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The Paradox of "Preferences": Regional Trade Agreements and Trade Costs in Services

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Abstract

We analyze the relationship between regional trade integration and trade costs in services. The analysis relies on theory-consistent bilateral trade costs for 55 countries for 1999-2009, and an analysis of services commitments in 66 regional trade agreements to which these countries are parties. Despite the recent proliferation of services RTAs, we find that trade costs are only slightly lower due to these agreements. In addition, we find that the trade cost reductions that do take place tend to happen before the agreement is signed. This is consistent with countries using RTAs as a way of "locking in" reforms. Finally, we find that the preferential margin of services RTAs is thin: members and non-members both see slightly lower trade costs when an RTA is signed. However, the difference between the member and non-member trade cost effects is 28% for services, and 40% for goods, indicating a slimmer margin of preference in the former case. We discuss the possible explanations for these findings in terms of the nature of services RTAs and their relationship with regulatory reform. Based on these results, we argue that regionalism in the case of services seems relatively non-discriminatory and does not lead to substantial trade preferences.

JEL Codes: F13; F15.

Keywords: Trade policy; Trade in services; Regional trade agreements; services trade liberalization.

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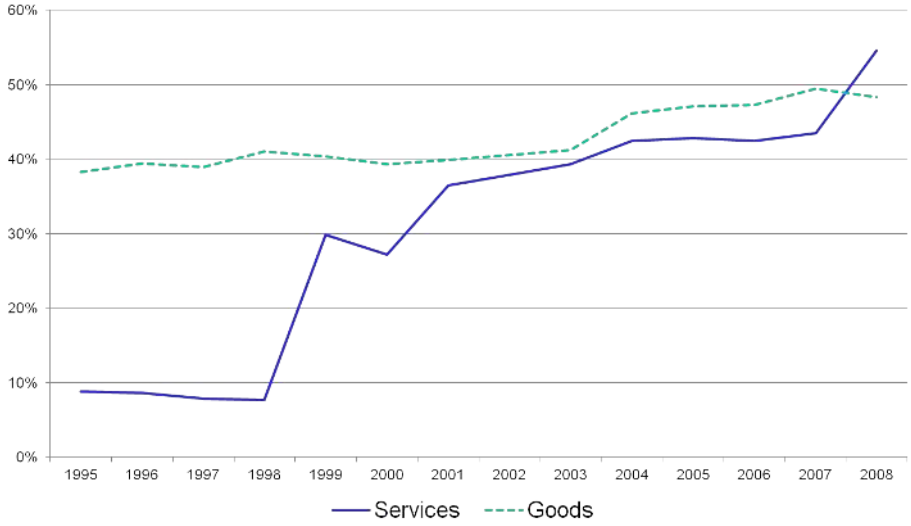
1 Introduction

There are several motives for negotiating regional trade agreements (RTAs),[1] not all of them based on economic considerations (WTO, 2011). However, it should be obvious that when signing an RTA, countries aim at reducing trade barriers among themselves. Preambles of trade agreements generally emphasize the promotion of trade and the removal of trade distortions as objectives that motivate the disciplines of the agreement. We should therefore expect RTAs to decrease trade costs among their parties, and empirical work in the case of goods tends to support this idea (see for example Pomfret and Sourdin, 2009; Chauffour and Maur, 2011; and WTO, 2011for a review). The purpose of this paper, broadly speaking, is to examine whether RTAs in services in fact do reduce trade costs, as one might expect. We also examine the quantitative extent of any trade cost reductions that do take place, their dynamic timing, and the impact of RTAs on trade costs facing non-member countries. This last point is potentially important in light of the long-standing debate on RTAs as building blocks or stumbling blocks with respect to multilateral liberalization.

RTAs covering services have only started to proliferate more recently, and to a lesser extent, than those covering goods. There were 88 agreements notified to WTO under the General Agreement on Trade in Services (GATS) at the end of August 2011, as compared to 213 notified under the General Agreement on Tariffs and Trade (GATT). While fewer RTAs deal with services, the share of world trade covered by these agreements is higher for services than for goods (Figure 1). As will be discussed below, one should not necessarily interpret the fact that two countries have an RTA in services as a sign of "preferential" trade. Figure 1 is just the share of world trade between countries that are parties to RTAs and not the share of "preferential" trade. In the case of goods, only 16 percent of world trade can be regarded as preferential, *i.e.* actually benefiting from a lower tariff in the context of the RTA (WTO, 2011). A similar result is to be expected for services as GATS-plus

[1] A note on terminology: we refer to "regional trade agreements" rather than "preferential trade agreements" (PTAs) or "free trade agreements" (FTAs), as the expression seems to us more neutral. Of course, it could be pointed out that most agreements are "bilateral" rather than "regional". But trade agreements in the case of services are not always "preferential" and never lead to "free trade". Switching to PTAs or FTAs does not improve the accuracy of the terminology.

Figure 1: Share of World Trade Among Countries that are Parties to an RTA (1995-2008)



commitments are legal bindings that do not guarantee preferential treatment.

Recently signed RTAs are generally characterized as "deep integration" agreements because they go beyond traditional market access concerns and deal with a broad range of trade-related issues. They also deal more with "behind-the-border" policies and address domestic regulations that have an impact on trade. Services are somehow a "borderline" area. Part of services commitments in RTAs is strictly speaking about "market access". But as barriers to trade in services are mainly "behind-the-border", services also illustrate the "deep integration" disciplines in recent RTAs.

Moreover, there is a consensus in the literature on the fact that services RTAs are WTO-plus. Several studies have compared market access and national treatment commitments in GATS and commitments in RTAs and unequivocally found that the latter cover a much higher number of subsectors than the former (Marchetti and Roy, 2008; Fink and Molinuevo, 2008; Miroudot et al., 2010)[2]. But commitments are legal bindings and do not always correspond to the actual trade regime, which might be more liberal (or less liberal if implementation is lax). The extent to which services RTAs have led to trade liberalization and actually reduced trade costs is therefore an empirical question.

[2]Some studies have also uncovered the phenomenon of GATS-minus commitments. See Adlung and Miroudot (2012).

Building on Miroudot et al. (2012) where we have developed theory-consistent estimates of bilateral trade costs for a large number of countries over the period 1999-2009, this paper analyzes the relationship between regional integration and the evolution of trade costs in services industries. In our analysis, we define trade costs as the additional costs faced by foreign suppliers as opposed to domestic producers. The next section explains how we measure trade costs in services and describes the database of services commitments in RTAs that we use in the analysis. Section 3 provides stylized facts on trade costs within and outside regional trade agreements, to see whether there is any preliminary evidence that RTAs do, in fact, reduce trade costs between members. Section 4 then takes the issue to the data by using a standard fixed effects model to look at the impacts of RTA membership and non-membership on trade costs as we have defined them. Section 5 discusses why services RTAs seem to have a limited impact on trade costs in services, and Section 6 concludes.

2 Empirical Data on Trade Costs and Services Trade Liberalization at the Regional Level

2.1 Bilateral Trade Costs in Services: A Database Covering 55 Countries over the Period 1999-2009[3]

Novy (2011) develops a comprehensive measure of bilateral trade costs based on the theoretical gravity model of Anderson and van Wincoop (2003).[4] An ad valorem equivalent expression of that measure is in equation 1 as τ_{ijkt}, where i and j index countries, k indexes sectors, and t indexes time. The measure τ_{ijkt} is the geometric average of trade costs facing exports from i to j and from j to i, relative to domestic trade costs in each country ($\frac{t_{ij}}{t_{ii}}$ and $\frac{t_{ji}}{t_{jj}}$ respectively). Calculation

[3]This section draws heavily on Miroudot et al. (2012).

[4]In fact, Novy (2011) shows that basically the same measure can be derived from a wide variety of theoretical models of international trade, including Chaney (2008) and Eaton and Kortum (2002). The interpretation of some parameters changes depending on the model used, but the overall approach remains very similar. Novy's approach builds on Head and Ries (2001).

requires data on domestic production relative to exports in both countries ($\frac{x_{ii}}{x_{ij}}$ and $\frac{x_{jj}}{x_{ji}}$ respectively). The parameter σ is the intra-sectoral elasticity of substitution, assuming the Anderson and Van Wincoop-based derivation of Novy's measure of trade costs.

$$\tau_{ijkt} = \left(\frac{t_{ijkt}.t_{jikt}}{t_{iikt}.t_{jjkt}}\right)^{\frac{1}{2}} - 1 = \left(\frac{x_{iikt}.x_{jjkt}}{x_{ijkt}.x_{jikt}}\right)^{\frac{1}{2(\sigma-1)}} - 1 \quad (1)$$

Intuitively, this measure of trade costs captures the fact that if a country's trade costs vis-à-vis its trading partners fall–and all other factors are kept constant–then a part of its production that was consumed domestically will instead be exported. Trade costs are thus closely related to the concept of relative openness, but the measure can be distinguished from openness measures because it is derived from an established theoretical framework. A measure such as τ_{ijkt} can be used to track the level of trade costs and their variation over time. Importantly, it is "top down" rather than "bottom up". By this we mean that it infers the inter- relative to intra-national trade costs based on observed patterns of production and trade, rather than building up an estimate of trade costs based on data covering particular types of impediments to trade. It thus takes account of all relevant factors–even unobservables–and is not subject to econometric issues such as omitted variables bias that plague gravity model estimates (e.g., Walsh, 2006).

Using this approach, we calculate new trade costs measures for 55 countries and 7 broadly defined industries (including 5 for services) over the period 1999-2009. Our choice of services sub-sectors is purely data driven: we include all sub-sectors for which trade and production data are available at a sufficient level of disaggregation across countries. We deal only with "pure" cross-border services trade, i.e. trade under Modes 1 and 2 of the General Agreement on Trade in Services (GATS). We do not cover sales by foreign affiliates (GATS Mode 3) or movement of service providers (GATS Mode 4) due to lack of data.[5] For production (gross sectoral output), our primary data sources are EU KLEMS, the OECD's STAN database, and the UN's National Accounts Official Country Data.

[5] In Section 4, we report results for sales of foreign affiliates based on a small sample of countries for which data are available. We also indicate how bilateral "Mode 3 trade costs" could be calculated with an approach similar to Novy (2011).

We also use Input-Output (IO) tables for major Asian economies (China, India, Indonesia, and Taiwan), which are not included elsewhere.[6] Data come from the OECD's harmonized IO tables, and are interpolated to deal with the five yearly updating schedule for the IO tables. Gross output data are converted into USD before being combined with trade data to derive τ_{ijkt}. We use bilateral nominal exchange rates from the OECD and the IMF's International Financial Statistics database (market rates, period average).

Our data on trade in goods come from the OECD's ITCS database which is reported directly in the ISIC Rev.3 format. Things are more complicated for services, where we combine three data sources: the OECD's TISP database (International Trade in Services by Partner Country), Eurostat's balance of payments statistics, and the UN's Service Trade database. All data are converted from the EBOPS classification to ISIC Rev. 3 using a concordance. In line with Novy (2011), we assume $\sigma = 8$, but our results are robust to alternative assumptions. In particular, our choice of σ influences calculations of the level of trade costs, but relative values across countries and through time are relatively insensitive to this choice.

2.2 Services Commitments in 66 RTAs

To assess the impact of RTAs on trade costs, we use a database developed at the OECD that covers all services agreements where an OECD economy, China or India is a party (Miroudot et al., 2010). This accounts for 66 of the 88 agreements notified to WTO under GATS Art. V (as of August 2011).[7] The database reports market access and national treatment commitments in the 155 subsectors of the GATS Services Sectoral Classification List. Horizontal restrictions – those that apply to all subsectors – are also taken into account and reported on all subsectors. The information is provided for each signatory of the RTA by mode of supply. For our main econometric analysis, we use dummy variables based on membership of the same RTA, and so do not include direct measures

[6] We have both gross output and exports at the industry level in the IO tables (the two variables needed to calculate domestic trade).

[7] The full list of RTAs included is given in Appendix 1.

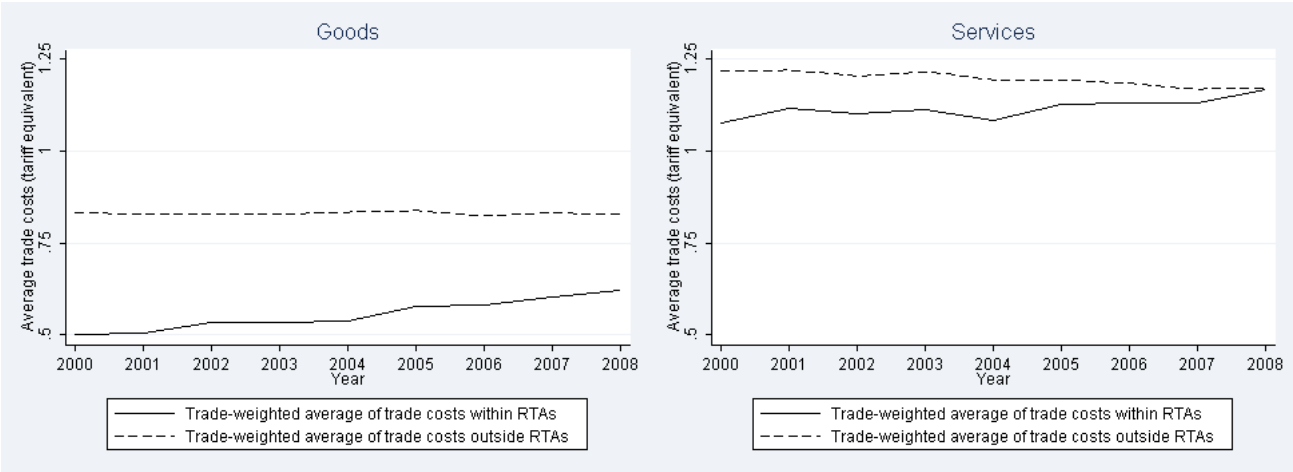
of the extent of liberalization undertaken. However, we do use such measures as a robustness check, and full details of our methodology for calculating the RTA index are provided in Appendix 2.

3 Trade Costs and RTAs: Stylized Facts

Our dataset provides bilateral trade costs at the industry level, as well as for total trade in goods and services respectively. (We use trade costs in goods as a point of comparison only. Our main research interest is in services.) To compare average trade costs within and outside RTAs, we use trade-weighted averages across countries. Trade costs for goods within RTAs are the average bilateral trade costs in manufacturing industries of countries that are party to an RTA covering goods. Trade costs for services are measured within RTAs that have provisions on services (a smaller subset of the RTAs covering goods). In addition, we keep only pairs of countries for which we have consistent data over time (between 2000 and 2008), to avoid entry and exit effects in the data.[8] Figure 2 highlights the important difference between goods trade and services trade when it comes to the role of RTAs. On the left, we see that in the case of goods, trade costs are significantly lower within RTAs. The difference tends to narrow over time but trade costs in 2008 are still 10 percentage points lower within RTAs. For services, trade costs are on average higher than for goods. Tariff equivalents, whether within or outside RTAs, are always between 100 and 125 percent. In addition, the difference between trade costs measured within RTAs and those between countries that are not part of a services trade agreement is smaller than for goods, and diminishing over time: at the beginning of the period we cover (2000), trade costs for services are on average 8 percentage points lower within RTAs, but they are indistinguishable from trade costs outside RTAs by the end of the sample period (2008). It is important to note, however, that this analysis is purely descriptive, and does not control for other potential influences on trade costs. We therefore use an econometric model below to examine the issue in more detail.

[8] Out of 1630 pairs in the starting dataset, we have 806 pairs for which we have data for all years between 2000 and 2008. Removing 824 pairs reduces total trade by less than 5%, indicating that pairs of countries for which data are not available for all years correspond to minor bilateral trade flows.

Figure 2: Trade costs within and outside RTAs: goods versus services

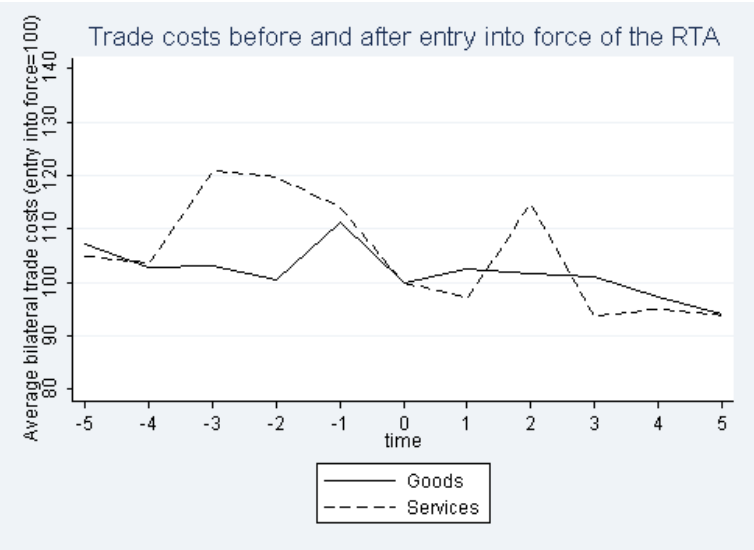


The increase in intra-RTA trade costs over the period (both for goods and services) is at least partly a composition effect. The group of countries with an RTA at the end of the period is made up of RTAs with a relatively higher level of trade costs. One could explain this by the fact that countries initially signed RTAs with their main trading partners that are closer not only geographically, but also culturally or institutionally. It is therefore not surprising to see a decrease in the difference between trade costs within and outside RTAs. But the results for services suggest that services agreements are of a different nature as compared to goods agreements.

To further assess to what extent Figure 2 reflects the composition of the group of countries having signed an RTA or the evolution of trade costs within these RTAs, Figure 3 presents average bilateral trade costs before and after entry into force of the RTA. We set to t = 0 the year of entry into force of each agreement and we report the average trade costs (over all the RTAs) up to five years before and after this date. As trade costs are to some extent cyclical and vary over time, pulling different years together introduces some volatility but the results suggest that both in the case of goods and services, RTAs contribute to a decrease in trade costs. Of course, these descriptive data do not say anything about causality but they reinforce the view that Figure 2 captures partly a composition effect. Again, the analysis presented here does not control for any intervening influences, so we return to this question in the context of the econometric analysis in Section 4.

On a descriptive level, it is also useful to break out our results in a different way. We observe in our

Figure 3: Trade costs before and after the entry into force of the RTA



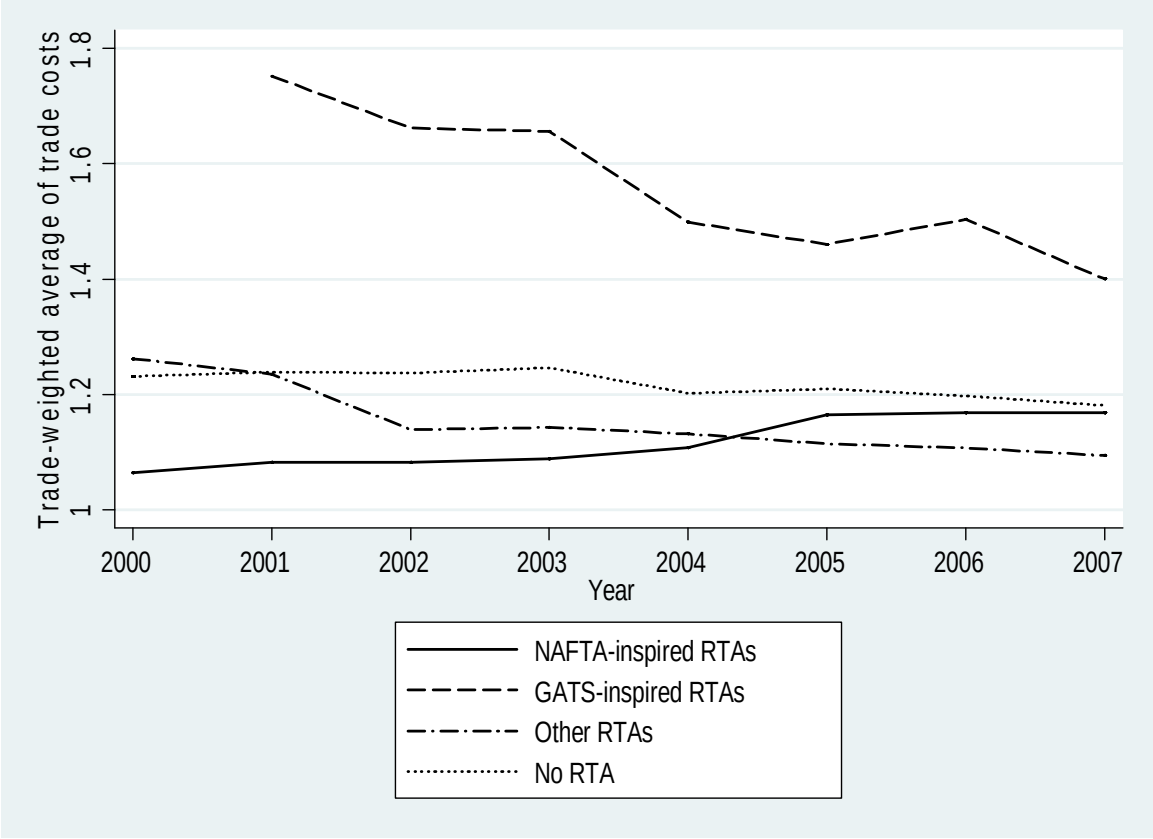
dataset differences in trade costs according to the partner country. Figure 4 highlights differences based on the architecture of RTAs and the way of scheduling commitments. Trade costs tend to be lower between countries having signed a NAFTA-inspired RTA[9] where there is a negative list of commitments and where services and investment (including investment in services) are dealt with in two separate chapters. GATS-inspired RTAs that follow the GATS approach for scheduling commitments (a positive list of sub-sectors where market access and national treatment commitments are made by mode of supply, followed by a list of limitations) have on average higher trade costs, even higher than for pairs of countries with no RTA.

However, Figure 4 should not be interpreted as a causal relationship between the way of scheduling commitments and the level of trade costs. The results are essentially based on the composition of each group of countries whose trade costs are being measured. Trade costs are the lowest (at the end of the 2000-2007 period) in the group of "other RTAs" that includes economic integration agreements such as the EC Treaty, the European Economic Area (EEA) agreement, the agreement of the European Free Trade Association (EFTA), and the Australia New Zealand Closer Economic Partnership Trade Agreement (ANZCEPTA). By definition, countries party to these agreements are

[9]See Houde et al. (2007) for a more detailed discussion of NAFTA-inspired versus GATS-inspired regional trade agreements.

geographically and culturally closer, hence their lower bilateral trade costs. NAFTA-inspired agreements were originally signed between close countries (initially Canada, Mexico and the United States) and over the period trade costs are found to be higher when the NAFTA template is used by other countries. GATS-inspired agreements include many North-South and South-South RTAs signed between countries geographically and/or culturally more distant and where services trade is less developed.

Figure 4: Trade costs by type of scheduling (2000-2007)



4 Econometric Analysis

Although the descriptive analysis above is already a good indication of the role of services RTAs in reducing trade costs, an econometric analysis can tell us more by controlling for a certain number of variables that could explain the trends observed beyond the entry into force of RTAs. To more

precisely identify the links between RTAs and trade costs, we adopt a differences-in-differences approach in which we rely on fixed effects to control for other factors that are typically thought to influence trade costs. By including fixed effects in the country-pair and time dimensions, we control for factors that are common to a country pair but do not change over time, such as geographical distance and cultural and historical factors, as well as variables that affect all countries in the same way each year, such as changes in the world price of oil that influence transport costs. We include a dummy variable equal to unity for those country-pair-year combinations in which an RTA is in force, and zero otherwise.[10] Identification is therefore based on observed entry into RTAs over time, which is an aspect we exploit in further detail below by considering lags and leads of the RTA dummy.

Concretely, we initially estimate the following empirical model by OLS:

$$\log \tau_{ijt} = \beta_1 RTA\_dummy_{ijt} + \alpha_{ij} + \gamma_t + \varepsilon_{ijt} \quad (2)$$

where τ_{ijt} is bilateral trade costs calculated as in Equation 1.[11] We estimate the model separately for total trade in goods and total trade in services, to show the different impacts of RTA commitments in the two cases. We emphasize that this regression does not take account of possible third-country effects of RTAs. It is an initial approach only, and we present a model with both variables below.

Results are in Table 1.[12] Columns 1 and 2 compare the impacts of RTAs in services and goods,

[10] We use RTAs in services for the case of services trade costs, and RTAs in goods in the comparator case of goods trade costs.

[11] Hornok (2011) has recently used a similar method to estimate the impact of EU membership on trade. She highlights the identification difficulties associated with traditional approaches using the standard, rather than inverse, gravity model.

[12] We have also estimated the model using the RTA index described above, and results are consistent with those presented here for the dummy variable: the coefficient on the degree of RTA liberalization is positively signed and 1% statistically significant. As an additional robustness check, we have also estimated the model with a full set of interactions between RTA_dummy and the various year dummies, in line with some of the differences-in-differences literature. Our main finding emerges even more strongly from such an exercise: the coefficient on RTA_dummy for total services trade is more than twice as large in absolute value as in the baseline specification (-0.159), and it remains statistically significant at the 1% level. Results for both exercises are available on request.

using total (i.e., summing trade and production over all sub-sectors) trade costs in both cases. The RTA dummy has a negative sign, as expected, and its coefficient is statistically significant at the 1% level in both regressions. Interestingly, the magnitude of the two coefficients is quite different: RTAs in services appear to reduce trade costs by relatively more than RTAs in goods, as the coefficient in column one is more than three times as large in absolute value as the coefficient in column 2. This finding represents a significant point of distinction with the descriptive analysis above, and highlights the importance of controlling for other variables in the analysis. The difference between the two coefficients (goods and services) is statistically significant at the 5% level. In terms of quantifying these effects, exponentiating our regression results suggest that signing an RTA in services tends to decrease trade costs by about 6.5%, compared with only about 2.2% in goods. Although we can only speculate as to the reasons for the difference between these two coefficients, one possible explanation is that the percentage of policy-related trade costs is higher in services than in goods, which means that there is more work that RTAs can potentially do–regardless of whether they do it on a more or less preferential basis than in goods. As an additional observation, both of these effects are surprisingly small given the important role played by RTAs in the world trading environment, and we discuss further in the next section the possible reasons for finding such a small RTA effect. One important possibility, which we explore in more detail below, is that the trade cost impacts of RTAs, especially in services, flow on to non-members as well as members, a possibility that our baseline model does not allow for.

To provide greater detail on the impacts of RTAs on trade costs, we also present regression results for four services sub-sectors separately (Table 1 columns 3-6).[13] The RTA dummy has the expected negative coefficient in all but one case, and it is 1% statistically significant in three of the four regressions. It is immediately clear, however, that services RTAs have very different implications for trade costs depending on the sector under consideration. In the cases of 'other services activities', for example, the impact on trade costs is statistically insignificant. One reason for this result could be that we only consider Mode 1 trade in these data, and those activities that include mainly services

[13] We exclude mining and utilities because that sector includes aspects of both goods and services trade.

to persons, such as social, health or education services, tend to rely to a heavier extent on Mode 3 as a means of market entry. By contrast, trade costs are very significantly reduced in the wholesale and retail trade sector, which also includes hotel and restaurant activities: trade costs after signing an RTA are on average 20.6% lower than in country-pair-year combinations without an RTA. This effect is much stronger than the average effect in column 1, which takes all sectors together. Results in the remaining sectors are also stronger than the average, but weaker than in wholesale and retail trade (12.8% to 14.7%). These results suggest that either at the level of commitments undertaken or their subsequent implementation on the ground, there are substantial differences in the way in which different sectors are treated in services RTAs.

As noted above, the baseline model analyzes the effect of RTAs on trade costs by focusing on the immediate impact, i.e. the difference in trade costs between country pairs with an RTA in force versus those with no RTA in force. In fact, we can push our data further by limiting consideration only to those country-pairs that have joined an RTA during our sample period. By doing so, we can identify the dynamic impact of entering an RTA, which provides a richer set of information than its average effect over time. To do that, we replace the RTA dummy variable with a set of dummy variables taking the value of unity in, respectively, the year of entry into force of an RTA, and up to five years before and after that date. Goods and services are again considered separately, using total trade in both cases. Shingal (2009) is an example of another article in which the trade effects of RTAs in services are assessed using lags of the RTA indicator variable.

Results in Table 2 suggest that dynamics play an important role in RTA implementation in both goods and services, but particularly in the latter case. Column 1 shows that trade costs in services are reduced to a statistically significant degree up to five years prior to an agreement's entry into force: the coefficients on all lags are negatively signed and at least 5% statistically significant, with the exception of the fifth lag, which is marginally significant at the 10% level. This finding is again not clear from the descriptive analysis, in which–before controlling for other influences–reductions in trade costs tend to lag rather than lead entry into force. Our econometric results also nuance the discussion of Figure 2 and Figure 3: although there is surely a compositional effect at work, it is not

Table 1: Trade costs and RTAs: baseline regression results.

	(1) Services	(2) Goods	(3) Construction	(4) Wholesale & Retail Trade	(5) Transp. & Comms.	(6) Other
RTA_dummy	-0.067***	-0.022***	-0.159***	-0.231***	-0.137***	-0.046
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.199)
Observations	19450	31140	10898	18056	17380	14660
No. of Groups	2452	2964	1736	2342	2266	2250
Overall R2	0.029	0.030	0.025	0.072	0.028	0.035

Note: OLS estimation with robust standard errors clustered by country-pair. All models contain fixed effects by country-pair and by year. Prob. values are indicated in parentheses beneath the parameter estimates. Statistical significance is indicated by: *** 1%, ** 5%, and * 10%.

the sole explanation for what is observed in the data. One mechanism that could explain this result is that preferential liberalization in services is associated with regulatory reforms that can only be undertaken over time, and so there is an important extent to which countries prepare for signing an agreement by already putting in place some of the reforms required for conformity with its terms. Another possibility is that countries use RTAs to lock in reforms that have already been decided and, to some extent, implemented beforehand. RTAs are thus a mechanism for expressing and securing the gains from domestic regulatory reform programs. Although the same dynamic is true for goods markets as well (column 2), the estimated coefficients are not always statistically significant, and they are much smaller in absolute value than for services. An F-test of the hypothesis that all the RTA dummy coefficients are jointly equal to zero is rejected at the 1% level for both services and goods, which suggests that the dynamics of policy adjustment indeed play an important role in both types of RTA.

Columns 3 and 4 present similar results using leads instead of lags; these results therefore track post-signature implementation of RTAs. In both cases, we find an unexpected result: trade costs appear to increase to a statistically significant degree following the signing of an RTA. Up to three (in the case of services) or four leads (in the case of goods) are statistically significant and positively signed. Again, an F-test of the hypothesis that all the RTA dummy coefficients are jointly equal to zero is rejected at the 1% level in both cases. Taking all of these results together suggests the surprising finding that most RTA-associated liberalization takes place in the period prior to entry into force of the agreement, not afterwards. Given that most agreements allow for implementation periods before commitments take full force, this is an unexpected result. In terms of the political economy of liberalization, particularly in services, it strongly suggests that the primary motivation for an RTA is not actually to reduce trade costs going forward, but to commit to trade cost reductions that have already been made. As we discuss more fully in Section 5.2 below, one dynamic that could also be in place is that countries are tending not to use RTAs to affect actual liberalization of their trade regimes, but instead to commit to legal bindings that are much less liberal than current policy settings. Such a pattern would allow for a de facto reform period prior to signature, and the

Table 2: Regression results using lags and leads of the RTA dummy.

	(1) Services	(2) Goods	(3) Services	(4) Goods
RTA t=0	-0.058***	-0.002	-0.012	0.011**
	(0.000)	(0.704)	(0.293)	(0.019)
RTA t-1	-0.054***	-0.013**		
	(0.001)	(0.013)		
RTA t-2	-0.037**	-0.003		
	(0.035)	(0.436)		
RTA t-3	-0.057***	-0.020***		
	(0.002)	(0.000)		
RTA t-4	-0.045**	-0.015***		
	(0.049)	(0.005)		
RTA t-5	-0.036	-0.024***		
	(0.100)	(0.000)		
RTA t+1			0.021	0.034***
			(0.195)	(0.000)
RTA t+2			0.050***	0.014**
			(0.004)	(0.021)
RTA t+3			0.051**	0.019***
			(0.017)	(0.001)
RTA t+4			0.098***	0.002
			(0.000)	(0.745)
RTA t+5			0.048	0.002
			(0.106)	(0.848)
Observations	16700	26150	16700	26150
No. of Groups	2130	2510	2130	2510
Overall R2	0.014	0.013	0.010	0.007

Note: OLS estimation with robust standard errors clustered by country-pair. All models contain fixed effects by country-pair and by year. Prob. values are indicated in parentheses beneath the parameter estimates. Statistical significance is indicated by: *** 1%, ** 5%, and * 10%.

possibility of some slippage–still within the terms of the RTA–after signature.

As a final exercise, we expand the baseline model to include an additional variable, RTA_out_dummy, which is equal to unity whenever one country in a pair is a member of at least one RTA, but the other is not. Including this variable in the model makes it possible to examine the effects of RTAs on trade costs both within the agreement (RTA_dummy) and vis-a-vis outsiders to the agreement (RTA_out_dummy). Given that the two variables are correlated ($\rho = -0.84$) and RTA_out_dummy is also presumably correlated with trade costs, we prefer these results to the ones presented above

with a single variable only, because the latter may suffer from omitted variable bias. We present results from the augmented model in Table 3 using first total services and goods trade, and then services trade broken down by sub-sector. Again "total" means summing trade and production data across all sub-sectors.

Column 1 confirms results from the baseline model, with a negative and statistically significant coefficient on the RTA dummy which is, however, much larger in absolute value than the comparable figure in Table 1.[14] The coefficient on RTA_out_dummy is also negative and 1% statistically significant, which is consistent with a smaller, but still negative, impact on trade costs for non-members of an RTA. A test of the hypothesis that the two coefficients are equal rejects the null at the 1%, which confirms our interpretation of the difference in coefficients. The same pattern is repeated in column 2, where the same pattern of signs and significance is apparent in the case of goods, although both effects are much weaker. Again, we can not identify the reasons for the different coefficient magnitudes in goods and services for the RTA dummy, but one possible explanation is the greater relative prevalence of policy-related trade costs in services, as discussed above. To see that the coefficient magnitudes make a difference on a policy level, however, it is useful to convert them to percentage trade cost reductions by taking the exponent and subtracting unity. This approach shows that RTAs reduce trade costs by 23% for members and 18% for non-members in services, compared with 7% for members and 5% for non-members for goods. The difference between the member and non-member trade cost effects is thus 28% for services, and 40% for goods. Our results therefore suggest that although goods RTAs tend to reduce trade costs by less in percentage terms than do services RTAs, they tend to do so in a more preferential way (i.e., members benefit more relative to non-members).

Together, the regressions in columns 1 and 2 suggest that RTAs tend to act more as building blocks than as stumbling blocks with respect to the multilateral system, in the sense that they lower trade

[14] The reason for the difference in coefficients is that RTA_out_dummy is an omitted variable in the first regressions. It is negatively correlated with both the dependent variable and the RTA dummy. As a result, the omitted variable bias on the RTA dummy is positive, which explains why the coefficients in the first regressions are smaller in absolute value (less negative) than in the second set of regressions.

costs for members as well as non-members. The building block effect is particularly pronounced in the case of services, which is consistent with the observation that "preferential" liberalization is difficult in that sector, since regulatory reform often occurs on a de facto MFN basis. It is also consistent with the descriptive evidence presented above, which highlighted a relatively narrow "margin of preference" in the case of services trade. Our finding for goods markets is at odds with existing evidence on tariffs for the US and EU (Limao, 2006), but it can perhaps be explained by the use of a broader range of countries (as in Freund, 2010) and the inclusion of non-tariff as well as tariff-related trade costs. Our finding on the building block effect of services RTAs is the first time such evidence has been discussed in the quantitative literature, although Sauvï¿œ and Shingal (2011) examine similar issues by considering schedules of commitments under the GATS and RTAs.

A comparison of column 2 of our Table 3 suggests that our RTA coefficient is somewhat smaller than the only other example of such an estimate that we are aware of, namely Arvis et al. (2013). The reason is likely that our sample is much smaller–55 countries versus 178–due to our primary focus on services trade. Moreover, the nature of the data used here necessarily means that the sample contains mostly higher income countries, which already have quite liberal trade policies in goods. A smaller coefficient estimate is consistent with this sample composition issue, because the relative impact of an RTA in an environment that is already liberal by world and historical standards is likely to be proportionately lower.

Columns 3-6 of Table 3 present more details on these results by using disaggregated services trade costs as the dependent variable. Once non-member effects are taken into account, we find that RTAs significantly reduce trade costs in all sectors, and that this benefit accrues to both members and non-members. Indeed, the trade cost reducing effects of RTAs are stronger once third-country effects are accounted for, as evidenced by the generally larger (in absolute value) coefficients in Table 3 compared with Table 1. There is thus broad-based evidence of a building block effect across all sectors. Comparing the magnitude of the two coefficients in each column suggests that although some margin of preference for non-members exists, and is significant in some sectors, the overall

impact on trade costs facing both members and non-members is negative. As a preliminary view, therefore, we can expect that RTAs in services are likely to display dominance of trade creation over trade diversion effects, although this would of course need to be confirmed by detailed modeling in the case of individual agreements.

5 Why is the Impact of Services Agreements on Reducing Trade Costs so Modest?

The previous section, along with the descriptive analysis earlier in the paper, has shown that services RTAs have a negative impact on trade costs between members. However, that impact is relatively small, and it is not very preferential, in the sense that non-members also benefit from trade cost reductions of a similar, albeit smaller, magnitude. In this section, we discuss possible factors that might affect the robustness of our results, as well as possible explanations for our findings.

5.1 Can We Trust the Data?

Anybody working in the area of services trade knows that cross-border trade statistics at a disaggregated level (by partner country and/or by industry) are problematic. To begin with, the coverage of balance of payments trade data is not comprehensive. Although total trade in services is generally available for most economies, trade by partner country or by industry is missing for a significant number of reporters. In addition, for countries that do provide the disaggregated data, there is still a large share of unallocated trade (Miroudot and Lanz, 2008). For example, in our dataset based on the OECD TISP database, adding all the bilateral by industry data gives us a figure that represents on average 69% of the total trade reported by countries. Almost one third of trade in services is not allocated to specific partners or industries.

In addition to unallocated trade, one can also question what the balance of payments precisely measures. With the development of the Internet and new technologies, many services transactions

Table 3: Regression results using the RTA out dummy.

	(1) Services	(2) Goods	(3) Construction	(4) Wholesale & Retail Trade	(5) Transp. & Comms.	(6) Other
RTA_dummy	-0.264***	-0.069***	-0.321***	-0.464***	-0.449***	-0.397***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
RTA_out_dummy	-0.197***	-0.047***	-0.155***	-0.237***	-0.319***	-0.346***
	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)
Observations	19450	31140	10898	18056	17380	14660
No. of Groups	2452	2964	1736	2342	2266	2250
Overall R2	0.060	0.032	0.033	0.088	0.063	0.082

Note: OLS estimation with robust standard errors clustered by country-pair. All models contain fixed effects by country-pair and by year. Prob. values are indicated in parentheses beneath the parameter estimates. Statistical significance is indicated by: *** 1%, ** 5%, and * 10%.

are difficult to account for. Measuring trade in services is more challenging than before, and one should not underestimate the impact of these issues on the results of our study and any measure of trade costs based on actual trade data. But the quality of the data cannot by itself explain the trend observed over time, as there is no sign of a systematic bias that would minimize international trade in services over years only for countries within an RTA (and not for pairs of countries not belonging to any RTA). Issues related to statistics affect all economies within or outside RTAs. The only case where we should seriously investigate the role of statistical issues is the EU. Because of the European integration process, there is less information available on intra-EU trade, as opposed to extra-EU trade.

More important, it seems to us, is the question of whether covering only cross-border trade in services has an impact on our assessment of regionalism. Cross-border trade in services includes Mode 1 and to some extent Mode 2 and Mode 4 trade in services. But with some rare exceptions,[15] Mode 3 trade in services is not part of the cross-border trade statistics. To the extent that RTAs encourage Mode 3 over cross-border trade (in particular when they include an investment chapter that also liberalizes FDI), a substitution between cross-border trade and sales through commercial presence could explain why we do not see a larger impact of RTAs on cross-border trade costs.

Unfortunately, data on sales of foreign affiliates (Foreign Affiliates Trade Statistics) are even less available than cross-border trade in services data. We can, however, apply a methodology similar to the one we apply to cross-border trade to measure the bilateral "investment costs" or more exactly the cost of selling through a foreign affiliate, the foreign affiliate sales (FAS) cost. Building on Head and Ries (2008), Gormsen (2011) has developed a measure of the cost of barriers to FDI. We can apply a similar methodology to sales of foreign affiliates, as the formula is in the end a derivation of the gravity equation and the gravity equation applies to FAS as well (see Bergstrand

[15]For example, in the case of construction services, balance of payments data cover to some extent short-term contracts where there is commercial presence in the sense of GATS but no establishment (the foreign company operates in the territory of the partner country on the basis of a local office and remains a non-resident entity whose revenues are regarded as an international transaction recorded in the balance of payments). Construction services data sometimes include the cost of construction materials which are goods, another issue for accurately measuring the services trade involved.

and Egger, 2007 and Kleinert and Toubal, 2010).

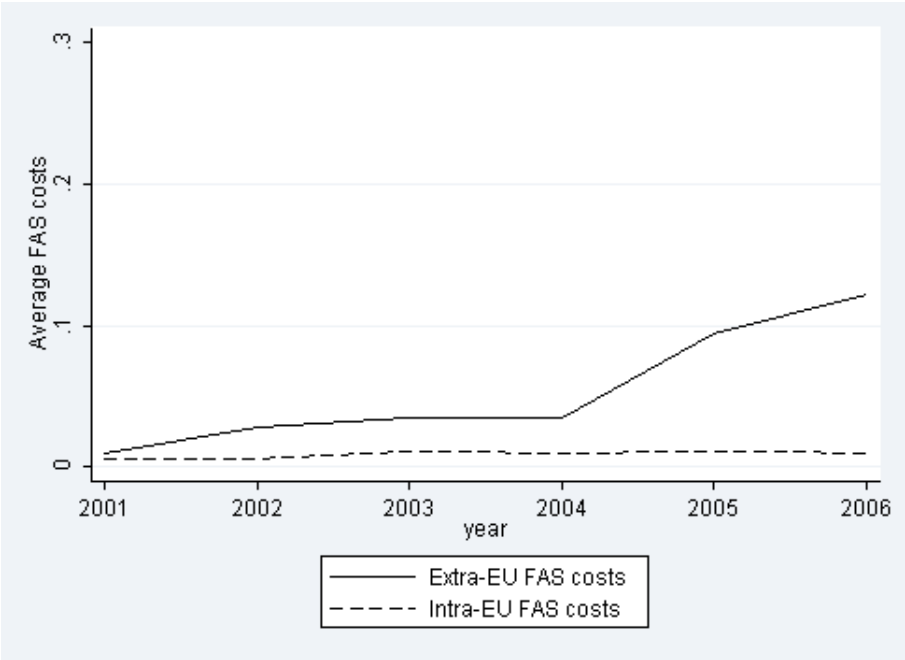
We calculate the bilateral FAS cost as[16]: $\tau_{ij} = \sqrt{\frac{Sales_{ij}.Sales_{ji}}{Sales_{ii}Sales_{jj}}}$

where sales from *i* in *j* and *j* in *i* are bilateral FAS, while the sales of *i* in *i* (and *j* in *j*) are the domestic sales (calculated as national turnover minus the sales of foreign affiliates). Due to constraints on the availability of such data, we calculate these bilateral FAS costs for 54 countries over the period 2001-2006 using the OECD FAS database and Eurostat FATS statistics. Figure 5 below presents the average FAS cost intra- and extra-EU. Since there are very few non EU countries in the dataset, one should not over-interpret the results, and generally speaking FAS statistics are quite fragmentary. But the point is that for EU countries for which we have relatively better FAS data, there is no indication that FAS costs have diminished within the EU in the first half of the 2000s. However, FAS costs are found to be lower within the EU and the discrepancy between intra- and extra-EU FAS costs increases over time. This increase probably reflects the availability of more data over time as because of the gaps in the data there are more and more non-EU pairs after 2004.

We can thus nuance the picture painted previously regarding the impact of RTAs. In the case of the EU, there seems to be an impact on the cost of providing services through Mode 3. But we have insufficient data to check whether this is specific to the EU and the deep integration achieved through the Single Market or whether a similar trend would be observed in all RTAs that cover Mode 3 or have a substantive investment chapter. In any case, future research can explore the possibility that one reason why RTAs do not reduce cross-border trade costs more strongly is the relationship between Modes 1 and 3.

[16] We do not discuss extensively the methodology as it is not the purpose of this paper to measure FAS costs. Deriving the equation from a theory-consistent FAS gravity model, there should be a parameter similar to σ in the Anderson and van Wincoop (2003) model or γ in the Chaney (2008) model. We take here a very simple approach to compare FAS costs over time in the context of EU integration. In any case, the evolution of this measure through time and differences across countries are not strongly impacted by parameter choices.

Figure 5: Foreign affiliate sales costs intra- and extra-EU (2001-2006)



5.2 Services Reforms: Do They Benefit Domestic and Foreign Producers in a Similar Way?

In our analysis, we define trade costs as the additional costs faced by foreign suppliers as opposed to domestic producers. Equation 1 relates "domestic trade costs" to international trade costs. Because the measure is relative, a reform that would have the same (or a proportional) impact on domestic and foreign suppliers would not affect trade costs estimates. Another way of interpreting Figure 2 would then be that any services trade liberalization (resulting or not from the signature of a RTA) lowers trade costs for all suppliers so that the ratio between foreign and domestic costs is not altered.

This would be the case first if RTAs had no impact on the actual trade regime. Schedules of commitments in services are legal bindings. Countries take market access and national treatment commitments, but often these commitments just reflect the current state of regulations. Already at the multilateral level, the literature points out that countries have locked-in their current regime and have not used GATS to liberalize trade (Hoekman, 1996; Adlung and Roy, 2005). It is even less

likely that they would use RTAs to open up new services sectors. Reforming the telecoms sector or changing regulations for maritime transport will generally not be the outcome of a bilateral trade agreement. The political economy of services trade negotiations, involving a trade ministry which is generally not in a position to commit to reform key product markets, could explain why RTAs are about legal bindings and not actual trade reforms (VanGrasstek, 2010). Such bindings could nonetheless have a positive impact on trade by reducing the uncertainty around the trade regime and by bounding the level of restrictiveness the partner country could introduce in the future.

Then, another assumption is that when they do change the trade regime, RTAs have no impact on measures that discriminate against foreign suppliers. The concept of preferences is not easy to tackle in the context of services trade (Sauvï¿œ and Mattoo, 2011; Sauvï¿œ and Shingal, 2011). Some measures are not really prone to discrimination between domestic and foreign suppliers. For example, market regulations introducing rules on prices, access to networks or increasing the powers of a competition authority will equally benefit domestic and foreign services suppliers. It is not possible to create a market more competitive for domestic suppliers only or foreign suppliers would have to be totally excluded from this market. Then, there are measures such as licenses or taxes where it would be technically feasible to introduce discrimination between domestic and foreign producers, but where in practice this is not the case. In the end, discriminatory measures are limited to foreign equity restrictions, labor market tests for the entry of natural persons, and the recognition of qualifications. But even in these areas, not all countries introduce discriminatory measures.

The trend in services reforms is also to increase competition, including by allowing foreign producers to enter the domestic market and compete. Countries that have reformed their telecoms or energy sectors, for example, have generally encouraged the entry of foreign firms to increase productivity and lower prices for consumers. In the presence of an incumbent firm previously benefiting from a domestic monopoly, foreign competition is important for the market to become competitive. Services reforms are generally not of a discriminatory nature and this gives less opportunities for negotiators of RTAs to offer genuine preferences to partner countries.

5.3 Is Services Trade Liberalization de facto MFN?

For the same reasons stated above, there is no clear evidence that discrimination among foreign producers is the objective or outcome of services RTAs. Unlike tariffs in the case of goods, there is no easy way to grant preferences for services providers of specific countries. Market access barriers or barriers to competition generally apply the same way to all foreign suppliers. In the case of the recognition of qualifications or visa policies, some advantage may be given to a privileged partner country. For example, a mutual recognition agreement can be signed or a quota can be granted to temporary services providers of a given nationality. But in practice, there are very few instances where countries do discriminate.

Once again, one should keep in mind that services are generally regulated in domestic laws that are designed for domestic purposes by the ministries in charge of specific services sectors. Such laws are not used for commercial diplomacy and do not include legal instruments giving opportunities to trade negotiators to grant actual preferences to specific countries. This is why services RTAs are most of the time about "preferential bindings" rather than actual preferences.

Another reason is that rules of origin for services are quite liberal in the case of legal persons (Fink and Nikomborirak, 2007; Miroudot et al., 2010). GATS Article V:6 requires that foreign services suppliers established in a country and engaged in "substantive business operations" benefit from the treatment granted in RTAs signed by that country. For example, EU companies established in the US can benefit from NAFTA provisions and have the same treatment as US companies exporting services to Mexico or Canada. The "substantive business operations" criterion is generally not subject to specific tests or requirements.[17] This could explain why countries are not willing to introduce discriminatory barriers to cross-border trade in services. Such barriers could be circumvented by the establishment of companies in countries that would have the most preferential treatment.

[17] An exception is found in the agreements signed by China with Hong Kong and Macao (see Emch, 2006)

6 Conclusion

This paper has addressed the question of whether services RTAs have an impact on bilateral trade costs. In the case of services, we find that RTAs do indeed reduce trade costs, but that the impact is quite modest: perhaps 6.5% on average. In addition, we find strong evidence that the "preferential margin" of services RTAs is surprisingly thin, since these agreements tend to reduce trade costs for both members and non-members alike. Although these results might appear to be surprising at first glance, they are in fact to be expected when one looks more closely at how services trade liberalization takes place and what the role of services chapters in RTAs is. Services agreements are about preferential bindings and generally do not introduce actual discrimination that would favor services suppliers from the parties to the agreement. They also have relatively liberal rules of origin that allow third parties to easily gain access to preferential regimes through commercial establishment in a preferred partner. As such, services RTAs are to some extent paradoxical. They signal a preference for specific partner countries but they do not provide them with substantial preferential treatment, unlike what can be observed with goods. From an economic perspective, this is all the better as preferences lead to trade distortions.

The use of trade cost data to analyze the impact of services RTAs is a novelty in the literature. However, an interesting comparison with our paper could be provided by the use of a more traditional gravity framework, or similar models to those that have been used in goods trade to assess the building blocks versus stumbling blocks argument. Although that approach is outside the scope of our paper, it is a useful avenue for future research, and could help improve the robustness of the findings reported here.

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Appendix 1 - List of Services RTAs Covered in the Dataset

Table 4: List of services RTAs covered in the dataset

ASEAN-Australia-New Zealand FTA	EFTA-Singapore FTA	Japan-Thailand EPA
ASEAN-China FTA	El Salvador-Mexico FTA	Japan-Vietnam EPA
ASEAN-Korea FTA	EU-Albania SAA	Korea-Chile FTA
Australia-Chile FTA	EU-CARIFORUM States EPA	Korea-Singapore FTA
Australia-New Zealand CER	EU-Chile AA	Mainland-Hong Kong CEPA
CAFTA-DR	EU-Croatia SAA	Mainland-Macao CEPA
Canada-Chile FTA	EU-FYROM SAA	Mexico-Nicaragua FTA
Canada-Peru FTA	EU-Korea FTA	NAFTA
Chile-Colombia FTA	EU-Mexico EPA	New Zealand-Hong Kong, China CEP
Chile-Costa Rica FTA	EU-Montenegro SAA	New Zealand-Singapore CEP
Chile-El Salvador FTA	Guatemala-Mexico FTA	Panama-Chile FTA
Chile-Mexico FTA	Honduras-Mexico FTA	Singapore-Australia FTA
China-Chile FTA	India-Korea CEPA	Thailand-Australia FTA
China-New Zealand FTA	India-Singapore CECA	Trans-Pacific SEP
China-Pakistan FTA	Japan-Brunei Darussalam EPA	US-Australia FTA
China-Peru FTA	Japan-Chile EPA	US-Bahrain FTA
China-Singapore FTA	Japan-Indonesia EPA	US-Chile FTA
Costa Rica-Mexico FTA	Japan-Malaysia EPA	US-Jordan FTA
EEA	Japan-Mexico EPA	US-Morocco FTA
EFTA-Chile FTA	Japan-Philippines EPA	US-Oman FTA
EFTA-Korea FTA	Japan-Singapore EPA	US-Peru FTA
EFTA-Mexico FTA	Japan-Switzerland EPA	US-Singapore FTA

Appendix 2 - Services RTA Index

To assess the impact of RTAs on trade costs, we use a database developed at the OECD that covers all services agreements where an OECD economy, China or India is a party (Miroudot et al., 2010). This accounts for 66 of the 88 agreements notified to WTO under GATS Art. V (as of August 2011).[18] The database reports market access and national treatment commitments in the 155 subsectors of the GATS Services Sectoral Classification List. Horizontal restrictions – those that apply to all subsectors – are also taken into account and reported on all subsectors. The information is provided for each signatory of the RTA by mode of supply.

[18]The full list of RTAs included is given in Appendix 1.

Commitments are either "full" (no limitation), "partial" (some limitations listed), or "unbound" (no commitment). In addition, "partial" commitments are broken down into nine different types of trade restrictive measures, four for market access and five for national treatment. This classification of non-conforming measures is detailed in Table 5. The database includes similar analysis for commitments in GATS and can be used to assess to what extent RTAs are WTO-plus and provide for additional commitments.

As this database is of a qualitative nature, we compute indices that capture the extent to which services RTAs are preferential as compared to the GATS. The methodology is the following. An initial score of 100 is assigned to each agreement, country, subsector and mode of supply regardless of its degree of commitment (including the GATS). Then, depending on whether the subsector is "full", "unbound" or subject to some restrictions ("partial"), some points are deducted from this amount. The precise number of points granted to each restriction relies on a few assumptions:

- Market access matters relatively more than national treatment;
- Unbound is worse than partial, which is in turn worse than full; and
- Quantitative restrictions such as quotas or licensing requirements are more trade-restrictive than discriminations on subsidies or prohibitions on partnerships, for instance.

There is some inherent subjectivity in ranking and weighting the importance of trade restrictive measures and it is beyond the scope of this paper to discuss how it can be done. Table 6 summarizes our own subjective assessment and details the scores for each mode of supply (the points that are lost out of a total of 100 when the sub-sector is unbound or partial). One can note that no commitment at all (unbound) does not give a score of zero for a given sub-sector and mode of supply but 20 (out of 100). "Unbound" means that there is no commitment in the RTA to provide market access and national treatment but this should not be understood as trade being banned. It could be the case that no restrictive measure is actually in place in the country.

Since we work with data on cross-border trade in services, we assign Mode 1 a much larger weight

(70%) than is the case for the other modes (10% for each). Yet, we choose not to give a zero-weight to Modes 3 and 4 to account for the potential complementarities that may exist between modes of supply. Mode 2 is also part of cross-border trade but is economically less important and rather difficult to restrict. We are now left with a score ranging between 0 and 100 for each agreement/country/subsector. The next step is then to compute for each RTA the difference between the agreement's score and the GATS score. This difference therefore takes on values from -100 to 100. Because an agreement that is worse than GATS (i.e. a GATS minus agreement) is de facto ineffective, we replace all negative values by zeros, which means no preferential treatment at all. Hence, the higher the value of the index, the more preferential the RTA for a given country/subsector.

Last, we convert W/120 subsectors into ISIC Rev.3 sectors using the UN's Provisional Central Product Classification as an intermediate correspondence. Since W/120 subsectors and ISIC Rev. 3 sectors do not match one-to-one, we average the RTA index when needed using equal weights. Eventually, we get an index of the preferential content of RTAs for each party to an agreement that is compatible with our trade costs data at the sectoral level.

Table 5: Typology of limitations in partial market access and national treatment commitments

Category	Name	Mode of Supply	Examples
Market Access			
MA1	Scope of subsector limited (as compared to W/120 classification)	All	Commitment limited to a list of activities.
			Commitment in sub-sector x but not including y.
MA2	Restrictions on foreign ownership or on the type of legal entity	Mode 3	Foreign equity limits.
			Only joint ventures are allowed.
			Restrictions on M&A for foreign firms.
MA3	Quantitative restrictions on the service	Modes 1, 2 & 3	Limitations on the number of service suppliers (e.g., quota or economic needs test).
			Limtiations on the total value of transactions or assets.
			Limitations on the quantity of service output.
MA4	Market access restrictions to the movement of people	Mode 4	Limitations on the number of natural persons.
			Nationality requirements for the suppliers of services.
National Treatment			
NT1	Nationality and residence requirements for boards	Modes 1 & 3	Nationality and residence requirements for boards of directors and managers.
	of directors and managers, discriminatory licensing requirements		Discriminatory licensing requirements.
NT2	National treatment restrictions to the movement of people	Mode 4	Discriminatory qualification or licensing requirements.
NT3	Discriminatory measures with regards to subsidies or taxes	Modes 1, 2 & 3	Eligibility for subsidies reserved for nationals.
			A tax is imposed on non-residents.
NT4	Restrictions on ownership of property/land	Modes 1, 2 & 3	Foreigners may not acquire direct ownership of land.
			Non-residents are excluded from the acquisition of real estate.
NT5	Other discriminatory measures	Modes 1, 2 & 3	Discriminatory measures with respect to competition.
			Prohibition on the hire of local professionals.
			Local content requirements.
			Technology transfer/training requirements.

Table 6: Scores used to calculate the RTA indexes

Mode	Market access						National treatment						
	Unbound	MA1	MA2	MA3	MA4	Full	Unbound	NT1	NT2	NT3	NT4	NT5	Full
Mode 1	50	15	0	20	0	0	30	15	0	2.5	2.5	2.5	0
Mode 2	50	20	0	0	0	0	30	0	0	5	5	5	0
Mode 3	50	15	20	5	0	0	30	15	0	2.5	2.5	2.5	0
Mode 4	50	15	0	0	20	0	30	0	15	0	0	0	0