

# Does Regionalism Help or Hinder Multilateralism?

## An Empirical Evaluation

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**Summary:** We empirically examine the effects of regionalism on external trade liberalization using industry-level data on applied MFN tariffs and bilateral preferences for ten Latin American countries from 1989-2001. This unique data set allows us to examine whether products where preferences loom large are more or less likely to be liberalized at the multilateral level. Our results imply that regionalism *helps* the multilateral process. The greater the tariff preference that a country gives to its partners in a given product, the more the country tends to *reduce* its multilateral (MFN) tariff in that product. Overall, our results suggest that concerns about a negative effect of regionalism on multilateralism in developing countries are overblown.

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## **I. Introduction**

In 1991, Larry Summers proclaimed that countries should pursue the living “ism.” Both then and now, that would clearly be regionalism. According to the World Trade Organization (WTO), there are over 200 regional trade agreements currently in force. Most of these agreements have been concluded in the past 10 years, and many new agreements are currently under negotiation. Policymakers are voting with their feet, choosing regionalism as the preferred mode of liberalization.

Many prominent trade economists, however, are concerned about this rise of regionalism, viewing preferential trading arrangements as inimical to the world trade system. Their primary concern is that regionalism will negatively affect countries’ support for multilateralism. The large theoretical literature that has developed provides some support for these fears, but it also shows that regional agreements can be building blocs to free trade. Empirically evaluating the consequences of regionalism for liberalization at the multilateral level is the natural way to advance. A careful quantitative assessment of these issues can make an important contribution to the understanding of the compatibility between regionalism and multilateralism.

This issue is especially important in developing countries: eighty percent of the agreements notified to the GATT/WTO involve at least one developing country. Latin America, in particular, provides an excellent arena for this study because several regional agreements have been implemented recently, including NAFTA and MERCOSUR. It is estimated that 88 percent of trade in Latin America is now potentially eligible for preferential treatment (World Bank 2005). In addition, applied tariffs are regularly set well below bound tariffs in Latin America, implying that those countries can either raise

or lower applied tariffs subsequent to the formation of a regional agreement without being constrained by WTO negotiations. Indeed, the total number of tariff hikes in our sample is roughly equal to the number of cuts in the period we study.

We use data on preferential and MFN applied tariffs in ten Latin American countries and 100 ISIC 4-digit industries over the period 1990-2001. The data are unique because they include the preferential tariffs across partners, industries, and years. We examine whether sectors where preferences are important have been liberalized or protected to the same extent as the other sectors. We measure trade preferences as the difference between the MFN tariff and the preferential tariff a given partner faces, and aggregate preferences across partners using import weights. We then examine how changes in preferences affect changes in external tariffs, and also whether the level of preference is an important determinant of protection levels at the multilateral level.

Our results imply that regionalism is a building bloc to free trade in Latin America. There is no evidence that trade preferences lead to higher tariffs or smaller tariff cuts in any country in our sample. There is significant evidence that preferences are correlated with a faster decline in tariffs. If the main concern about regionalism is its effect on multilateralism, then Larry Summers may be right—countries (at least in Latin America) should pursue the living “ism”.

There are several reasons why regionalism may enhance external trade liberalization in developing countries. First, since the multilateral system has not brought about any significant tariff reduction in developing countries, regional agreements may serve as an enforcement mechanism for a broader reform package. Second, regionalism may set the stage for competitive liberalization. If external tariffs are relatively high, then

costly trade diversion, resulting from a South-South agreement, will provide countries with an additional incentive to liberalize. Third, it may be that some products are simply easier to liberalize than others, and these products tend to be liberalized both regionally and multilaterally.

This final case is different from the previous ones. It implies that regionalism and multilateralism are correlated though causation does not follow. In contrast, the first two arguments put regional agreements as a force behind external tariff liberalization. To the extent that we can distinguish among these possibilities, our results are suggestive of causation. We find that both lagged preferences and the lagged change in preferences are negatively correlated with the change in multilateral tariffs. Thus, an increase in the tariff preference provided to trade bloc members tends to be followed by an external tariff reduction, and there is more rapid liberalization in products where preferences loom large. These results are robust to using annual data, a panel of three-year averages, splitting the sample, and controlling for lagged tariff levels, industry-, year- and country-fixed effects.

The paper proceeds as follows. The next section discusses the related literature, Section 3 discusses the empirical strategy, Section 4 discusses the data, Section 5 offers the empirical results, and Section 6 concludes.

## **II. Related Literature**

The effects of regionalism on the prospects for multilateral liberalization have been addressed from two distinct theoretical perspectives. Based on the presumption that world welfare is likely to be maximized under global free trade, one approach aims at analyzing

how preferential trade agreements affect the viability/sustainability of a multilateral free trade agreement. There is, however, no consensus at this level. On the one hand, Levy (1997), Krishna (1998) and McLaren (2002) argue that preferential trade agreements (PTAs) can render infeasible an otherwise feasible multilateral free trade agreement.<sup>1</sup> On the other hand, Baldwin (1995), Cadot et al. (2001), Freund (2000a, 2001) and Ornelas (2005a) suggest that regionalism can pave the road to global free trade. Riezman (1999) finds that PTAs may either decrease or increase the likelihood of a coalition leading to multilateral free trade, while Bagwell and Staiger (1999b) show that the effects of PTAs on the sustainability of a multilateral free trade agreement are equally ambiguous. This strand of the literature has been helpful in highlighting long run possible consequences of regionalism. Unfortunately, however, their predictions are hardly testable, so we can do little to discern among its various contradictory views.

The second approach looks instead at how regionalism affects the *current* attitude of countries toward multilateralism. The issue in question here is more specific, and concerns mainly the effects of preferential liberalization on countries' incentives to alter their multilateral (MFN) trade barriers. It is well known by trade economists that, if the formation of a preferential trading bloc is accompanied by sufficiently deep reductions in the tariffs against third countries, the arrangement is more likely to enhance aggregate world welfare without harming excluded countries. In contrast, if the trading bloc raises its trade barriers against the excluded countries—or even if it fails to reduce them deeply enough—trade with the rest of the world is likely to be inefficiently diverted towards the

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<sup>1</sup> Bagwell and Staiger (1999a) maintain, in addition, that preferential trade agreements are incompatible with the efficiency of GATT/WTO negotiating rules.

preferential bloc, in which case the arrangement could reduce world welfare.<sup>2</sup> To assess the welfare consequences of the recent regionalism trend, we must therefore understand first how it alters countries' incentives to adjust their tariff policies.

Here, too, results are very conflicting, despite considerable theoretical research and despite the type of agreement being considered, free trade areas or customs unions. On the one hand, Richardson (1993), Bagwell and Staiger (1999b), Freund (2000b), Bond et al. (2004) and Ornelas (2005b) argue that countries tend to reduce their external trade barriers after entering in a free trade area. On the other hand, Richardson (1995) and Panagariya and Findlay (1996) suggest the opposite should occur. Similarly, whereas Syropoulos (1999), Freund (2000b), and Bond et al. (2001) indicate that countries may want to raise external tariffs after forming a customs union, Richardson (1995) and Panagariya and Findlay (1996) argue that tariffs tend to fall with the union. Ornelas (2004) points out that the type of PTA does not matter if countries cooperate at the multilateral level, and that any PTA in such an environment would tend to induce members to lower external tariffs. Cadot et al. (1999) find instead that both types of preferential agreements can lead to either lower or higher external tariffs, depending on general equilibrium effects that travel through the labor market. They note, however, that external tariffs tend to be lower under FTAs than under CUs.

Because of data limitations, this extensive and controversial debate has been conducted with limited empirical support. To date, empirical analyses of preferential

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<sup>2</sup> As Kemp and Wan (1976) show, in any customs union there is a set of external tariffs that leaves welfare of non-members unaffected. If external tariffs fall below that level, then the non-member countries benefit from the arrangement. Panagariya and Krishna (2002) extend this result to incorporate free trade areas. The central distinction between the two types of PTAs is that free trade areas allow member countries to maintain autonomous external trade policy, while customs union members must share the same external tariff structure.

liberalization have focused mainly on case studies. Typically, these studies pay relatively little attention to changes in external tariffs, although there are some accounts of how regional integration has affected countries' behavior at the multilateral level.<sup>3</sup>

Nevertheless, while case studies help us understand individual experiences, they are by nature unable to provide a general assessment of the consequences of regionalism on countries' multilateral attitude.

A handful of recent studies attempt more data oriented analyses of this effect. In an influential paper, Limao (2005) finds that U.S. preferences worked as stumbling blocs of U.S. multilateral trade liberalization in the Uruguay Round. In particular, he finds that U.S. liberalization, as a percent of the pre-UR prevailing tariff, was relatively smaller in products where preferences were utilized. He argues that the U.S. was hesitant to liberalize those PTA products because it uses preferences to extract concessions from the recipients in other areas, such as cooperation on drugs or labor standards. With lower external tariffs, those preferences would be eroded.

Karacaovali and Limao (2005, henceforth KL) offer a similar study of the European Union, though the methodology is somewhat different. In particular, KL considers PTA goods to be those where preferential duties are zero, i.e. only products with full preferences. They then examine whether tariff cuts are similar for PTA and non-PTA goods. Again, they find that liberalization of PTA goods was shallower than on non-PTA goods.

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<sup>3</sup> On balance, the case studies seem to suggest that preferential liberalization tends to be accompanied by liberalization towards non-members. For instance, Magee and Lee (2001) show that the ECC reduced their external tariffs after its formation, while Krueger (2000) observes that most of the external tariffs in NAFTA have fallen in parallel with internal liberalization.

The findings in these papers underscore the potential danger of preferences for the world trade system. One concern, however, is that the results are based on a single round of multilateral liberalization, and hence reflect the bargaining position of particular country groups in that round—a round where developing countries were not well represented. In addition, preferences are especially important in agriculture, but all of the trade rounds (even pre-preference) have tended to exclude these products. Thus, it is possible that preferences have been granted (and are utilized) precisely in the products that have high and persistent tariffs for other reasons. Finally, there is no way to fully incorporate the large liberalization in the UR via non-tariff barriers. Aside from agriculture, preferences are utilized largely in apparel, and while apparel tariffs did not come down, one of the prime achievements of the UR was eliminating apparel quotas, which have had a central effect on the market access of non-PTA countries. But since the implementation has been largely backloaded, it was not feasible to examine the impact on prices during the period in question.

A couple of other studies examine the relationship between regionalism and multilateralism in developing countries. Foroutan (1998) provides a general account of how countries forming regional trade blocs have adjusted their external tariffs. She examines trade and trade policy in over fifty developing countries. She finds that integrating countries have been more active in reducing multilateral trade barriers than non-integrating countries. Though her results suggest that regionalism is benign, a concern is that she does not control for other factors that may have induced countries to behave as they did, making it impossible to disentangle the effect of trade agreements from other global or regional trends. Moreover, constraints on data availability at the time

of her study prevented her from using detailed industry-level data and also from fully capturing the effects of the large number of agreements completed in the 1990s.

Using a detailed cross-industry dataset on Argentina from 1991 to 1996, Bohara, Gawande and Sanguinetti (2004) examine the effect of Mercosur on tariffs in Argentina. They find that increased imports from Brazil induced by the trade agreement led to lower external tariffs in Argentina. The effect is especially strong in industries that contracted in Argentina. Their results support Richardson's (1993) claim that trade blocs should lead to a decline in external tariffs. The intuition is that as import-competing industries shrink in response to enhanced regional trade, import-competing lobbies decline and tariffs fall.

While these studies are important, results from Limao (2005) and KL (2005) are opposite of Foroutan (1998) and Bohara et. al (2004), making it difficult to draw broad conclusions. One important distinction between the two sets of studies is the country sample. The former focuses on the two majors, while the latter focuses on developing countries. It may be that the incentives generated by preferences are very different in these contexts. One important distinction is that developing country tariffs are usually much higher than U.S. or EU tariffs, implying that the cost of trade diversion and the resulting incentive to liberalize are far greater in those countries. Another important distinction is the target of the preference. As Limao (2005) highlights, preferences by industrial countries may be used to extract concessions in other non-trade areas. Thus, eliminating preferences would make it more difficult to meet these obligations. In contrast, preferences in developing countries tend to be reciprocal and part of deeper integration agreements. This could generate very different dynamics.

In sum, the context in which research in this area currently stands is one of severe theoretical divergences and limited empirical support, especially in developing countries. This paper provides new and systematic empirical evidence that we believe improves our understanding of the compatibility between regionalism and multilateralism and can guide future theoretical research in the topic.

### **III. Methodology**

The conventional approach in theoretical models of regional trade integration is to assume that countries within a PTA fully (and immediately) eliminate trade barriers among themselves. This is broadly consistent with Article XXIV of the GATT, which requires members of PTAs to "eliminate [duties and other regulations of commerce] on substantially all the trade between the constituent territories." Article XXIV is, however, perhaps the least enforced article of the GATT, and in reality the complete elimination of internal tariffs is the rare exception, rather than the rule, in most operative PTAs. Moreover, PTAs among developing countries are often initiated under the Enabling Clause, which does not include such requirements.<sup>4</sup> Accordingly, if one wants to estimate the consequences of a preferential arrangement—be it on external tariffs, as we do here, but also on other economic variables—one should account for the differences in internal liberalization, both across products/industries and across member countries.

Another central difficulty in capturing the effects of preferential trade liberalization on MFN tariffs is that several countries are engaged in multiple PTAs. Accordingly, tariff preferences are often granted to several countries, with the margin of

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<sup>4</sup> For example, Mercosur and the Andean agreement were initiated under the Enabling Clause, whereas NAFTA was initiated under Article XXIV.

preferences typically varying both across recipients and across time. Thus, we need to aggregate preferences across partners.

Several theoretical models [e.g., Richardson (1993), Bagwell and Staiger (1999b), Freund (2000b), Ornelas (2005a, 2005b)] suggest that the effect of a PTA on a member's external tariffs should increase with the share of the member's imports that comes from within the preferential bloc. The intuition is clear. Suppose that a certain country A has the choice to enter in a PTA with two different countries, one very small and one very large. Since the PTA with the large country will have a more prominent effect on country A's trade flows than the PTA with the small country, it is intuitive that the same should happen to country A's trade policy choices. Failing to incorporate all preferences and to account for the size of the distinct recipients would distort the estimated effect of PTAs on countries' choices of multilateral tariffs, but to our knowledge there has been no previous attempt to do so.<sup>5</sup>

To aggregate tariff preferences, we use the import shares of each PTA partner as weights for the margin of preference (i.e., the difference between the applied MFN tariff and the preferential tariff) received. Thus, our measure of aggregate preferential treatment conceded by country  $j$  in industry  $i$  in year  $t$  is defined as

$$(1) \quad PREF_{ijt} \equiv \sum_k [MFN_{ijt} - \tau_{ijt}^k] \frac{M_{ijt}^k}{M_{ijt}}$$

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<sup>5</sup> Bohara et al. (2004) consider only the external tariffs of Argentina and looks only at Argentina's preferences to Brazil under Mercosur. Limao (2004) considers multiple preferences conceded by the United States, but he employs a binary measure of preferences, which defines whether a product is exported to the US under some preferential scheme; he considers neither differences in the volume of exports nor differences in the size of the preferences (check revised version).

where  $MFN_{ijt}$  represents country  $j$ 's MFN (external) tariff in industry  $i$ , year  $t$ ;  $\tau_{ijt}^k$  denotes the preferential tariff in industry  $i$  offered by country  $j$  to partner  $k$  in year  $t$ ; and  $M_{ijt}^k / M_{ijt}$  represents the share of country  $k$  in country  $j$ 's total imports in industry  $i$ , year  $t$ .

We model MFN tariffs as

$$(2) \quad MFN_{ijt} = \alpha_{ij} + \alpha_{jt} + \alpha_{it} + \beta(PREF_{ijt-1}).$$

The  $\alpha$ s in (2) denote fixed effects for industry-country, country-year, and industry-year. The industry-country effect picks up fixed industry-country characteristics, such as lobbying strength, comparative advantage forces, strategic interests etc. The country-year fixed effect will pick up trends in the country's general liberalization policy. The industry-year effect will pick up factors such as multilateral agreements negotiated on particular industries.

Taking first differences, (2) yields:

$$(3) \quad \Delta MFN_{ijt} = (\alpha_{jt} - \alpha_{jt-1}) + (\alpha_{it} - \alpha_{it-1}) + \beta(\Delta PREF_{ijt-1}) + u_{ijt}.$$

Assume that a country's general liberalization progresses at a constant rate. Similarly, assume that liberalization across industries also occurs at a roughly constant pace, but with time shocks across industries owing to multilateral trade agreements. This implies that we can write

$$\begin{aligned} (\alpha_{jt} - \alpha_{jt-1}) &= \gamma_j, \\ (\alpha_{it} - \alpha_{it-1}) &= \gamma_i + \gamma_t. \end{aligned}$$

Equation (3) then simplifies to our base estimating equation, which is:

$$(4) \quad \Delta MFN_{ijt} = \gamma_i + \gamma_j + \gamma_t + \beta(\Delta PREF_{ijt-1}) + u_{ijt},$$

Where the  $\gamma$ s denote fixed effects for each industry, country and year. If the coefficient  $\beta$  were estimated to be positive, it would indicate that preferential treatment induces countries to increase their future external tariffs—i.e., it would suggest that PTAs are likely to be stumbling blocs of the multilateral trading system. Conversely, a negative  $\beta$  would give support to the building bloc's view, with countries lowering their external tariffs as they engage in preferential trade liberalization.

In addition to the change in preferences being important, theory suggests that the level of preferences may also be important: industries with larger preferences may experience more or less pressure to liberalize. As a result, we also include preference level as a regressor in some specifications. Finally, because sectors with high tariffs may be more likely to experience greater liberalization (especially when changes are measured in percentage points), we also control for the initial tariff (MFNinit) and the lagged MFN tariff (MFN\_1) in many of the specifications.

#### **IV. Data**

We use data on bilateral preferential tariffs, external (MFN) tariffs and trade for ten Latin American Countries: Argentina, Brazil, Chile, Colombia, Ecuador, Mexico, Peru, Paraguay, Uruguay, and Venezuela. Data on preferential and multilateral tariffs come from individual country sources; see the appendix for a detailed description (to be added). Data were supplemented with multilateral tariffs and industrial trade data from World Integrated Trade System. Because of gaps in the data we also use a four-period panel of three-year averages, and split the panel into two periods of six-year averages.

In the sample, the occurrence of positive changes in MFN tariffs is roughly equal to the occurrence of negative changes, indicating that increases in external tariffs are indeed quite common. Specifically, about one-third of the time tariffs were increased, one-third of the time tariffs remained constant, and one-third of the time they declined. For that reason, in our main estimations we disregard any potential institutional constraint on tariff increases suggested by Article XXIV.<sup>6</sup> Declines are on average larger than increases, resulting in liberalization on aggregate.

Table 1 reports the summary statistics of the key variables in the study. Using the annual data, the average liberalization was about 1 percentage point or 5 percent per year. MFN tariffs fell from an average of 26 percent at the beginning of the sample to about 14 percent at the end of the sample; they average about 15 percent over the whole sample.

Figure 1 shows a scatter plot of the MFN tariff changes in percentage points and in percent versus the ln of the preference variable, using the four-year averaged data. If trade agreements are stumbling (building) blocs then there should be an upward (downward) slope to the scatter plot, with higher preferences inducing greater (smaller) increases in tariffs. From the two scatter plots, there is little evidence that trade agreements are stumbling blocs or building blocs to free trade.

Figure 2 uses the two-period panel and reports kernel densities for total tariff change over the sample period, for high-preference and low-preference goods respectively. In this case, high preference is defined as having a trade preference in the

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<sup>6</sup> Article XXIV of the GATT, which regulates members' departures from non-discriminatory trade policies to form free trade areas and customs union, states that the formation of such arrangements should not result in higher tariffs on imports from third countries. This requirement would suggest a censored estimation of the changes in external tariffs, to rule out positive values. In practice, however, GATT's Article XXIV is very poorly enforced. Moreover, our sample involves developing countries, which can form agreements under the less restrictive Enabling Clause, and tend to apply MFN tariffs well below their "bound" levels.

first period that is above the median preference in the country. The density for high-preference goods is left of the density for low preference goods, indicating that high preference goods have experienced greater tariff reduction. This is supportive of a building bloc theory, however it is possible that high preference goods have higher tariffs and thus greater feasible reductions. In the next section, we control for this and other potential factors.

## **V. The Effect of Regional Agreements on MFN Tariffs in Latin America**

This section reports results from estimating external tariff changes as a function of changes and levels of preferences, and controlling for industry-, year-, and country-fixed effects, using both annual and averaged data. The dependent variable is the annual change in applied MFN tariffs. We consider both changes in percentage points (dMFN) and in percent (dlnMFN). This is important when working with tariffs because percentage point changes tend to understate reductions in low tariffs, since the change is limited by the size of the tariff. Similarly, percent changes tend to overstate the importance of changes in small tariffs.<sup>7</sup>

Table 2 and Table 3 report the results of estimating Equation 4 with both the change in preference and the ln difference in preference as independent variables. In the first two columns we include the change preference as the dependent variable, along with country-, year-, and industry-fixed effects. In the next four columns, we control for initial MFN tariffs and lagged tariff levels. The intuition for controlling for the size of the tariff is that tariff cuts may be higher when tariffs are higher. In all specifications, the

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<sup>7</sup> If the tariff is zero it can only be raised. This could in principle bias our results. We try excluding the zeros but our results are qualitatively unaffected. The MFN tariff is zero in only one percent of observations.

coefficient is negative and highly significant, offering support for the building bloc theory. An increase in preferences is associated with a decline in the MFN tariff in the following year. As expected, higher tariffs have significantly higher reductions.

Table 4 reports the results of estimating the equation for each country separately, with industry- and year-fixed effects. While the results are mixed, there is more support for the building bloc theory. Overall, the majority of the estimated coefficients are negative. Moreover, of the seven significant coefficients, six are negative.

Table 5 reports the results using the lagged ln-level of the preference as the explanatory variable. Theory implies that products where preferences loom larger are more likely to be liberalized or protected. In this case, it is especially important to control for initial or lagged tariff levels, since these will be correlated with the preference level. Again, all of the coefficients are negative and highly significant, offering further support to the building bloc theory.

Because preferences could be measured with error, we use an indicator variable that is one if preferences are above the sample median, instead of the level of preferences. The results are reported in Table 6. The coefficient on high preferences (HiPref) is negative and almost always significant. The presence of large preferences tends to induce greater changes in the multilateral tariff.

Table 7 reports the results on a country by country basis. The first four columns report the results with  $\ln(\text{PREF})$  as the dependent variable. The last two use HiPref, where HiPref is defined as a preference above the country median. Overall, the results are more supportive of the building bloc story. The majority of coefficients are negative and all of the 22 significant coefficient are negative.

### *Averaged Data*

The implementation of a PTA can be immediate or may last a couple of years; it is not uncommon to have phase-in periods that take up to fifteen years. The implementation of preferences overtime suggests that either adjustment costs are significant—and governments try to minimize them with long phase-in periods—or changes in policies are themselves costly.<sup>8</sup> This implies that using one-year differences can obscure much of the real effect of preferences. It is possible that long-run effects display a positive correlation between the change in tariffs and preferences. To account for these delays, we estimate on a four-period panel of three-year averages, and split the sample into two periods of six years.

Table 8 and 9 report results from repeating some of the estimations using the panel data of three-year averages. Comparing the results from Table 8 and 9 with the corresponding results for the annual data in Table 2 and 5, the results are robust and the magnitude of the estimated coefficients on preferences is greater. Thus, these results are consistent with the previous ones—indicating that regionalism is a building bloc to external liberalization. The increase in the coefficient also suggests that delays are important and that the full effect takes a few years to be realized.

Table 10 reports results from splitting the sample into two and averaging the data. Thus, this is a long difference over the whole period. Again, the results support a building bloc story and the magnitude of the coefficients is even larger, indicating the full effect is greater than the annual effects. In this case, when we include lagged levels (which are identical to initial values since there are only two periods) the coefficient on

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<sup>8</sup> Indeed, as Mayer (1999) notes, legislative procedures necessary to alter trade laws are typically costly and time-demanding. As a result, "trade laws [are typically held unaltered] unless fundamental shifts in an industry's competitiveness occur" (p. 247).

PREF is not always significant. This is not surprising, giving the high degree of multicollinearity present in a two-period sample, since there is only cross-sectional variation.

## **VI. Conclusion**

We find that regional trade agreements are building blocs to trade liberalization in Latin America. This result is in strong contrast to much of the theoretical literature and to recent work by Nuno Limao on the United States and the European Union. We think that trade agreements in developing countries may be more likely to create incentives for trade liberalization for a number of reasons. One possibility is that, since the multilateral system has not enforced much tariff reduction on developing countries, regional agreements may offer an enforcement mechanism for a broader reform package.

Alternatively, regionalism may set the stage for competitive liberalization. If countries in a South-South agreement have incentives to liberalize because the costs of trade diversion are large, a competitive liberalization could result. As one partner lowers external tariffs, the preferences the other country faces decline, encouraging a reciprocation of the reduction in preferences. Alternatively, considering that agreements must be self-enforcing, the tariff reduction by one member would lead to a decline in the gain from the agreement to the partner. Lowering external tariffs would increase the gain and make the agreement self-enforcing. Thus, the new equilibrium would be one with lower tariffs.

Future work is needed to explore the robustness of the results to other regions and to identify the mechanism at work.

## References

- Bagwell, K. and R. Staiger (1999a). "An Economic Theory of GATT." *American Economic Review* 89(1), 215-48.
- Bagwell, K. and R. Staiger (1999b). "Regionalism and Multilateral Tariff Cooperation" In J. Piggott and A. Woodland (eds.), *International Trade Policy and the Pacific Rim*. London: Macmillan.
- Bagwell, K. and R. Staiger (2004). "Multilateral Trade Negotiations, Bilateral Opportunism and the Rules of GATT/WTO." *Journal of International Economics* 63(1), 1-29.
- Baldwin, R. (1995) "A Domino Theory of Regionalism" in R. Baldwin, P Haaparanta, and J. Kiander eds. *Expanding Membership of the European Union* (Cambridge U.K: Cambridge University Press).
- Bhagwati, J. and A. Panagariya, 1999, "Preferential Trading Areas and Multilateralism: Strangers, Friends or Foes?" *Regionalism in trade policy: Essays on preferential trading* Singapore; River Edge, N.J. and London: World Scientific.
- Bohara, A., K. Gawande, and P. Sanguinetti (2004) "Trade diversion and declining tariffs: evidence from Mercosur." *Journal of International Economics* 64, 65-88.
- Bond, E., C. Syropoulos, C. and A. Winters (2001). "Deepening of Regional Integration and Multilateral Trade Agreements." *Journal of International Economics* 53(2), 335-61.
- Bond, E., R. Riezman and C. Syropoulos (2004). "A Strategic and Welfare Theoretic Analysis of Free Trade Areas." *Journal of International Economics* 64(1), 1-27.
- Cadot, O., J. de Melo and M. Olarreaga (1999). "Regional Integration and Lobbying for Tariffs Against Non-Members." *International Economic Review* 40(3), 635-57.
- Cadot, O., J. de Melo and M. Olarreaga (2001). "Can Bilateralism Ease the Pains of Multilateral Trade Liberalization?" *European Economic Review* 45(1), 27-44.
- Chang, W. and L. A. Winters (2002). "How Regional Blocs Affect Excluded Countries: The Price Effects of Mercosur." *American Economic Review* 92(4), 889-904.
- Ethier, W. (1998). "Regionalism in a Multilateral World." *Journal of Political Economy*, 106, 1214-1245.
- Foroutan, F. (1998). "Does Membership in a Regional Preferential Trade Arrangement Make a Country More or Less Protectionist?" *The World Economy* 21, 305-35.

Frankel, J., E. Stein, and S. Wei, 1995 "Trading Blocs and the Americas: The Natural, the Unnatural and the Supernatural" *Journal of Development Economics* 47(10): 61-95.

Freund C. (2000a). "Different Paths to Free Trade: The Gains from Regionalism." *Quarterly Journal of Economics* 52, 359-76.

Freund, C. (2000b) "Multilateralism and the Endogenous Formation of Free Trade Agreements" *Journal of International Economics*, 115, 1317-41.

Freund C. (2001). "Spaghetti Regionalism." Mimeo.

Grossman, G. and E. Helpman (1994). "The Politics of Free-Trade Agreements." *American Economic Review*, 85(4), 667-90.

Karacaovali and Limao (2004) "The Clash of Liberalizations: Preferential versus Multilateral Trade Liberalization in the European Union." World Bank Working Paper 3493.

Kemp, M. and H. Wan (1976). "An elementary proposition concerning the formation of customs unions." *Journal of International Economics* 6(1), 95-7.

Krishna, P. (1998). "Regionalism and Multilateralism: A Political Economy Approach." *Quarterly Journal of Economics* CXIII(1), 227-52.

Krueger, A. (2000). "NAFTA's Effects: A Preliminary Assessment." *World Economy* 23(6), 761-75.

Krugman, 1993 "Regionalism versus Multilateralism: Analytical Notes." In J. De Melo and A. Panagariya (eds.), *New Dimensions in Regional Integration*. Cambridge University Press 59-84.

Levy, P. 1997. "A Political-Economic Analysis of Free trade Agreements", *American Economic Review* 87(4), 506-19.

Limao, N. 2005 "Preferential Trade Agreements as Stumbling Blocks for Multilateral Trade Liberalization: Evidence for the U.S." CEPR DP no. 4884.

Magee, S. and H. Lee (2001). "Endogenous Tariff Creation and Tariff Diversion in a Customs Union." *European Economic Review* 45(3), 495-518.

Mayer, W. (1999). "The Political Economy of Administering Trade Laws." In J. Piggott and A. Woodland (eds.), *International Trade Policy and the Pacific Rim*. London: Macmillan.

McLaren, J. (2002). "A Theory of Insidious Regionalism." *Quarterly Journal of Economics* CXVII(2), 571-608.

- Ornelas, E. (2004). "Feasible Multilateralism and the Effects of Regionalism." Mimeo.
- Ornelas, E. (2005a) "Endogenous Free Trade Agreements and the Multilateral Trade System." *Journal of International Economics*, forthcoming.
- Ornelas, E. (2005b). "Trade Creating Free Trade Areas and the Undermining of Multilateralism." *European Economic Review*, forthcoming.
- Panagariya, A. 2000, "Preferential Trade Liberalization: The Traditional Theory and New Developments." *Journal of Economic Literature* XXXVIII2: 287-331.
- Panagariya, A. and R. Findlay (1996). "A Political-Economy Analysis of Free-Trade Areas and Customs Unions." In R. Feenstra, G. Grossman and D. Irwin (eds.), *The Political Economy of Trade Reform: Essays in Honor of J. Bhagwati*. Cambridge, Mass.: MIT Press.
- Panagariya A. and P. Krishna (2002). "On the Existence of Necessarily Welfare Improving Free Trade Areas." *Journal of International Economics* 57(2), 353-67.
- Richardson, M. (1993). Endogenous protection and trade diversion. *Journal of International Economics* 34 (3– 4), 309-24.
- Richardson, M. (1995). "Why a Free Trade Area? The Tariff Also Rises." *Economics and Politics* 6(1), 79-96.
- Riezman, R. (1999). "Can bilateral trade agreements help to induce free-trade?" *Canadian Journal of Economics* 32 (3), 751-66.
- Summers, L. (1991). "The Move to Free trade Zones: Comment", Federal Reserve Bank of Kansas City, *Review* (December).
- Syropoulos, C. (1999). "Customs Unions and Comparative Advantage." *Oxford Economic Papers* 51(2), 239-66.
- Viner, J. (1950) *The Customs Union Issue*. New York: Carnegie Endowment for International Peace.
- World Bank (2005). *Global Economic Prospects, Trade, Regionalism, and Development*. World Bank: Washington DC.

**Table 1: Summary Statistics**

<b>Variable</b>	<b>Mean</b>	<b>SD</b>	<b>Median</b>	<b>Min</b>	<b>Max</b>	<b>NOB</b>
<b>Annual Data</b>						
pref	2.36	3.66	0.66	0	54.52	9358
dpref	0.34	1.49	0.026	-11.969	18.49	6980
dlnpref	0.84	3.58	0.086	-18.55	18.97	6980
MFN	15.02	8.47	14.02	0	117.33	11345
MFNinit	25.61	14.14	22.78	0	85	11722
dMFN	-1.22	4.53	0	-63.00	39.44	10147
dlnMFN	-5.93	26.05	0	-296.62	353.29	9975
<b>Four-Period Panel</b>						
pref	2.29	3.47	0.76	0	35.54	3545
MFN	14.99	7.54	13.89	0	117.33	3948
MFNinit	19.26	9.07	18.10	0	66.66	3948
dMFN	-1.79	5.72	-0.11	-47.3	100.67	2943
dlnMFN	-10.20	35.23	-1.04	-223.50	214.62	2909
<b>Two-Period Panel</b>						
Pref_1	1.18	1.47	0.55	0	9.96	935
MFN_1	16.07	6.63	15.85	0	43.33	969
MFN	15.01	6.80	14.20	0	116.0	1974
dMFN	-2.31	5.67	-2.09	-22.51	102.67	969
dlnMFN	-15.19	36.73	-15.42	-212.82	258.40	958

**Table 2: Change in Preferences and Change in External Tariffs, Annual Results**

	dMFN	dlnMFN	dMFN	dlnMFN	dMFN	dlnMFN
dPREF_1	-0.184** (-6.31)	-0.864** (-6.44)	-0.183** (-6.27)	-0.860** (-6.39)	-0.065** (-2.45)	-0.314** (-2.32)
MFNinit			-0.039** (-9.94)	-0.137** (-7.18)		
MFN_1					-0.221** (-5.23)	-1.04** (-5.81)
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
NOB	7097	6998	7097	6998	7097	6998
R2	0.22	0.15	0.24	0.16	0.37	0.20

Errors adjusted for clustering at the country-industry level.

\*\* Significant at the 5 percent level. \* Significant at the 10 percent level.

**Table 3: Change in Preferences and Change in External Tariffs, Annual Results**

	dMFN	dlnMFN	dMFN	dlnMFN	dMFN	dlnMFN
dlnPREF_1	-0.104** (-7.74)	-0.499** (-5.33)	-0.104** (-7.75)	-0.500** (-5.35)	-0.079** (-6.96)	-0.405** (-4.52)
MFNinit			-0.039** (-10.07)	-0.139** (-7.29)		
MFN_1					-0.220** (-5.24)	-1.03** (-5.83)
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
NOB	7097	6998	7097	6998	7097	6998
R2	0.23	0.16	0.25	0.16	0.38	0.21

Errors adjusted for clustering at the country-industry level.

\*\* Significant at the 5 percent level. \* Significant at the 10 percent level.

**Table 4: Country Regressions, Annual Data**

Country	Coefficient on: dPREF		Coefficient on: dlnPREF	
	dMFN	dlnMFN	dMFN	dlnMFN
Argentina	-0.079 (-0.73)	-0.240 (-0.29)	-1.16 (-1.13)	0.672 (1.32)
Brazil	-0.384** (-3.91)	0.234 (0.45)	-0.088 (-1.12)	0.767 (1.02)
Chile	-0.008 (-1.07)	0.205** (2.04)	0.002 (0.88)	0.026 (1.61)
Colombia	-0.029 (-0.83)	-0.268 (-0.93)	-0.011* (-1.83)	-0.108 (1.49)
Ecuador	-0.008 (-0.12)	0.030 (0.09)	-0.005 (-0.35)	-0.047 (-0.37)
Mexico	-0.102** (-2.45)	-0.701 (-1.47)	-0.417 (-1.11)	-16.519** (-2.25)
Peru	-0.003 (-0.12)	0.056 (0.21)	-0.020 (-1.23)	-0.150 (-1.09)
Paraguay	-0.124** (-2.19)	-0.595** (-2.33)	0.016 (0.34)	0.096 (0.20)
Uruguay	-0.033 (-1.60)	0.209 (0.93)	-0.016 (-1.38)	0.527 (1.05)
Venezuela	-0.043 (-1.44)	-0.248 (-1.29)	-0.10 (-0.89)	-0.021 (-0.22)
Industry Fixed Effects	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
No. negative	10	5	8	5

Errors adjusted for clustering at the industry level.

\*\* Significant at the 5 percent level. \* Significant at the 10 percent level.

**Table 5: Preferences and External Tariffs, Annual Results**

	dMFN	dlnMFN	dMFN	dlnMFN	dMFN	dlnMFN
LnPREF_1	-0.078** (-6.40)	-0.655** (-7.46)	-0.073** (-6.43)	-0.638** (-7.52)	-0.042** (-3.66)	-0.561** (-6.91)
MFNinit			-0.052** (-14.64)	-0.182** (-9.38)		
MFN_1					-0.217** (-6.08)	-0.860** (-6.19)
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
NOB	8244	8131	8244	8131	8244	8131
R2	0.33	0.22	0.35	0.23	0.46	0.26

Errors adjusted for clustering at the country-industry level.

\*\* Significant at the 5 percent level. \* Significant at the 10 percent level.

**Table 6: Preferences and External Tariffs, Annual Results**

	dMFN	dlnMFN	dMFN	dlnMFN	dMFN	dlnMFN
HiPref	-0.549** (-6.03)	-4.262** (-6.14)	-0.414** (-4.70)	-3.786** (-5.49)	-0.038 (-0.32)	-2.48** (-3.50)
MFNinit			-0.052** (-15.01)	-0.172** (-9.20)		
MFN_1					-0.221** (-6.02)	-0.863** (-6.17)
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
NOB	8244	8131	8244	8131	8244	8131
R2	0.33	0.22	0.35	0.22	0.46	0.25

Errors adjusted for clustering at the country-industry level.

\*\* Significant at the 5 percent level. \* Significant at the 10 percent level.

HiPref is an indicator variable that is one if the preference is above the median.

**Table 7: Country Regressions, Annual Data**

Country	Coefficient on: Ln(PREF)				HiPref	
	dMFN	dlnMFN	dMFN	dlnMFN	dMFN	dlnMFN
Argentina	-0.038 (-1.57)	-0.138 (0.54)	-0.184* (-1.78)	-0.392 (0.65)	-0.535 (-1.09)	-3.568 (-0.89)
Brazil	-0.074 (-1.53)	-0.437* (-1.88)	-0.009 (-0.09)	-0.895 (-1.50)	-1.438** (-2.28)	-6.151** (-2.06)
Chile	-0.001 (0.71)	0.003 (0.42)	0.002 (1.63)	0.012 (1.30)	0.037 (0.69)	0.255 (1.32)
Colombia	-0.023 (-1.18)	0.105 (0.71)	-0.048 (-1.50)	-0.062 (-0.26)	-0.218 (-1.22)	-3.405** (-2.74)
Ecuador	0.004 (0.29)	-0.051 (-0.68)	0.022 (0.81)	-0.101 (0.63)	-0.041 (-0.17)	-2.297* (-1.81)
Mexico	0.008 (0.12)	-2.97* (-1.76)	-1.20** (-3.46)	-36.11 (-1.41)	-0.570 (-1.59)	-3.472** (-2.11)
Peru	-0.039** (-4.40)	-0.269** (-4.88)	-0.081** (-2.83)	-0.549** (-3.58)	-0.459** (-2.38)	-2.765** (-2.37)
Paraguay	0.054 (1.50)	0.135 (0.32)	0.049 (0.99)	-0.303 (-0.45)	-1.253** (-3.47)	-12.018** (-4.37)
Uruguay	-0.017 (-0.85)	-0.706* (-1.71)	-2.33** (-2.20)	-0.009 (-0.85)	-2.053** (-3.92)	-34.797** (-4.23)
Venezuela	-0.008 (-0.85)	-0.024 (-0.31)	-0.014 (-0.52)	0.065 (0.35)	0.072 (0.66)	1.048 (0.87)
Industry Fixed Effects	No	No	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
No. negative	7	7	7	8	8	8

Errors adjusted for clustering at the industry level.

\*\* Significant at the 5 percent level. \* Significant at the 10 percent level.

**Table 8: Preferences and External Tariffs, Panel of 3-year Averages**

	dMFN	dlnMFN	dMFN	dlnMFN	dMFN	dlnMFN	dMFN	dlnMFN
dPREF_1	-0.366** (-3.34)	-2.389** (-6.86)	-0.281** (-2.72)	-1.375** (-3.12)				
dlnPREF					-0.134** (-2.88)	-0.890** (-5.22)	-0.120** (-2.91)	-0.756** (-5.35)
MFN_1			-0.116** (-6.84)	-1.400** (-3.48)			-0.140** (-935)	-1.506** (-3.75)
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
NOB	1670	1658	1670	1658	1670	1658	1670	1658
R2	0.26	0.32	0.28	0.37	0.25	0.31	0.28	0.38

Errors adjusted for clustering at the country-industry level.

\*\* Significant at the 5 percent level. \* Significant at the 10 percent level.

**Table 9: Preferences and External Tariffs, Panel of 3-year Averages**

	dMFN	dlnMFN	dMFN	dlnMFN	dMFN	dlnMFN
LnPREF_1	-0.220** (-5.21)	-1.443** (-7.57)	-0.193** (-4.85)	-1.334** (-7.59)	-0.072 (-1.53)	-0.842** (-4.48)
MFNinit			-0.240** (-16.60)	-1.117** (-14.78)		
MFN_1					-0.492** (-6.83)	-2.124** (-7.10)
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
NOB	2611	2588	2611	2588	2611	2588
R2	0.40	0.38	0.46	0.42	0.59	0.47

Errors adjusted for clustering at the country-industry level.

\*\* Significant at the 5 percent level. \* Significant at the 10 percent level.

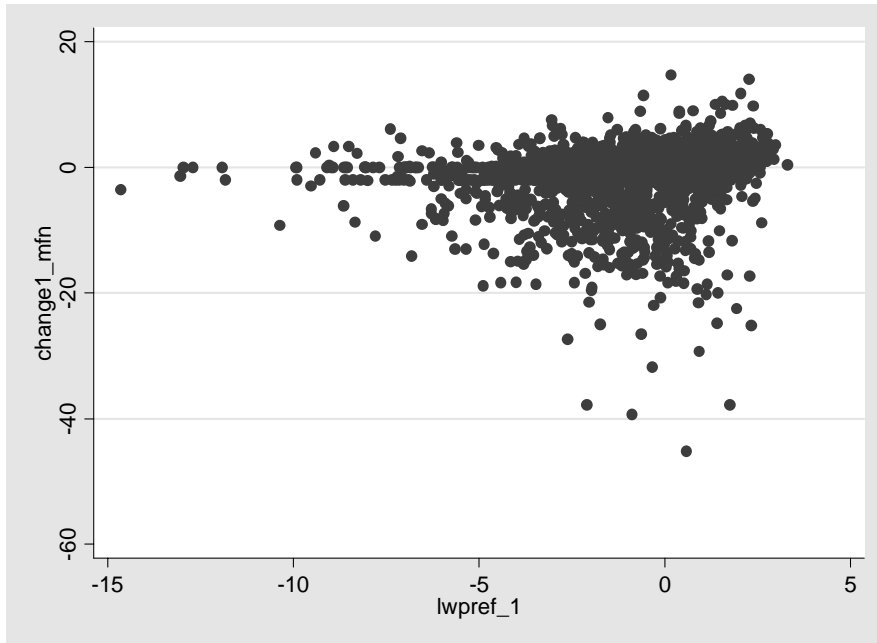
**Table 10: Preferences and External Tariffs, Two-period panel**

	dMFN	dlnMFN	dMFN	dlnMFN
LnPREF_1	-0.447** (-2.34)	-2.312** (-3.05)	-0.304 (-1.61)	-1.502** (-2.33)
MFNinit			-0.572** (-16.06)	-3.700** (-12.34)
Industry fixed effects	Yes	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes	Yes
NOB	935	927	935	927
R2	0.38	0.40	0.53	0.55

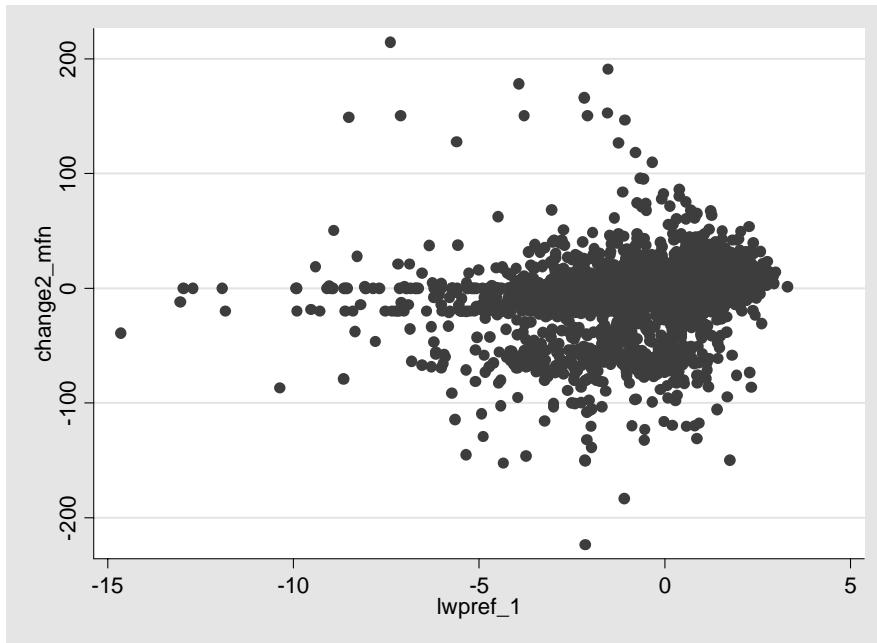
Errors adjusted for clustering at the country-industry level.

\*\* Significant at the 5 percent level. \* Significant at the 10 percent level.

Figure 1: Preferences and Changes in MFN Tariffs  
(Using four-period average data)

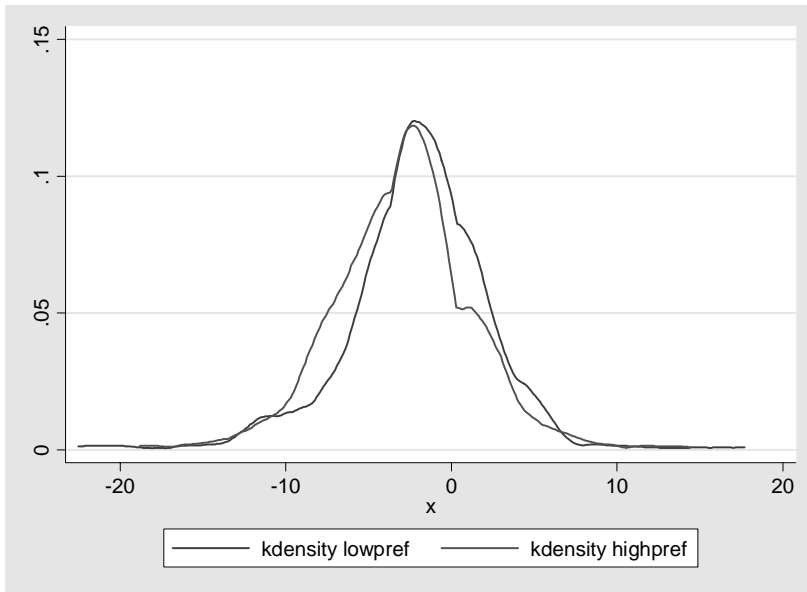


Vertical axis shows *percentage point* change in MFN tariff, horizontal axis reflects lagged ln preferential tariff.

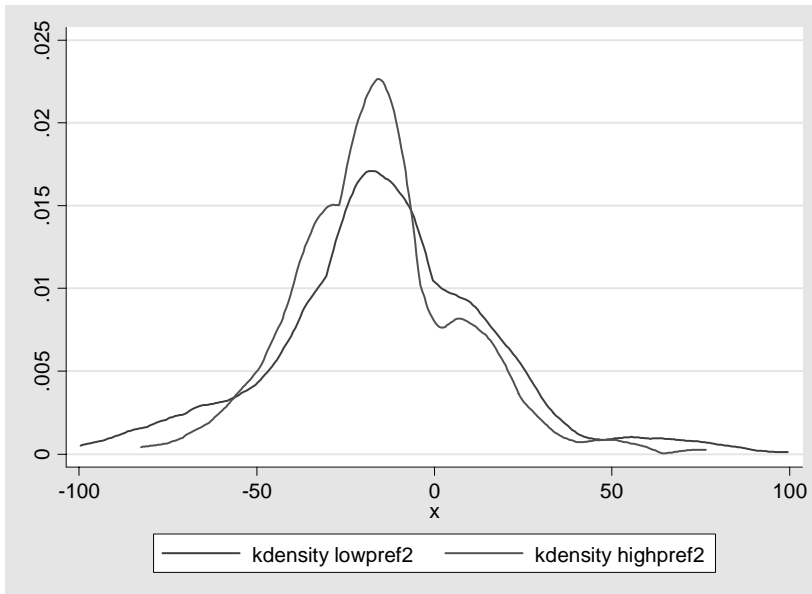


Vertical axis shows *percentage* change in MFN tariff, horizontal axis reflects lagged ln preferential tariff.

Figure 2: Kernel Density of Tariff Changes for Low Versus High Preference Goods



Horizontal axis reflects *percentage point* MFN tariff change from first half of sample to second half. .



Horizontal axis reflects *percentage* MFN tariff change from first half of sample to second.