly, the difference between notified and non-notified agreements decreases when RTA member trade flows between low-income countries (South-South). In the concurrent period (no phase-ins) the formation of an RTA that is notified to the WTO and involves trade between two lower-income countries increased trade by 125 percent ((exp(0.81)-1)*100) compare to 84 percent for non-notified RTAs involving lower-income countries.

RTA Notification and the Scale of the Agreement

Are there any notified RTAs that are seeing the trade increases found in non-notified agreements? Figure 4 illustrated that many of the non-notified agreements are simple bilateral RTAs involving two members. It may be much easier to negotiate the trade increases weôve witnessed among non-notified agreements if the RTA involves just two members. As weôve seen with the WTO negotiations, its much harder to get consensus on trade liberalization and implementation issues with 151 members as it is with just two members. To be absolutely sure that the results are not driven by the scale of the RTA, we estimate several additional regressions that condition on the size of the RTA (in terms of the number of negotiating members). That is, given the comprehensiveness of our RTA database, we have enough RTAs (and therefore trade flow variation) to identify the trade flow effects of notified and non-notified RTAs by the number of RTA members.

Table 4 presents the results after estimating a gravity model that distinguishes between the sizes of an RTA as measured by the number of members. Five different RTA sizes are evaluated: (i) RTAs with two members; (ii) RTAs with three to five members; (iii) RTAs with six to ten members; (iv) RTAs with 11 to 20 members; and (v) RTAs with greater than 20 members. Again we run each regression twice, once using a concurrent RTA dummy variable for notified and non-notified agreements, and once with lagged RTA effects to control for implementation and phase-in.

We also report the results from a regression that drops all bilateral RTAs. This is important because if the majority of non-notified RTAs involve just two members, whereas notified RTAs tend to include blocs of three or more members, then we might expect non-notified RTAs to do a better job of increasing membersô trade if there are significant coordination costs as membership increases. To be absolutely sure that the large trade increases

of non-notified RTAs compared to notified agreements discussed above is not driven by any scale effects with respect to RTA size, we estimate a regression that excludes all bilateral RTAs, both notified and non-notified. The final column in Table 4 drops small (and potentially insignificant), as Subramanian and Wei (2007) did. Following these authors, we exclude trade flows less than $500,000 from the analysis as a final robustness check.

The results are robust. It appears that non-notified RTAs are significantly outperforming notified agreements despite monitoring and examination efforts of notified RTAs by the WTO to ensure RTA compliance. Moreover, this finding is unrelated to the size of the RTA. Ignoring the final column in Table 4 which drops small trade values, the simple average effect sizes across all 12 regressions (two for each subset of RTA size) regarding the number of members in the RTA reveals that non-notified agreements have increased membersô trade by an average of 209 ((exp(1.13)-1)*100) percent. This compares to an increase of just 47 ((exp(0.38)-1)*100) percent for notified agreements. The only case in which we find an effect size for notified RTAs that is slightly greater than non-notified agreements is for RTAs that include three to five members. However, when we control for implementation and phase-in using RTA lags, a simple test of the difference between notified and non-notified agreements for RTAs encompassing three to five members can not be rejected.

In all other cases, including the exclusion of all bilateral RTAs column, non-notified agreements significantly outperform their notified counterparts. Moreover, there are large and statistically significant differences between notified and non-notified agreements across RTA sizes. If coordination and RTA implementation is costly to negotiate, then we might expect RTAs involving two members to have the largest effect on membersô trade. However, our results suggest this is not the case. Notified bilateral RTAs (two members) increased membersô

trade by 25 ((exp(0.22)-1)*100) percent in the concurrent period but this effect falls to nearly zero after 15 years of phase-in. Similarly, non-notified RTAs involving just two members increased trade by 86 ((exp(0.62)-1)*100) percent in the concurrent period before falling to an increase of 63 percent after 15 years of implementation. While this may suggest that bilateral RTAs are having difficulties with implementation compared to larger RTA blocs, it may also reflect the fact that the increase in trade within bilateral RTAs is more immediate. In other words, controlling for RTA phase-in may not be as important with bilateral agreements.

Interestingly, trade within larger, non-notified RTA blocs of six to ten members or 11 to 20 members seems to generate the largest increase in membersô trade. RTA members belonging to a non-notified regional bloc with six to ten members traded an astonishing 18 times (exp(2.94)) more with each other holding other factors constant. In contrast to bilateral RTAs, most of the increase (over 80 percent) in non-notified RTA trade occurred during the final five years of a 15 year implementation period. What is puzzling is that the trade flow effect of notified RTA blocs with six to ten members is *negative and significant* in the ten and 15 year implementation period (N_RTA_{ijt-10} *and* N_RTA_{ijt-15}). It wouldnô t be that much of a concern if notified RTA blocs increased trade during the concurrent or five-year lagged period, but this is not the case. There is no trade flow increase during the first five years of implementation and negative and significant decreases in trade during the ten and 15 year period of implementation results in a negative cumulative effect for notified agreements with six to ten members (Table 4).

Similarly large trade increases are obtained when we look at non-notified agreements that encompass 11 to 20 members, even when we do not control for RTA phase-in. Again however, non-notified RTAs are significantly outperforming notified agreements. This is not to say that there is no trade flow effect of notifying an agreement to the WTO because as the results show,

notified RTAs are performing reasonably well such as RTAs with 11 to 20 members. The effect on trade of a notified agreement that encompasses 11 to 20 members is 118 ((exp(0.78)-1)*100) percent without adjusting for phase-ins. However, this compares to 180 percent effect for non-notified agreements.

Even when we drop small trade flows less than $0.5 million, the results are robust.

6. Conclusions

Despite all the hype about the successfulness of the GATT/WTO in facilitating global trade, Rose (2004) claims that most of the increase in world trade can be explained by various natural factors with little role for the GATT/WTO. A growing body of literature soon followed. Remarkably however, the 14 or so studies that attempt to overturn Rose (2004) have relied on various subsets of the data, more elaborate econometric specifications, or more disaggregated commodity sectors.[22] It turns out that the GATT/WTO can deliver positive results if one is willing to select on certain commodity sectors, developed countries, or alternative membership status. Yet we know *a priori* where the GATT/WTO has not worked well, so conditioning on these areas to generate a positive ówTO effectô is not the most convincing argument to promote the overall success of the institution.

For these reasons, we set out to determine whether there are other areas in which the GATT/WTO has worked well (without conditioning on its failures). One area is through regional trade agreements. In other words, has the GATT/WTO fostered successful regional trade agreements? This issue is particularly important because RTAs are receiving an unprecedented amount of attention from international trade economists and are demanding a growing amount of political resources. There are now more RTAs in existence than there are

[22] Andrew Roseôs website documents the studies that have attempted to explain or overturn his original finding (see http://faculty.haas.berkeley.edu/arose/RecRes.htm#GATTWTO)

WTO members and the recent collapse of the WTO negotiations, now in its eighth year of negotiations, will only increase the impetus for countries to negotiate regionally. Moreover, RTAs are an attractive policy tool because they often address a much wider range of topics concerning trade liberalization and usually involve fewer negotiating parties compared to the multilateral process of the WTO.

We exploited variation in the notification status of an RTA to determine whether Article XXIV and CRTA compliance mechanisms have promoted successful RTAs. However, the ability of the CRTA to promote effective RTAs is limited to those agreements which are notified to the WTO. We claim that RTa members may chose not to notify their agreement fro three reasons. First, non-notification may be a strategic choice. RTA members may know a priori that the agreement is incongruent with the rules of Article XXIV. Second, not notifying the RTA may be a pragmatic choice. RTA members may need additional time to address complex issues that are politically sensitive to at least some members. This is particularly relevant in the case of large ñplurilateralò agreements, or RTAs that attempt to provide deeper integration by liberalizing non-tariff barriers including technical standards, food safety concerns, investment and competition policy; areas where the WTO has made very little progress. Finally, RTA members may choose not to notify for fear that some provisions governing the multilateral framework may trump RTA rules.

Remarkably our dataset covering an exhaustive list of RTAs in existence up to 2005 reveals that almost half (43%) of these agreements have never been notified to the CRTA, nor are they recognized in the WTO database of RTAs. The CRTA is charged with monitoring and ensuring the compliance of notified RTAs with Article XXIV governing trade in goods. Regional trade agreements are not an exception to the GATT/WTO rules. Just as the GATT/WTO works

to ensure Members are meeting the provisions of nearly 40 Articles under its purview, the institution also works to ensure that RTAs are meeting the provisions of Article XXIV. However, the effectiveness of the GATT/WTO in ensuring successful RTAs is limited to those agreements that are actually notified to the CRTA.

After several empirical exercises using the gravity model, we find very little evidence that notified RTAs, which are subject to CRTA examination and compliance standards, have increased trade more than non-notified agreements. Whether WTO members chose to notify their agreement to the WTO may be a strategic choice. The CRTA believes that RTA members chose not to notify their agreement because of difficulties meeting implementation periods, and more importantly, reducing barriers to trade on substantially all trade within the agreement. Moreover, we show that many of the non-notified agreements are partial scope in nature compared to notified agreements which tend to be free trade areas. If the CRTAôs assessment is right, then one might expect that notified agreements outperform non-notified agreements.

Has the GATT/WTO cultivated successful RTAs? Our results suggest that the answer to this question is a resounding no! In almost every empirical specification, we find that non-notified agreements increase membersô trade more than notified agreements. In fact, current WTO examination and compliance standards may actually impede the effectiveness of notified agreements. This is not to say that RTAs that are notified to the WTO are not liberalizing and increasing membersô trade. In many of our panel specifications, notified RTAs expand membersô trade by an average of 63 percent (without phase-in periods). However, the trade flow effect of a non-notified RTA is 92 percent. When we add phase-in periods to the panel data analysis, the difference is eve larger. Controlling for 15 years of RTA implementation and

phase-in periods, notified RTAs increased membersô trade by an average of 42 percent compared to an increase of 245 percent for non-notified agreements.

The obvious question is: why? If notified RTAs are subject to examination and compliance standards that ensure aggressive trade liberalization, then what is the hold up? There are at least two reasons why non-notified RTAs may do a much better job of increasing RTA member trade; the first relates to CRTA examination process and the second relates to the multilateral process of the WTO. The CRTA has been plagued by continued disagreement about the interpretation of the rules governing RTAs enshrined in Article XXIV. Clem Boonekamp, Director of the Trade Policies Review Division of the WTO notes: ñ... keeping track of the number, type, scope and more importantly, the effectiveness and compliance of RTAs remains an elusive taskò (WTO 2007). Specifically, there is no consensus among Members and the CRTA of the meaning of ñsubstantially all tradeò when referring to trade barrier reductions within an RTA. There is also no consensus on what a ñreasonable length of timeò means when referring to implementation periods of an RTA. The CRTA

The second reason why non-notified RTAs increase membersô trade more than notified agreements relates to pre-existing distortions. Non-notified agreements may include a larger proportion of non-WTO members with relatively high trade barriers. If non-notified RTAs are successful in eliminating or significantly reducing these large pre-existing distortions, this could generate a large trade response. Another way of stating this is the multilateral trade liberalization process of the GATT/WTO may work well. If notified agreements contain a large number of WTO members whose trade barriers have been reduced over time, then further reductions in trade barriers through regional integration may not impact trade flows to the degree we see in non-notified RTAs. However, our results suggest that there is considerable scope for

strengthening GATT/WTO rules that govern RTAs or developing more effective CRTA compliance mechanisms to ensure that future RTAs are in fact successful.

References

Aitken, N.D. 1973. ñThe Effect of the EEC and EFTA on European Trade: A Temporal Cross-Section Analysis.ò *American Economic Review* 63(5): 881-892.

Anderson, J.E., and E. van Wincoop. 2003. ñGravity with Gravitas: A Solution to the Border Puzzle.ò *American Economic Review* 93(1): 170-92.

Baier, S.L., and J.H. Bergstrand. 2007. ñDo Free Trade Agreements Actually Increase Membersô International Trade?ò *Journal of International Economics* 71(1): 72-95.

Brada, J.C., and J.A. Mendez. 1985. ñEconomic Integration among Developed, Developing and Centrally Planned Economies: A Comparative Analysis.ò *Review of Economics and Statistics* 67(4): 549-56.

Crawford, J., and R. Fiorentino. 2005. ñThe Changing Landscape of Regional Trade Agreements,ò WTO Discussion Paper No.8, World Trade Organization, Geneva.

Crawford, J.A. and S. Laird. 2000. ñRegional Trade Agreements and the WTO,ò CREDIT Research Paper No. 00/3, CREDIT School of Economics, University of Nottingham, Nottingham, UK, March.

DeRosa, D.A. 1998. ñRegional Integration Arrangements: Static Economic Theory, Quantitative Findings and Policy Guidelines.ò World Bank Policy Research Working Paper No. 2007, World Bank, Washington D.C.

Eichengreen, B., and D. Irwin. 1998. ñThe Role of History in Bilateral Trade Flows,ò In *The Regionalization of the World Economy*, edited by Jeffrey A. Frankel. Chicago: University of Chicago Press, pp. 33-57.

Feenstra, R. 2004. *Advanced International Trade: Theory and Evidence*. Princeton, NJ: Princeton University Press.

Feenstra, R., R.E. Lipsey, D. Haiyan, A.C. Ma, and H. Mo. 2005. ñWorld Trade Flows: 1962-2000,ò NBER Working Paper No. 11040, National Bureau of Economic Research, Cambridge MA.

Frankel, J.A. 1997. *Regional Trading Blocs in the World Economic System*. Washington, DC: Institute for International Economics.

Frankel, J.A., E. Stein, and S.J. Wei. 1995. ñTrading Blocs and the Americas: The Natural, the Unnatural, and the Super-Natural.ò *Journal of Development Economics* 47(1): 61-95.

Frankel, J.A., E. Stein, and S.J. Wei. 1996. ñRegional Trading Arrangements: Natural or Supernatural?ò *American Economic Review* 86(2): 52-56.

Ghosh, S, and S. Yamarik. 2004. ñAre Regional Trading Arrangements Trade Creating? An Application of Extreme Bounds Analysis.ò *Journal of International Economics* 63(2): 369-95.

Grant, J.H. and D.M. Lambert. 2008. ñDo Regional Trade Agreements Increase membersô Agricultural Trade?ò American Journal of Agricultural Economics, (*forthcoming*)

International Monetary Fund. 2002. International Financial Statistics Yearbook. Washington, D.C., various issues.

Krueger, A.O. 2000. ñTrade Creation and Trade Diversion under NAFTA.ò NBER Working Paper No. 7429, National Bureau of Economic Research, Cambridge, MA.

Mayer, T. and S. Zignago. 2006. ñNotes on CEPIIôs Distance Measures,ò unpublished manuscript, Paris france, May, 2006.

Medvedev, D. 2006. ñPreferential Trade Agreements and Their Role in World Trade,ò World Bank Policy Research Working Paper No. WPS4038. Washington DC, October.

Rose, A. 2004. ñDo We Really Know That the WTO Increases Trade?ò *American Economic Review* 94(1): 8-114.

Soloaga, I. and A.L. Winters. 1999. ñHow has regionalism in the 1990s Affected Trade?ò World Bank Policy Research Working Paper No. 2156, Washington, D.C.

Tinbergen, J. 1962. *Shaping the World Economy*. New York: The Twentieth Century Fund.

World Bank. *World Development Indicators*, CD-ROM. Washington, DC: World Bank, 2001.

Figure 1. Share of International Trade Occurring under RTAs

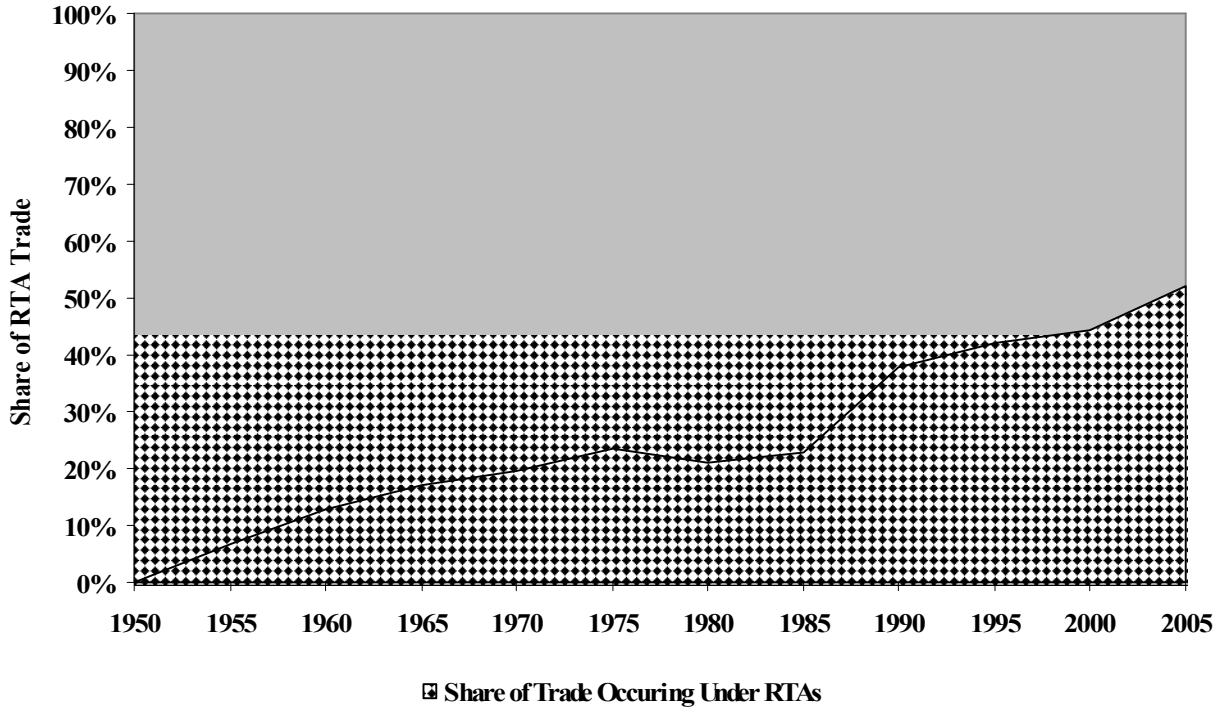


Figure 2. Mean Value of Trade by Notification Status

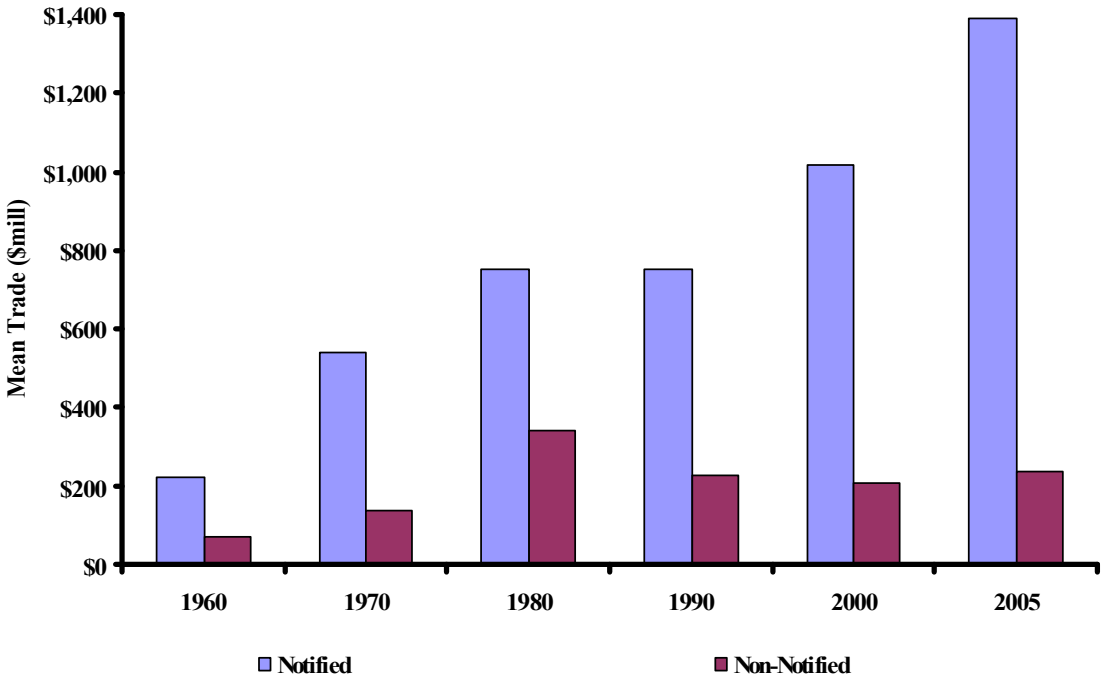
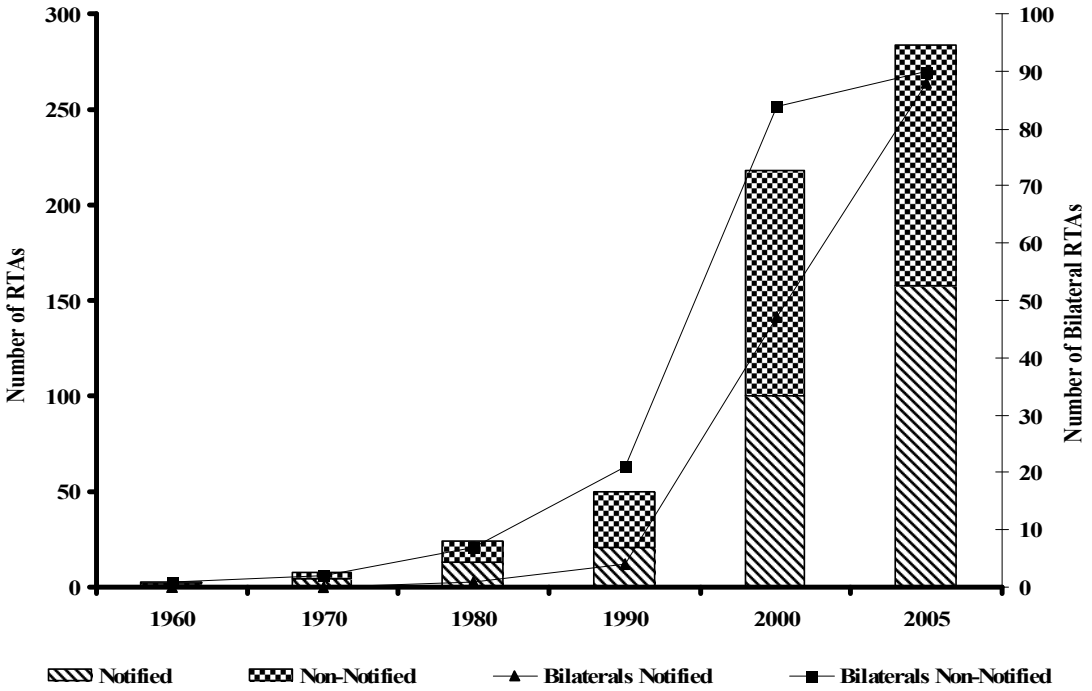
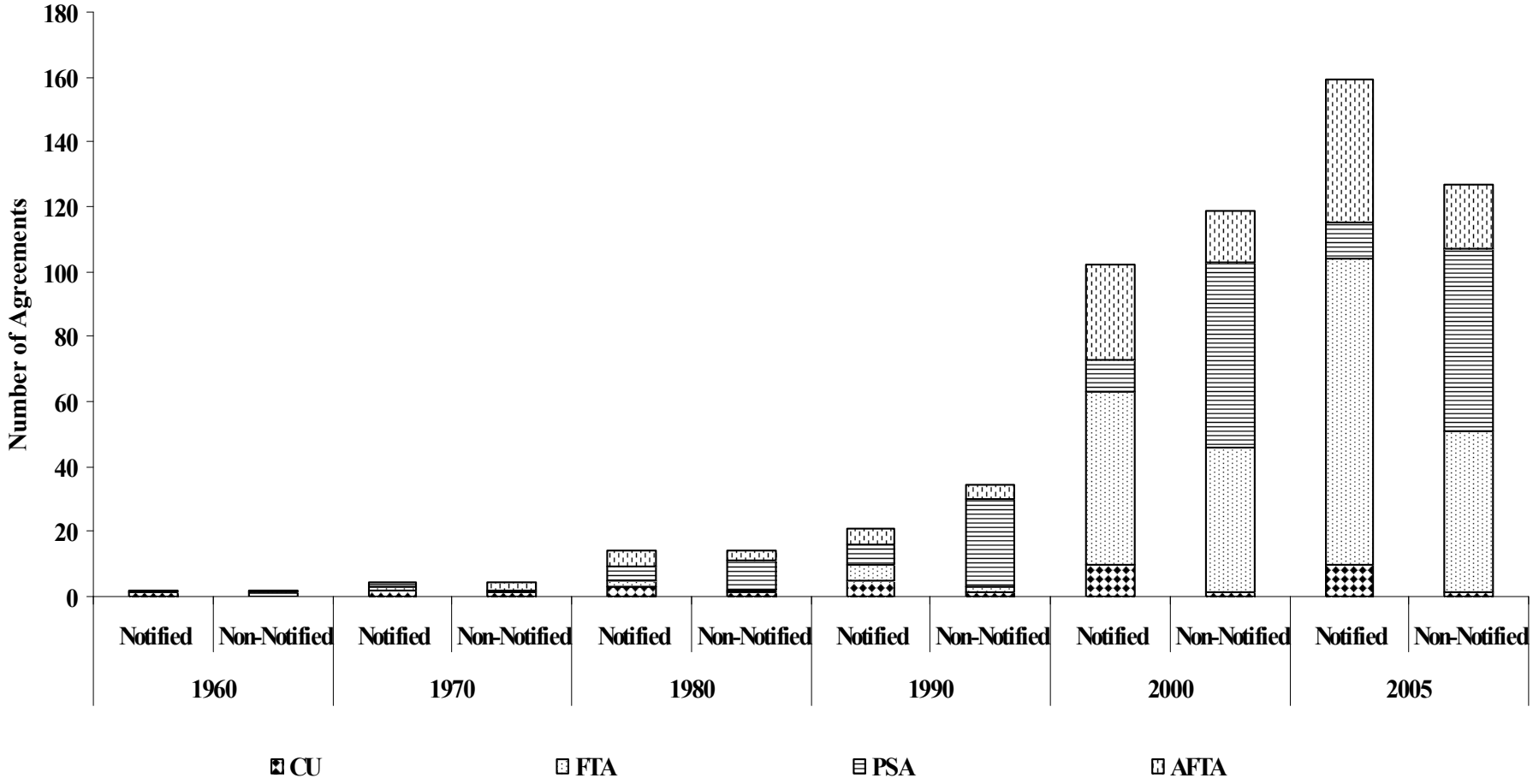


Figure 3. Notified and Non-Notified RTAs in Force and Bilateral Agreements



Note: the term ñBilateralsò refers to regional trade agreements that involve only two members

Figure 4. Notified and Non-Notified RTAs in Force by Type of Agreement and Year



Note: CU denotes a Customs Union; FTA denotes a Free Trade Agreement; PSA denotes a Partial Scope Agreement; and AFTA denotes an Accession Free Trade Agreement (i.e., EFTA-Chile)

Table 1: Notified and Non-Notified RTAs using Cross-Section Data

	Cross-Section Years					
	1960	***1970***	***1980***	***1990***	***2000***	***2005***
GDP_i	1.00	1.00	1.00	1.00	1.00	1.00
	----	----	----	----	----	----
GDP_j	1.00	1.00	1.00	1.00	1.00	1.00
	----	----	----	----	----	----
$Dist_{ij}$	-0.71	-0.87	-1.12	-1.27	-1.28	-1.32
	(-19.21)	(-31.2)	(-42.39)	(-51.27)	(-58.09)	(-57.21)
$Contig_{ij}$	0.25	0.20	0.14	0.36	0.77	0.81
	(1.88)	(1.87)	(1.34)	(3.46)	(8.8)	(9.1)
$Lang_{ij}$	0.48	0.72	0.61	0.76	0.70	0.75
	(7.01)	(13.5)	(11.5)	(15.28)	(15.69)	(16.67)
N_RTA_{ij}	-0.03	0.80	0.34	0.10	0.52	0.52
	(-0.18)	(4.83)	(3.73)	(1.81)	(11.36)	(12.25)
NN_RTA_{ij}	1.25	1.04	0.43	0.14	0.45	0.64
	(1.44)	(2.8)	(1.81)	(0.94)	(7.43)	(10.4)
Constant	-37.52	-34.98	-34.53	-33.95	-35.22	-34.97
	(-29.73)	(-22.98)	(-55.54)	(-64.62)	(-96.72)	(-93.65)
F-Test $\beta^{N\_RTA} = \beta^{NN\_RTA}$	***2.09***	***0.36***	***1.02***	***0.05***	***0.87***	***3.33***[a]
N	2,922	7,556	10,547	12,079	17,382	18,418
R^2	0.60	0.54	0.47	0.47	0.46	0.49
F-Statistic	24.99	34.34	35.85	48.22	61.93	74.97

Note: the dependent variable is the natural logarithm of bilateral trade (imports) scaled by the product of importer and exporter GDP. $NOTRTA_{ij}$ and $NNOTRTA_{ij}$ denote notified and non-notified RTAs, respectively. Cross-section regressions include country-specific fixed effects (omitted for brevity). T-statistics are in parentheses. Standard errors are robust to clustering on country pairs.

[a] Significant at the 10 percent level.

Table 2. Notified and Non-Notified RTAs with Panel Data and Lags, 1960-2005

	--------Panel Regressions without Lags---------			*----------Panel Regressions with Lags----------*		
	(1) Time & Country-Pair (ij) FE	*(2) Time & Country(i,j) FE*	*(3) Country-by-Time Specific (it, jt) FE*	*(4) Time & Country-Pair FE With Lags*	*(5) Time & Country (i,j) FE with Lags*	*(6) Country-by-Time Specific(it,jt) FE With Lags*
GDP_{it}	0.55	0.54	1.00	0.64	0.69	1.00
	(54.23)	(43.17)	----	(41.68)	(34.01)	----
GDP_{jt}	0.52	0.48	1.00	0.65	0.63	1.00
	(49.2)	(36.65)	----	(40.22)	(29.22)	----
$Dist_{ij}$	----	-1.13	-1.15	----	-1.05	-1.11
	----	(-133.51)	(-137.07)	----	(-97.47)	(-98.45)
$Contig_{ij}$	----	0.41	0.39	----	0.17	0.18
	----	(12.17)	(11.75)	----	(4.48)	(4.6)
$Lang_{ij}$	----	0.71	0.69	----	0.64	0.62
	----	(42.36)	(41.44)	----	(31.12)	(29.81)
N_RTA_{ijt}	0.46	0.52	0.49	0.33	0.24	0.16
	(21.49)	(25.85)	(23.96)	(11.3)	(6.68)	(4.02)
N_RTA_{ijt-5}	----	----	----	0.22	0.09	0.05
	----	----	----	(6.1)	(1.83)	(0.84)
N_RTA_{ijt-10}	----	----	----	0.08	-0.08	-0.04
	----	----	----	(2.09)	(-1.45)	(-0.63)
N_RTA_{ijt-15}	----	----	----	0.22	0.22	0.18
	----	----	----	(6.36)	(4.72)	(3.53)
NN_RTA_{ijt}	0.36	0.40	0.65	0.31	0.24	0.19
	(11.6)	(12.78)	(20.12)	(7.37)	(4.59)	(3.41)
NN_RTA_{ijt-5}	----	----	----	0.32	0.25	0.33
	----	----	----	(6.78)	(3.9)	(4.59)
NN_RTA_{ijt-10}	----	----	----	0.10	0.13	0.31
	----	----	----	(1.78)	(1.75)	(3.8)
NN_RTA_{ijt-15}	----	----	----	0.30	0.35	0.40
	----	----	----	(3.74)	(3.83)	(4.22)
Cumulative N_RTA	**0.46**	**0.52**	**0.49**	**0.85**	**0.47**	**0.35**
Cumulative NN_RTA	**0.36**	**0.40**	**0.65**	**1.03**	**0.97**	**1.24**
N	111,994	111,994	108,294	50,862	50,862	46,249
R^2	0.86	0.69	0.50	0.90	0.72	0.56
F	1,225	803.36	34.38	545.26	515.93	27.82

Note: the dependent variable is the natural logarithm of bilateral trade (imports) except when country-by-time fixed effects are used. FE denotes fixed effects. Cumulative Notified and Non-Notified RTA effects are calculated by summing concurrent (*t*) and the five, ten, and 15 year lagged coefficients (*t-5*, *t-10*, *t-15*). T-statistics are in parentheses. Standard errors are robust to clustering on country pairs.

Table 3: Notified and Non-Notified RTAs by Development Status, 1960-2005

	---North-North-Trade---		---North-South-Trade---		---South-South-Trade---	
	No Phase-ins	*With Phase-ins*	*No Phase-ins*	*With Phase-ins*	*No Phase-ins*	*With Phase-ins*
GDP_{it}	1.00	1.00	1.00	1.00	1.00	1.00
	----	----	----	----	----	----
GDP_{jt}	1.00	1.00	1.00	1.00	1.00	1.00
	----	----	----	----	----	----
$Dist_{ij}$	-0.88	-0.87	-1.35	-1.23	-1.18	-1.12
	(-45.69)	(-39.16)	(-98.73)	(-69.56)	(-87.19)	(-50.5)
$Contig_{ij}$	-0.04	-0.02	0.13	0.24	0.54	0.26
	(-0.69)	(-0.3)	(1.56)	(2.49)	(12.23)	(4.27)
$Lang_{ij}$	0.54	0.52	0.75	0.68	0.67	0.57
	(13.65)	(11.94)	(31.95)	(23.78)	(25.17)	(13.64)
N_RTA_{ijt}	0.13	0.02	0.17	0.08	0.81	0.27
	(3.33)	(0.31)	(4.18)	(1.09)	(25.23)	(3.48)
N_RTA_{ijt-5}	----	0.11	----	0.08	----	0.03
	----	(1.43)	----	(0.66)	----	(0.27)
N_RTA_{ijt-10}	----	0.01	----	0.00	----	0.07
	----	(0.13)	----	(0)	----	(0.69)
N_RTA_{ijt-15}	----	-0.04	----	-0.29	----	0.51
	----	(-0.63)	----	(-2.5)	----	(5.64)
NN_RTA_{ijt}	0.53	-0.08	0.50	0.28	0.61	0.13
	(4.79)	(-0.33)	(4.68)	(1.97)	(14.26)	(1.46)
NN_RTA_{ijt-5}	----	0.41	----	0.11	----	0.26
	----	(1.36)	----	(0.63)	----	(2.27)
NN_RTA_{ijt-10}	----	0.14	----	0.39	----	0.19
	----	(0.52)	----	(1.06)	----	(1.56)
NN_RTA_{ijt-15}	----	0.07	----	0.00	----	0.38
	----	(0.42)	----	(-0.01)	----	(2.61)
Cumulative N_RTA	**0.13**	**0.09**	**0.17**	**-0.13**	**0.81**	**0.87**
Cumulative NN_RTA	**0.53**	**0.55**	**0.50**	**0.79**	**0.61**	**0.95**
N	7,923	5,196	52,239	26,435	48,132	14,618
R^2	0.67	0.70	0.53	0.54	0.55	0.65
F-Statistic	25.33	27.2	18.45	14.38	22.87	15.45

Note: dependent variable is the natural logarithm of bilateral imports scaled by importer and exporter GDP. All regressions include country-by-time fixed effects (FE). Cumulative Notified and Non-Notified RTA effects are calculated by summing concurrent (*t*) and five, ten, and 15 year lagged coefficients (*t-5*, *t-10*, *t-15*). T-statistics are in parentheses. Standard errors are robust to clustering on country pairs.

Table 6. Further Robustness Checks using Panel Data, 1960-2005

	2 RTA Members		3 to 5 RTA Members		6 to 10 RTA Members		11 to 20 RTA Members		Greater than 20 RTA Members		Excluding Bilateral RTAs		Trade Values Greater than $0.5 Mill.	
	No Phase-ins	*Phase-ins*	*No Phase-ins*	*Phase-ins*	*No Phase-ins*	*Phase-ins*	*No Phase-ins*	*Phase-ins*	*No Phase-ins*	*Phase-ins*	*No Phase-ins*	*Phase-ins*	*No Phase-ins*	*Phase-ins*
Distij	-1.23	-1.19	-1.23	-1.18	-1.24	-1.21	-1.20	-1.16	-1.24	-1.17	-1.15	-1.07	-0.92	-0.96
	(-152.42)	(-112.53)	(-154.58)	(-114.3)	(-154.05)	(-114.46)	(-148.16)	(-121.41)	(-155.52)	(-112.73)	(-136.56)	(-101.1)	(-125.01)	(-105.56)
Contigij	0.41	0.22	0.33	0.15	0.40	0.21	0.41	0.22	0.41	0.22	0.39	0.13	0.33	0.18
	(12.49)	(5.54)	(9.95)	(3.66)	(12.10)	(5.05)	(12.25)	(6.10)	(12.25)	(5.55)	(11.84)	(3.39)	(12.41)	(5.80)
Langij	0.71	0.62	0.68	0.59	0.72	0.63	0.71	0.68	0.72	0.66	0.68	0.62	0.50	0.54
	(43.16)	(29.58)	(40.88)	(27.90)	(43.46)	(30.15)	(42.73)	(35.47)	(43.42)	(31.74)	(41.02)	(31.27)	(33.94)	(31.38)
N_RTAijt	0.22	-0.08	1.52	0.53	-0.04	0.04	0.78	0.14	0.00	0.16	0.48	0.19	0.38	0.17
	(4.90)	(-1.32)	(16.90)	(2.23)	(-0.76)	(0.46)	(23.97)	(2.25)	(-0.03)	(2.58)	(22.93)	(4.67)	(22.34)	(5.13)
N_RTAijt-5	-----	0.22	-----	0.66	-----	0.09	-----	0.02	-----	-0.33	-----	0.04	-----	0.06
	-----	(2.11)	-----	(2.08)	-----	(0.83)	-----	(0.19)	-----	(-3.61)	-----	(0.69)	-----	(1.31)
N_RTAijt-10	-----	0.03	-----	-0.38	-----	-0.32	-----	0.53	-----	-0.03	-----	-0.06	-----	-0.07
	-----	(0.22)	-----	(-1.3)	-----	(-2.88)	-----	(7.52)	-----	(-0.32)	-----	(-1.1)	-----	(-1.49)
N_RTAijt-15	-----	-0.16	-----	0.40	-----	-0.30	-----	-----	-----	0.04	-----	0.22	-----	0.20
	-----	(-1.09)	-----	(1.68)	-----	(-3.17)	-----	-----	-----	(0.45)	-----	(4.32)	-----	(4.76)
NN_RTAijt	0.62	0.18	0.80	0.31	0.40	-0.31	1.03	0.68	0.03	0.01	0.61	0.25	0.54	0.18
	(10.60)	(2.16)	(9.66)	(2.16)	(2.36)	(-1.36)	(13.24)	(5.81)	(0.58)	(0.08)	(18.09)	(4.48)	(18.30)	(3.71)
NN_RTAijt-5	-----	0.08	-----	0.41	-----	0.50	-----	0.28	-----	0.25	-----	0.35	-----	0.33
	-----	(0.75)	-----	(2.14)	-----	(2.12)	-----	(2.24)	-----	(2.03)	-----	(4.84)	-----	(5.41)
NN_RTAijt-10	-----	-0.15	-----	0.03	-----	0.67	-----	1.76	-----	0.17	-----	0.32	-----	0.25
	-----	(-0.91)	-----	(0.10)	-----	(2.76)	-----	(13.15)	-----	(1.47)	-----	(3.90)	-----	(3.54)
NN_RTAijt-15	-----	0.38	-----	0.49	-----	2.08	-----	-----	-----	0.83	-----	0.48	-----	0.44
	-----	(2.28)	-----	(1.47)	-----	(4.70)	-----	-----	-----	(5.53)	-----	(4.74)	-----	(5.31)
Cumulative N_RTA	**0.22**	**0.01**	**1.52**	**1.21**	**-0.04**	**-0.49**	**0.78**	**0.69**	**0.00**	**-0.16**	**0.48**	**0.39**	**0.38**	**0.36**
Cumulative NN_RTA	**0.62**	**0.49**	**0.80**	**1.24**	**0.40**	**2.94**	**1.03**	**2.72**	**0.03**	**1.26**	**0.61**	**1.40**	**0.54**	**1.20**
N	108,294	46,511	108,294	46,511	108,294	46,511	108,294	61,735	108,294	46,249	108,294	50,614	77,033	46,024
R2	0.49	0.75	0.49	0.76	0.49	0.75	0.49	0.54	0.49	0.55	0.49	0.56	0.63	0.64

Note: dependent variable is the natural logarithm of bilateral imports scaled by importer and exporter GDP. All regressions include country-by-time fixed effects (FE) omitted for brevity. Cumulative Notified and Non-Notified RTA effects are calculated by summing concurrent (*t*) and five, ten, and 15 year lagged coefficients (*t-5*, *t-10*, *t-15*). T-statistics are in parentheses. Standard errors are robust to clustering on country pairs.

Appendix I. RTA Database

RTA Name	Definition	Type	Notified	RTA Name	Definition	Type	Notified
ACC	Arab Coop. Council	PSA	No	CANAUS	Canada-Australia (CANATA) Agreement	PSA	No
ACS	Assoc. of Caribb. States	PSA	No	CANCHL	Canada-Chile Agreement	FTA	Yes
AEC	African Economic Community	PSA	No	CANCRI	Canada-Costa Rica Agreement	FTA	Yes
ALBMKD	Albania-Macedonia Trade Agreement	FTA	Yes	CANISR	Canada-Israel Agreement	FTA	Yes
AMU	Arab Maghreb Union	PSA	No	CARICOM	Caribbean Communities Agreement	CU	Yes
AND	Andean Community	CU	Yes	CARICOMCOL	CARICOM-Columbia Agreement	AFTA	No
ANDARG	Andean Argentina Agreement	AFTA	No	CARICOMDOM	CARICOM-Dominican Rep. Agreement	AFTA	No
ANDBRA	Andean Brazil Agreement	AFTA	No	CARICOMVEN	CARICOM-Venezuela Agreement	AFTA	No
ARGCHL	Argentina-Chile Agreement	PSA	No	CBI	Cross Border Initiative Agreement	FTA	No
ARGCRI	Argentina-Costa Rica Agreement	PSA	No	CEFTA	Central European Free Trade Agreement	FTA	Yes
ARGCUB	Argentina-Cuba Agreement	PSA	No	CEFTABGR	CEFTA-Bulgaria Agreement	AFTA	Yes
ARGECU	Argentina-Ecuador Agreement	PSA	No	CEFTAHRV	CEFTA-Croatia Agreement	AFTA	Yes
ARMRUS	Armenia-Russia Agreement	FTA	No	CEFTAROM	CEFTA-Romania Agreement	AFTA	Yes
ARMTKM	Armenia-Turkmenistan Agreement	FTA	Yes	CEMAC	Economic and Monetary Comm. Of Central Africa	CU	Yes
ASEAN	Assoc. of South East Asian Nations	FTA	Yes	CENSAD	Comm. Of Sahel-Saharan States	PSA	No
ASEANCHN	ASEAN-China Agreement	AFTA	Yes	CEPGL	Ec. Comm. Of Great Lakes Countries	PSA	No
BAFTA	Baltic Free Trade Agreement	FTA	Yes	CER	Closer Economic Relations Agreement	FTA	Yes
BANK/APTA	Bangkok/Asia Pacific Agreement (APTA)	PSA	Yes	CHLCOL	Chile-Columbia Agreement	PSA	No
BANKCHN	Bangkok-China Agreement	AFTA	Yes	CHLCRI	Chile-Costa Rica Agreement	FTA	Yes
BFACUB	Burkina Faso-Cuba Agreement	PSA	No	CHLECU	Chile-Ecuador Agreement	PSA	No
BFAIND	Burkina Faso-India Agreement	PSA	No	CHLKOR	Chile-Korea Agreement	FTA	Yes
BFAKOR	Burkina Faso-Korea Agreement	PSA	No	CHLMEX	Chile-Mexico Agreement	FTA	Yes
BFATUN	Burkina Faso-Tunisia Agreement	PSA	No	CHLPER	Chile-Peru Agreement	PSA	No
BGREST	Bulgaria-Estonia Agreement	FTA	Yes	CHLVEN	Chile-Venezuela Agreement	PSA	Yes
BGRHRV	Bulgaria-Croatia Agreement	FTA	No	CHNHKG	China-Hong Kong Agreement	FTA	Yes
BGRISR	Bulgaria-Israel Agreement	FTA	Yes	CHNMAC	China-Macau Agreement	FTA	Yes
BGRLTU	Bulgaria-Lithuania Agreement	FTA	Yes	CIS	Common Wealth of Indep. States Agreement	FTA	Yes
BGRLVA	Bulgaria-Latvia Agreement	FTA	Yes	COLCUB	Columbia-Cuba Agreement	PSA	No
BGRMKD	Bulgaria-Macedonia Agreement	FTA	Yes	COLPAN	Columbia-Panama Agreement	PSA	No
BGRTUR	Bulgaria-Turkey Agreement	FTA	Yes	COMESA	Common Market for East. & South Africa	FTA	Yes
BIHMKD	Bosnia-Herzegovina-Macedonia Agreement	FTA	No	CUBCHL	Cuba-Chile Agreement	PSA	No
BIHZWE	Bosnia-Herzegovina-Zimbabwe Agreement	FTA	No	CUBECU	Cuba-Ecuador Agreement	PSA	No
BLRUKR	Belarus-Ukraine Agreement	FTA	No	CUBURY	Cuba-Uruguay Agreement	PSA	No
BOLCHL	Bolivia-Chile Agreement	PSA	No	CUSTA	Canada-USA Free Trade Agreement	FTA	Yes
BOLCUB	Bolivia-Cuba Agreement	PSA	No	CZEEST	Czech Republic-Estonia Agreement	FTA	Yes
BOLMEX	Bolivia-Mexico Agreement	FTA	No	CZEISR	Czech Republic-Israel Agreement	FTA	Yes
BRACUB	Brazil-Cuba Agreement	PSA	No	CZELTU	Czech Republic-Lithuania Agreement	FTA	Yes
CACM	Central American Common Market	CU	Yes	CZELVA	Czech Republic-Latvia Agreement	FTA	Yes
CACMCHL	CACM-Chile Agreement	AFTA	No	CZEMKD	Czech Republic-Macednoia Agreement	FTA	No
CACMCOL	CACM-Columbia Agreement	AFTA	No	CZESVK	Czech Republic-Slovak Republic	FTA	Yes
CACMDOM	CACM-Dominican Rep. Agreement	AFTA	No	CZETUR	Czech Republic-Turkey Republic	FTA	Yes
CACMVEN	CACM-Venezuela Agreement	AFTA	No	EAC	East African Community Agreement	CU	Yes

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RTA Name	Definition	Type	Notified	RTA Name	Definition	Type	Notified
EAEC	Eurasian Economic Community Agreement	CU	Yes	EULBN	EU-Lebanon Agreement	AFTA	Yes
ECCAS	Economic Comm. Of Central African States	PSA	No	EUMAR	EU-Morocco Agreement	AFTA	Yes
ECCASAGO	ECCAS-Angola Agreement	AFTA	No	EUMEX	EU-Mexico Agreement	AFTA	Yes
ECO	Economic Cooperation Organization	PSA	Yes	EUMKD	EU-Macednoia Agreement	AFTA	Yes
ECOWAS	Economic Comm. Of West African States	PSA	Yes	EUNOR	EU-Norway Agreement	AFTA	Yes
EFTA	European Free Trade Agreement	FTA	Yes	EUPSE	EU-Palestine Agreement	AFTA	Yes
EFTABGR	EFTA-Bulgaria Agreement	AFTA	Yes	EUSYR	EU-Syria Agreement	AFTA	Yes
EFTACHL	EFTA-Chile Agreement	AFTA	Yes	EUTUN	EU-Tunisia Agreement	AFTA	Yes
EFTACZE	EFTA-Czech Rep. Agreement	AFTA	Yes	EUTUR	EU-Turkey Agreement	AFTA	Yes
EFTAEST	EFTA-Estonia Agreement	AFTA	Yes	EUZAF	EU-South Africa Agreement	AFTA	Yes
EFTAFIN	EFTA-Finland Agreement	AFTA	No	FJIPNG	Fiji-Papua New Guinea Agreement	FTA	No
EFTAHRV	EFTA-Croatia Agreement	AFTA	Yes	FROCHE	Faroe Islands-Switzerland Agreement	FTA	Yes
EFTAHUN	EFTA-Hungary Agreement	AFTA	Yes	FROISL	Faroe Islands-Iceland Agreement	FTA	Yes
EFTAISR	EFTA-Israel Agreement	AFTA	Yes	FRONOR	Faroe Islands-Norway Agreement	FTA	Yes
EFTAJOR	EFTA-Jordan Agreement	AFTA	Yes	G3	Group of Three	FTA	No
EFTALTU	EFTA-Lithuania Agreement	AFTA	Yes	GAFTA	Greater Arab Free Trade Area	FTA	No
EFTALVA	EFTA-Latvia Agreement	AFTA	Yes	GCC	Gulf Cooperation Council	CU	Yes
EFTAMAR	EFTA-Morocco Agreement	AFTA	Yes	GEOARM	Georgia-Armenia Agreement	FTA	Yes
EFTAMEX	EFTA-Mexico Agreement	AFTA	Yes	GEOAZE	Georgia-Azerbaijan Agreement	FTA	Yes
EFTAMKD	EFTA-Macedonia Agreement	AFTA	Yes	GEOKAZ	Georgia-Kazakhstan Agreement	FTA	Yes
EFTAPOL	EFTA-Poland Agreement	AFTA	Yes	GEORUS	Georgia-Russia Agreement	FTA	Yes
EFTAPSE	EFTA-Palestine Agreement	AFTA	Yes	GEOTKM	Georgia-Turkmenistan Agreement	FTA	Yes
EFTAROM	EFTA-Romania Agreement	AFTA	Yes	GEOUKR	Georgia-Ukraine Agreement	FTA	Yes
EFTASGP	EFTA-Singapore Agreement	AFTA	Yes	GINMAR	Guinea-Morocco	FTA	No
EFTASVK	EFTA-Slovak Rep. Agreement	AFTA	Yes	GSTP	Gen. Sys. Of Trade Pref. Among Developing Nations	PSA	Yes
EFTASVN	EFTA-Slovenia Agreement	AFTA	Yes	HRVBIH	Croatia-Bosnia Herzegovina Agreement	FTA	Yes
EFTATUN	EFTA-Tunisia Agreement	AFTA	Yes	HRVHUN	Croatia-Hungary Agreement	FTA	No
EFTATUR	EFTA-Turkey Agreement	AFTA	Yes	HRVMKD	Croatia-Macedonia Agreement	FTA	No
ESTFRO	Estonia-Faroe Islands Agreement	FTA	Yes	HUNEST	Hungary-Estonia	FTA	No
ESTTUR	Estonia-Turkey Agreement	FTA	Yes	HUNISR	Hungary-Israel	FTA	No
ESTUKR	Estonia-Ukraine Agreement	FTA	Yes	HUNLTU	Hungary-Lithuania	FTA	No
EU	European Union and its Expansions	CU	Yes	HUNLVA	Hungary-Latvia	FTA	No
EUAND	EU-Andorra Agreement	AFTA	No	HUNTUR	Hungary-Turkey	FTA	No
EUCHE	EU-Switzerland Agreement	AFTA	Yes	IGAD	Inter-Governmental Authority on Develop. Agreement	PSA	No
EUCHL	EU-Chile Agreement	AFTA	Yes	INDBGD	India-Bangladesh Agreement	PSA	No
EUDZA	EU-Algeria Agreement	AFTA	Yes	INDBTN	India-Bhutan Agreement	FTA	No
EUEGY	EU-Egypt Agreement	AFTA	Yes	INDLKA	India-Sri Lanka Agreement	FTA	No
EUFRO	EU-Faroe Islands Agreement	AFTA	Yes	INDNPL	India-Nepal Agreement	FTA	No
EUHRV	EU-Croatia Agreement	AFTA	Yes	INDSGP	India-Singapore Agreement	FTA	Yes
EUISL	EU-Iceland Agreement	AFTA	Yes	IRNCHE	Iran-Switzerland Agreement	FTA	No
EUISR	EU-Israel Agreement	AFTA	Yes	IRQEGY	Iraq-Egypt Agreement	FTA	No
EUJOR	EU-Jordan Agreement	AFTA	Yes	ISRJOR	Israel-Jordan Agreement	FTA	No

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RTA Name	Definition	Type	Notified	RTA Name	Definition	Type	Notified
ISRTUR	Israel-Turkey Agreement	FTA	Yes	MEXNIC	Mexico-Nicaragua Agreement	FTA	Yes
JORMAR	Jordan-Morocco Agreement	PSA	No	MEXURY	Mexico-Uruguay Agreement	FTA	No
JORSGP	Jordan-Singapore Agreement	FTA	Yes	MRU	Mano River Union	PSA	No
JORSYR	Jordan-Syria Agreement	FTA	No	MSG	Melanesian Spearhead Group	PSA	Yes
JPNMEX	Japan-Mexico Agreement	FTA	Yes	NAFTA	North American Free Trade Agreement	FTA	Yes
JPNSGP	Japan-Singapore Agreement	FTA	Yes	NAMZWE	Namibia-Zimbabwe Agreement	PSA	No
KGZARM	Kyrgyzstan-Armenia Agreement	FTA	Yes	NICCOL	Nicaragua-Columbia Agreement	PSA	No
KGZKAZ	Kyrgyzstan-Kazakhstan Agreement	FTA	Yes	NTR	Northern Triangle Agreement	FTA	No
KGZMDA	Kyrgyzstan-Moldova Agreement	FTA	Yes	NTRMEX	NTR-Mexico Agreement	FTA	No
KGZRUS	Kyrgyzstan-Russia Agreement	FTA	No	NZLSGP	New Zealand-Singapore Agreement	FTA	No
KGZUKR	Kyrgyzstan-Ukraine Agreement	FTA	Yes	PANARAB	The Pan Arab Free Trade Agreement	FTA	No
KGZUZB	Kyrgyzstan-Uzbekistan Agreement	FTA	Yes	PANCRI	Panama-Costa Rica Agreement	PSA	No
LAIA	Latin American Integration Agreement	PSA	Yes	PANDOM	Panama-Dominican Rep. Agreement	PSA	No
LAOTHA	Laos-Thailand Agreement	PSA	Yes	PANGTM	Panama-Guatemala Agreement	PSA	No
LBNARE	Lebanon-United Arab Emirates Agreement	FTA	No	PANHND	Panama-Honduras Agreement	PSA	No
LBNKWT	Lebanon-Kuwait Agreement	FTA	No	PANMEX	Panama-Mexico Agreement	PSA	No
LBNSYR	Lebanon-Syria Agreement	FTA	No	PANNIC	Panama-Nicaragua Agreement	PSA	No
LTUTUR	Lithuania-Turkey Agreement	FTA	No	PANSLV	Panama-El Salvador Agreement	FTA	Yes
LVATUR	Latvia-Turkey Agreement	FTA	Yes	PATCRA	Australia-Papua New Guinea Agreement	FTA	Yes
MAFTA	Aghadir Agreement (Med-Arab FTA)	FTA	No	PERCUB	Peru-Cuba Agreement	PSA	No
MARTUN	Morocco-Tunisia Agreement	FTA	No	POLFRO	Poland-Faroe Islands Agreement	FTA	Yes
MDAARM	Moldova-Armenia Agreement	FTA	Yes	POLISR	Poland-Israel Agreement	FTA	Yes
MDAAZE	Moldova-Azerbaijan Agreement	FTA	No	POLLTU	Poland-Lithuania Agreement	FTA	Yes
MDABLR	Moldova-Belarus Agreement	FTA	No	POLLVA	Poland-Latvia Agreement	FTA	Yes
MDAKAZ	Moldova-Kazakhstan Agreement	FTA	No	POLTUR	Poland-Turkey Agreement	FTA	Yes
MDARUS	Moldova-Russia Agreement	FTA	No	PSEEGY	Palestine-Egypt Agreement	FTA	No
MDATKM	Moldova-Turkmenistan Agreement	FTA	No	PSEJOR	Palestine-Jordan Agreement	PSA	No
MDAUKR	Moldova-Ukraine Agreement	FTA	No	PSETUR	Palestine-Turkey Agreement	FTA	Yes
MDAUZB	Moldova-Uzbekistan Agreement	FTA	No	PTAES	Preferential Trade Area for Eastern & Southern Africa	PSA	No
MERC	Mercado Común del Sur (Mercosur)	CU	Yes	PTN	Protocol of Trade Relations Among Developing Countries	PSA	Yes
MERCBOL	MERC-Bolivia Agreement	AFTA	No	ROMMDA	Romania-Moldova Agreement	FTA	Yes
MERCCHL	MERC-Chile Agreement	AFTA	No	ROMTUR	Romania-Turkey Agreement	FTA	Yes
MERCCOL	MERC-Columbia Agreement	AFTA	No	RUSAZE	Russia-Azerbaijan Agreement	PSA	No
MERCECU	MERC-Ecuador Agreement	AFTA	No	RUSBLR	Russia-Belarus Agreement	PSA	No
MERCIND	MERC-India Agreement	AFTA	No	RUSTJK	Russia-Tajikistan Agreement	PSA	No
MERCMEX	MERC-Mexico Agreement	AFTA	No	RUSTKM	Russia-Turkmenistan Agreement	PSA	No
MERCPER	MERC-Peru Agreement	AFTA	No	RUSUKR	Russia-Ukraine Agreement	PSA	No
MERCVEN	MERC-Venezuela Agreement	AFTA	No	RUSUZB	Russia-Uzbekistan Agreement	PSA	No
MEXBRA	MERC-Brazil Agreement	FTA	No	SACU	South African Customs Union	CU	No
MEXCRI	MERC-Costa Rica Agreement	FTA	No	SADC	South African Development Community	FTA	Yes
MEXCUB	MERC-Cuba Rica Agreement	PSA	No	SADCZAF	SADC-South Africa Agreement	AFTA	No
MEXISR	Mexico-Israel Agreement	FTA	Yes	SAPTA	South Asian Pref. Trade Agreement	PSA	Yes

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RTA Name	Definition	Type	Notified
SAUSYR	Saudi Arabia-Syria Agreement	FTA	No
SGPAUS	Singapore-Australia Agreement	FTA	Yes
SLVGTM	El Salvador-Guatemala Agreement	PSA	No
SPARTECA	South Pacific Trade & Ec. Coop. Agreement	PSA	Yes
SVKEST	Slovak Rep.-Estonia Agreement	FTA	Yes
SVKISR	Slovak Rep.-Israel Agreement	FTA	Yes
SVKLTU	Slovak Rep.-Lithuania Agreement	FTA	Yes
SVKLVA	Slovak Rep.-Latvia Agreement	FTA	Yes
SVKTUR	Slovak Rep.-Turkey Agreement	FTA	Yes
SVNBIH	Slovenia-Bosnia-Herzegovina Agreement	FTA	Yes
SVNEST	Slovenia-Estonia Agreement	FTA	Yes
SVNHRV	Slovenia-Croatia Agreement	FTA	Yes
SVNISR	Slovenia-Israel Agreement	FTA	Yes
SVNLTU	Slovenia-Lithuania Agreement	FTA	Yes
SVNLVA	Slovenia-Latvia Agreement	FTA	Yes
SVNMKD	Slovenia-Macedonia Agreement	FTA	Yes
THAAUS	Thailand-Australia Agreement	FTA	Yes
THANZL	Thailand-New Zealand Agreement	FTA	Yes
TRIPARTITE	Tripartite Agreement	PSA	Yes
TUNEGY	Tunisia-Egypt Agreement	FTA	No
TURBIH	Turkey-Bosnia-Herzegovinia Agreement	FTA	Yes
TURHRV	Turkey-Croatia Agreement	FTA	Yes
TURMKD	Turkey-Macedonia Agreement	FTA	Yes
TURSVN	Turkey-Slovenia Agreement	FTA	Yes
TURTUN	Turkey-Tunisia Agreement	FTA	Yes
TWNPAN	Taiwan-Panama Agreement	FTA	No
UKRAZE	Ukraine-Azerbaijan Agreement	FTA	No
UKRTKM	Ukraine-Turkmenistan Agreement	FTA	No
USAAUS	US-Australia Agreement	FTA	Yes
USACHL	US-Chile Agreement	FTA	Yes
USAISR	US-Israel Agreement	FTA	Yes
USAJOR	US-Jordan Agreement	FTA	Yes
USASGP	US-Singapore Agreement	FTA	Yes
VENCUB	Venezuela-Cuba Agreement	PSA	No
VENTTO	Venezuela-Trinidad & Tobago Agreement	PSA	No
WAEMU/UEMOA	West African Economic & Monetary Union	CU	Yes
ZAFMWI	South Africa-Malawi Agreement	PSA	No
ZAFZWE	South Africa-Zimbabwe Agreement	PSA	No

Appendix II: Regional Trade Agreement Database Sources

1. WorldTradeLaw.net homepage of Bilateral and Regional Trade Agreements Notified to the WTO, available at: http://www.worldtradelaw.net/fta/ftadatabase/ftas.asp

2. McGill Universityôs Preferential Trade Agreements Database, available at: http://ptas.mcgill.ca/Pages%20ptas/A-Z/A.htm

3. SICE ï the Organization of American Stateôs Foreign Trade Information System; available at: http://www.sice.oas.org/agreements_e.asp

4. The World Trade Organizationôs Regionalism Gateway website; available at: http://www.wto.org/english/tratop_e/region_e/region_e.htm

5. Baier, S.L., and J.H. Bergstrand. 2007. ñDo Free Trade Agreements Actually Increase Membersô International Trade?ò *Journal of International Economics* 71(1): 72-95.

6. Grant, J.H. and D.M. Lambert. 2008. ñDo Regional Trade Agreements Increase Membersô Agricultural Trade?ò *American Journal of Agricultural Economics, forthcoming*, August.

7. Medvedev, D. 2006. ñPreferential Trade Agreements and Their Role in World Trade,ò World Bank Policy Research Working Paper No. WPS4038. Washington DC, October.

8. Frankel, Jeffrey A., Ernesto Stein, She-Jin Wei. *Regional Trading Blocs*. Institute for International Economics (1997).