Sensitive Sectors in Free Trade Agreements

Alan V. Deardorff

The University of Michigan

May 17, 2017

ABSTRACT

Sensitive Sectors in Free Trade Agreements

Alan V. Deardorff

The University of Michigan

This paper documents the presence of "sensitive sectors" in Free Trade Agreements, defined as sectors for which the within-FTA tariffs remain positive. The paper includes some brief theoretical discussion of the welfare implications of these, but the main emphasis is on reporting two measures of this phenomenon for countries in FTAs that entered into force between 1994 and 2003. One measure is the percentage of tariff lines that remain dutiable, and the second is the change, from before the FTA to after, in the average maximum (across 6-digit products) positive tariffs. Both measures are derived from data in the UNCTAD TRAINS database, and are then related to measures of country characteristics that might explain them. Low per capita GDP countries tend to have larger fractions of dutiable tariff lines, while higher income countries tend to post larger increases in average maximum positive tariffs. Both suggest that the favored treatment of sensitive sectors is undermining the potential gains from trade that FTAs provide.

Keywords: Free trade agreement
Sensitive sectors

JEL Subject Code: F13 Commercial Pol.

Correspondence:

Alan V. Deardorff
Ford School of Public Policy
University of Michigan
Ann Arbor, MI 48109-3091

Tel. 734-764-6817
Fax. 734-763-9181
E-mail: alandear@umich.edu
http://www-personal.umich.edu/~alandear/

May 17, 2017

Sensitive Sectors in Free Trade Agreements [*]

Alan V. Deardorff
The University of Michigan

I. Introduction

Free trade agreements have been proliferating for almost three decades, now numbering in the hundreds that have been notified to the World Trade Organization.[1] As most simply defined, an FTA is an agreement between two or more countries to reduce to zero their tariffs and other trade barriers on each others' exports while leaving unchanged there barriers to exports from other countries. As we teach about the economic effects of FTAs, we assume that *all* within-FTA tariffs are eliminated. But the GATT/WTO only requires that they be eliminated on "substantially all the trade between the constituent territories on products originating in such territories."[2] In practice almost all FTAs leave in place positive tariffs on some sectors, which I will call "sensitive sectors." My purpose here is to examine the implications of such exceptions, how common they are, and what it may be that motivates them.[3]

---

[*] I have benefited…

[1] See World Trade Organization, https://www.wto.org/english/tratop_e/region_e/regfac_e.htm.

[2] See Article XXIV, 8(b), https://www.wto.org/english/res_e/booksp_e/analytic_index_e/gatt1994_09_e.htm#article24.

[3] The qualification "on products originating" may well be as or more important, depending on the restrictiveness and implications of an FTA's rules of origin (ROOs). I have addressed these in another paper, Deardorff (2016).

Calling them sensitive sectors already alludes to the most likely explanation for them. Those sectors where domestic production is most likely to be adversely impacted by an FTA will be prime candidates for protection, either by slowing down or completely eliminating the reduction in tariffs that protect them. Thus these are sectors where losses of employment by workers and profits by firms are expected to be large if they are made to compete head-to-head with imports from the FTA partner.

This also suggests why the implications of excluding such sectors may be worth exploring. As I will begin by explaining in more detail in Section II, sensitive sectors are precisely those in which Viner's (1950) "trade creation" is most likely. By excluding tariff cuts in such sectors, countries are systematically reducing the trade creation and its associated gains from trade, while leaving in place the trade diversion that Viner taught us would be harmful. Thus the greater the extent to which countries exclude sensitive sectors from the tariff cuts of FTAs, the more likely it will be that the overall welfare effects of the FTA will be negative.

To explore this issue further, I have used the TRAINS database of UNCTAD to assess the presence of sensitive sectors in a number of FTAs. The largest part of this paper will be a report of what I found: How common is it for countries that enter FTAs to continue levying positive tariffs on their FTA partners? How large are these tariffs? And what is the resulting structure of the tariffs that these countries apply?

I will note that there is a tendency for the sensitive sectors to be those in which the largest tariffs were levied prior to the FTA. As a result, when these tariffs are retained while the initially lower tariffs in other sectors are eliminated, the tariff structure of a country becomes more uneven than before. There is reason to think, from an old

theoretical literature on piecemeal tariff reductions that I will discuss, that this increased unevenness could impose an additional cost on the country.

Finally, I will make a first attempt to learn what characteristics of countries are most associated with high levels of sensitive-sector exclusion. The data suggest, most clearly but far from universally, that it is poorer countries that have more exemptions of sensitive sectors in their FTAs, and therefore that, once again, it is the poorer countries of the world who are gaining least from trade liberalization, and they may actually be losing.

II. The Economics of FTAs

The economics of trade creation and trade diversion can be illustrated for a simple case as in Figures 1-3. Without an FTA, suppose that the focus country, country A, is an importer of a good and could import it from either a low-cost country, B, or a high-cost country, C. If the same tariff is applied to both, as in Figure 1, then country A will import only from the low-cost country B, as shown.

As we now consider country A's trade for different goods, a potential partner country might be high-cost in some and low-cost in others. Figure 2 shows the case where the partner country is low-cost, thus country B. In this case, eliminating the tariff on the good simply causes it to import more from the partner, and there are unambiguous gains from trade as shown. These gains are accompanied, however, by a loss of producer surplus shown as area "a" and a loss of output and employment in the sector as well. Thus the country gains on a net basis, but at the perhaps considerable expense of the local industry.

In other sectors the partner country may be the high-cost country. Of course if its cost disadvantage is larger than the tariff, then eliminating the tariff in the FTA will not change anything. But if its cost disadvantage is smaller than the tariff, as in Figure 3, then the home country will switch its imports from the outside country, B, to the partner country, C, as shown. In this case there is again some trade creation, but there is also trade diversion, and this shows up in welfare terms as the portion of the lost tariff revenue that is not offset by any gain to demanders, area "e". The country may in this case lose, if the loss from this trade diversion exceeds the gain from trade creation.

Again in Figure 3 there is a loss of producer surplus, "a", and a fall in output and employment. But these changes are smaller than in Figure 2 because the price does not fall by the full amount of the tariff.

The lesson here is that, as we compare across sectors the effects of tariff elimination with an FTA, the costs to firms and workers in the import-competing industry are larger in precisely those sectors where the gains from trade, if positive, are largest, and the possibility of losses from the FTA due to trade diversion are smallest.

All of this was holding constant all other aspects of the problem that might differ across industries, such as the size of the tariff, the elasticity of domestic supply, and the costs differences between partner and outside countries. But further manipulation of the diagrams will easily show that these other factors too tend to associate greater gains from the FTA with greater costs to the domestic industry. Thus, if countries are permitted to exempt certain sectors from tariff elimination, and if they base these examptions on the costs that tariff reduction would impose of firms and workers in those sectors, then they

will systematically exempt those sectors where the potential gains from trade were most likely to be positive and large.

One of these other factors deserves special mention: the size of the tariff. On the one hand, it is likely for political economy reasons that the largest tariffs are to be found in those sectors most vulnerable to disruption by imports. And in addition, eliminating a large tariff must inevitably be more disruptive than eliminating a small one, as is also evident from the figures. Thus we can expect for both of these reasons that exempted sectors will be ones with the highest tariffs. Thus if an FTA is implemented while exempting sensitive sectors, it will be low tariffs that are eliminated while the highest tariffs will be retained. This, as I will discuss in section IV, provides an additional reason to suspect that FTAs may be economically harmful.

III. How Common Are Sensitive Sectors?

In order to get a sense of how common it is for participants in FTAs to retain positive tariffs on some sectors, I consulted the TRAINS database of the United Nations Conference on Trade and Development (UNCTAD). TRAINS, which stands for Trade Analysis Information System, includes data on tariffs levied by as many as 193 reporting countries on imports from as many as 272 exporting countries and jurisdictions. These are available at the 6-digit Harmonized System level for years 1988-2014, to the extent that they have been reported. Reported indicators include both simple and weighted

average tariffs, minimum and maximum rates for each 6-digit category, and the numbers of total and dutiable tariff lines for these categories.[4]

As a sample of what I have taken from these data, Figures 4-6 show the results of my processing data for the FTA between Colombia and Mexico that entered into force in 1995. I choose this example because it includes several features, some useful and some problematic, that show up often in the data on other FTAs. The complete set of such figures for all of the FTAs that I have processed appears in the Appendix.

Figure 4 shows the simple average of ad valorem tariffs reported by Colombia against exports from Mexico and by Mexico against exports from Colombia for the available years. The figure heading describes these as "simple average of simple average tariffs," because they are unweighted averages of the simple averages reported for each 6-digit sector. Since sectors differ in the number of tariff lines that they include, this gives somewhat larger weight to some tariff lines than to others. I chose not to use weighted average tariffs here for the familiar reason that these may under-represent high tariffs that have substantially reduced trade.

Data have not been reported to TRAINS for all possible years, especially the early years prior to the Colombia-Mexico FTA's entry into force. Given that those data that are reported are sometimes suspect, this suggests that such early data as are present should not necessarily be presumed accurate.

Figure 4 shows that average tariffs did not decline at all on imports by Colombia from Mexico for the first ten years of the FTA. Only as of 2004 do we see the average

[4] Also included is the value of trade. See http://databank.worldbank.org/data/reports.aspx?source=UNCTAD-~-Trade-Analysis-Information-System-%28TRAINS%29.

tariffs dropping, and then to around one percent, with the exception of 2006 which is probably misreported. Tariffs on Mexico's imports from Colombia begin to fall sooner than Colombia's tariffs, but to levels not quite as low. But again, there are several years for which the Mexican tariff appears anomalously high. My impression here, as in all of this project, is that the data are informative, but that they contain a great deal of noise and that noise is not at all random. All results below must be understood in that context.

Figure 5 gets at the main issue of this paper, the exemption of sectors from tariff cuts. It reports the number of dutiable tariff lines as a percent of total tariff lines for each direction of trade flow. Consistent with what we saw for the average tariffs, these remain close to 100% for the first ten years of the FTA, then drop suddenly in 2004 to only a few percent. The scale of the figure makes it hard to see just what these low percentages are, so I report them in Table 1.

Again, there are several anomalous values which should probably be ignored (Colombia 2006 and Mexico 2011-13), but the other values seem credible and important: both countries' dutiable tariff lines fell only to the low single-digit percentages, Colombia reaching its lowest level of 3.8% in 2014, and Mexico its lowest level of 1.6% in 2006, after which it moved back up. In both cases it seems clear that sensitive sectors were being protected.

To get a sense of how high these remaining tariffs were, I chose to look at the maximum tariffs that TRAINS reported for each 6-digit sector. The simple averages of these, across only those 6-digit sectors where average tariffs themselves were positive, are shown in Figure 6. This gives some indication of something that I've found more strongly, but not universally, in other FTAs: that the maximum tariffs in sectors with

positive tariffs tend to rise after the FTA goes into effect. What seems to be happening in many cases is perhaps not surprising: that countries eliminate tariffs completely in sectors where tariffs are not very high, but they keep the largest tariffs in place, so that the average positive tariff rises. This is a pattern that I will document further, and discuss its implications, in Section IV.

I attempted to gather data such as Figures 4-6 for all FTAs that were notified to the WTO and that entered into force during the ten years from 1994 through 2003. The starting date captured NAFTA, while any earlier starting point would have meant that data from before each FTA might be scarce. The ending date reflects the desirability of having data for at least ten years after an FTA goes into force. The reason for this, as we've seen in the data for Colombia-Mexico, is that FTAs are usually implemented only over a period of years, so that too short a period after their implementation may not capture all of the sectors whose tariffs will ultimately be eliminated.

With only a few exceptions, all of the FTAs notified to the WTO during this period are included in the TRAINS database.[5] However, there are many FTAs involving Eastern European countries for which the data seemed to be too sparse to be usable. None of these have therefore been included.

I have also so far excluded FTAs that include more than two countries, with the exception of NAFTA and several FTAs of the EU. The reason is simply my own available resources, as the number of bilateral trade flows within a multi-country FTA grows exponentially with its size. I have only included data from each of the six intra-

[5] The exceptions are the FTAs involving the Faroe Islands (with the EU and Switzerland) and Palestine (with the EU and EFTA), neither of which appears in TRAINS.

NAFTA flows, plus a sample of data from EU FTA partners with several EU countries, but no others.[6]

Table 2 reports what I learned from the data for all of the FTAs that I was able to process. For each FTA it gives the year in which it entered into force followed by two tariff measures that I have calculated for each direction of bilateral trade within the FTA. The first of these measures is the same as in Table 1: the percent of dutiable tariff lines, except that I report only the minimum of these across all years for which data are reported.

The second measure tries to capture what I discussed above in connection with Figure 6: the extent to which the average (across 6-digit sectors) maximum positive tariff rose from before the FTA to after. These are reported as "Pre-PostChg" in Table 2. To the extent that these are positive, it likely means that sectors where maximum tariffs were small tended to have their tariffs eliminated.

A glance at Table 2 should be enough to convey the two main messages of this paper:

- First, only very rarely do members of an FTA eliminate all tariffs on trade with other members. Most continue to levy positive tariffs on a small percentage of tariff lines (percentages in the single digits) and a large minority keep positive tariffs on much larger fractions.

- Second, there is a common tendency for the average maximum positive tariff to rise after the FTA compared to what it was before. There are certainly a fair number of negative numbers in the Pre-PostChg column of Table 2, but the positives far outnumber the negatives.

[6] Every member of the EU, because it is a customs union, levies the same tariffs against its FTA partners. But the partners need not levy the same tariffs against each member country of the EU. The graphs in the Appendix for EU FTAs with Turkey, Tunisia, South Africa, Morocco, Israel, and Mexico show those countries' tariff measures on imports from Belgium, France, Germany, Italy, and Poland. These measures do differ across these exporting EU countries, but not a great deal.

While these are the main messages of this paper, it may be worthwhile noting two other features of these data for specific countries:

- Singapore stands out as a country that has not protected sensitive sectors. But then Singapore tended to have zero tariffs even before entering into FTAs.

- Chile has been an eager participant in FTAs, but it has a history of levying moderate tariffs of the same size against most imports, even before entering into FTAs, and it seems to have kept that practice within FTAs, lowering bilateral tariffs only part way to zero.

IV. Implication of Rise in Average Maximum Positive Tariff

The second result above – that a majority of FTAs result in a rise in the average maximum positive tariff – has a potentially important welfare implication. This is related to an old literature on what was called "piecemeal tariff reform." That early literature, recalled in Anderson and Neary (2007), dealt with multilateral tariff reductions, not the preferential reductions of an FTA, but even in that context there was no assurance that eliminating some tariffs while keeping others in place would be welfare improving. The main results were two: 1) that reducing all tariffs in the same proportion would be welfare improving; and 2) that "concertina tariff reductions" (reducing the largest tariff to the level of the next largest, and so forth) can be shown to be welfare improving under certain assumptions about substitutability. More recently, Anderson and Neary provided additional results in terms of their particular measures of the mean and variance of tariffs. The lesson of all of this literature tended to be that increasing the variance of tariffs tends to lower welfare.

This literature was not directed at the preferential tariff reductions of an FTA, although the lesson from Viner that preferential reductions could be welfare worsening due to trade diversion could be interpreted as an example of the harmful effects of

increasing the variance of tariffs across trading partners rather than across goods. But it seems plausible that reducing tariffs unevenly across goods within an FTA in a manner that increases their variance might also be harmful. And this, it seems to me, is what the increased average maximum positive tariff is accomplishing.

That is, unless it is the case – as I doubt – that any tariffs are increased in forming an FTA, then the only way that the average maximum positive tariff could rise would be if some of the sectors with positive but lower than average maximum tariffs were to be reduced to zero. But this would have to mean that, while the average tariff would fall, the variance of tariffs would rise.

V. Country Characteristics Associated with Sensitive Sectors

In an effort to learn what causes countries to be large users of FTA exemptions for sensitive sectors, I have constructed the scatter plots that appear in Figures 7-10 showing my two measures of the phenomenon opposite various country characteristics that may be relevant for explaining them.

The first is per capita income, taken from World Bank data for 2010 GDP measured at purchasing power parity. The rationale for this could simply be that low-income countries have large numbers of low-income workers that would be vulnerable to displacement by imports. Alternatively, it could be that low-income countries tend to be more protectionist than high income countries, and therefore more hesitant to open their markets in an FTA. In any case, the expectation would be that low-income countries would retain a larger fraction of dutiable tariff lines than high income countries, and the upper panel of Figure 7 supports that relationship. To the extent that such countries only

eliminate tariffs in sectors where tariffs were already relatively low, one would also expect the change in the maximum positive tariff for them to be large, but the bottom panel of Figure 7 shows the opposite. That is, with the exception of one high-income country (the underlying data show that to be Singapore), the average maximum positive tariff tended to rise more in high-income countries than in low.

To the extent that country size alone plays a role, these measures might be related to population. This appears on the horizontal axis of both panels in Figure 8, though without revealing anything very meaningful. If there is any relationship between the two measures and population, my eye cannot pick it up.

A much clearer relationship appears, however, in Figure 9, where the top panel shows minimum percent dutiable tariff lines opposite the years that FTAs entered into force, numbered here as years after 1993. Although there continue to be FTAs with low dutiable percentages in the more recent years, other more recent FTAs show marked increases in these percentages. In contrast, I do not perceive any pattern over time in the changes in average maximum positive tariffs in the bottom panel of Figure 9.

What I would really like to capture, however, would be a role for policy in these patterns. An obvious reason for concern with sensitive sectors would be the inability of a country to cushion the impact of trade on displaced workers. To the extent that a country has a strong social safety net, it might not see the need to protect workers from trade, and thus would be more willing to eliminate tariffs in all sectors. But if a country is not able to provide such a safety net, then protecting workers with tariffs would be more attractive.

Unfortunately, my effort to find measures of social safety nets was less successful than I'd hoped. The World Bank reports total spending on all social assistance as a percent of GDP, but only for developing countries and only about half of them. The OECD also reports "social protection spending" as a percent of GDP for the OECD countries. One might have thought from their names that these two measures are comparable, but that is far from obvious, as the OECD numbers tend to be an order of magnitude larger than those from the World Bank.[7] I have nonetheless used both as my measure of social spending in Figure 10. The top panel shows no clear relationship with these measures for percent of dutiable tariff lines, while the bottom panel repeats what was noted above, that FTAs tend to increase the average maximum positive tariffs most in high income – thus OECD – countries.

VI. Conclusion

I hope that this paper has successfully made the case that exemption of sensitive sectors from tariff elimination in FTAs is a sufficiently common phenomenon to be concerning. With very few exceptions (mainly Singapore), even high-income countries exempt a few sectors from FTA tariff cuts, and because these are likely to be the sectors with the greatest potential for welfare improving trade creation, one may reasonably wonder whether the resulting FTAs have been beneficial. Of more concern, however, is that lower-income countries have in many cases exempted far more sectors from tariff elimination than have high-income countries. It therefore seems even more likely that the proliferation of FTAs involving developing countries may have been harmful.

[7] The only country to appear in both lists is Poland, for which the World Bank value is 1.01% and the OECD value is 18%.

The analysis also noted some tendency, especially in higher income countries, for average maximum positive tariffs to rise with the formation of FTAs. This suggests that countries predominately eliminate their lowest tariffs, but not their highest, with the result that the variance of tariffs increases with the FTA. This suggests that the high-income countries too are implementing FTAs in a manner that makes them potentially harmful.

The obvious policy implication from this might seem to be that countries negotiating FTAs should follow the lead of Singapore and eliminate all tariffs. But we trade economists have been criticized for paying too little attention to the dislocations that trade liberalization causes, and to the effects on the income distribution. If FTAs that exclude sensitive sectors are not in fact increasing net welfare, and especially if countries lack the effective social policies that might attend to these dislocations, then the better policy advice might be to avoid FTAs.

References

Anderson, James E. and J. Peter Neary. 2007. "Welfare Versus Market Access: The Implications of Tariff Structure for Tariff Reform," *Journal of International Economics* 71(1), March, pp. 187-205.

Deardorff, Alan V. 2016. "Rue the ROOs: Rules of Origin and the Gains (or Losses) from Trade Agreements," in process, February 22.

Viner, Jacob. 1950. *The Customs Union Issue*, New York: Carnegie Endowment for International Peace.

Table 1
Percent Dutiable Tariff Lines in Colombia-Mexico FTA after They Dropped

Year	Colombia from Mexico	Mexico from Colombia
2004	7.1	3.8
2005	10.8	5.4
2006	93.9	1.6
2007	5.9	8.5
2008	7.2	5.3
2009	7.3	6.2
2010	6.1	4.9
2011	6.2	36.8
2012	4.2	38.4
2013	4.3	38.7
2014	3.8	

Table 2
Minimum Percent Dutiable Tariff Lines (Min%Dut)
and Change in Average Maximum Positive Tariffs (Pre-PostChg)
for Available FTAs 1994-2003

FTA	Year	Country	From	Min%Dut	Pre-PostChg
NAFTA	1994	Canada	Mexico	0.6	122.4
NAFTA	1994	Canada	US	0	186
NAFTA	1994	Mexico	Canada	0.4	23.6
NAFTA	1994	Mexico	US	0	14.6
NAFTA	1994	US	Canada	0.1	40.8
NAFTA	1994	US	Mexico	0.5	17.5
Columbia-Mexico	1995	Colombia	Mexico	3.8	2.5
Columbia-Mexico	1995	Mexico	Colombia	1.6	0.6
EU-Turkey	1996	EU	Turkey	0.4	23
EU-Turkey	1996	Turkey	Belgium	7.6	
EU-Turkey	1996	Turkey	France	16.3	33.4
EU-Turkey	1996	Turkey	Germany	15.2	32.1
EU-Turkey	1996	Turkey	Italy	12.8	32.2
EU-Turkey	1996	Turkey	Poland	8.5	25.9
Canada-Israel	1997	Canada	Israel	11.3	49.1
Canada-Israel	1997	Israel	Canada	3.9	6
Israel-Turkey	1997	Israel	Turkey	5.6	6
Israel-Turkey	1997	Turkey	Israel	10.9	20.8
Canada-Chile	1997	Canada	Chile	0	181.6
Canada-Chile	1997	Chile	Canada	79.1	-4.5
EU-Tunisia	1998	EU	Tunisia	10.4	4
EU-Tunisia	1998	Tunisia	Belgium	23.3	
EU-Tunisia	1998	Tunisia	France	31.4	-9.6
EU-Tunisia	1998	Tunisia	Germany	25.6	-4.1
EU-Tunisia	1998	Tunisia	Italy	28.6	-2
EU-Tunisia	1998	Tunisia	Poland	18.2	4.1
Chile-Mexico	1999	Chile	Mexico	1.2	-4
Chile-Mexico	1999	Mexico	Chile	0.2	17.5
EU-South Africa	2000	EU	South Africa	9.3	7
EU-South Africa	2000	South Africa	Belgium	3.1	-5.3
EU-South Africa	2000	South Africa	France	4.6	-6.1
EU-South Africa	2000	South Africa	Germany	3.8	-7.5
EU-South Africa	2000	South Africa	Italy	5.6	-7.6
EU-South Africa	2000	South Africa	Poland	4.5	-5.5

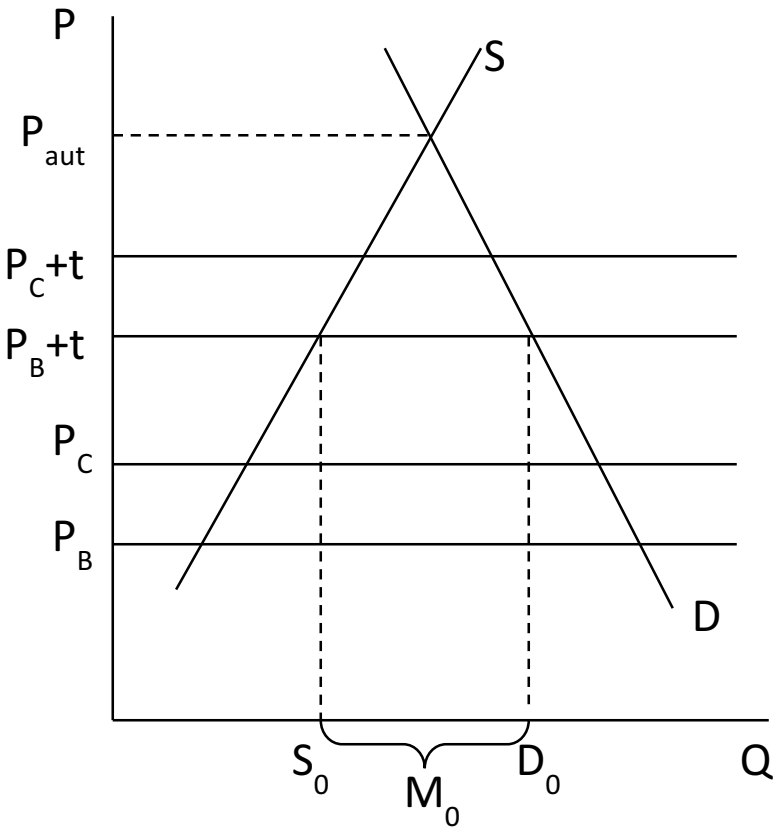
Table 2 (cont.)

FTA	Year	Country	From	Min%Dut	Pre-PostChg
EU-Morocco	2000	EU	Morocco	0.4	3.8
EU-Morocco	2000	Morocco	Belgium	12.6	1.8
EU-Morocco	2000	Morocco	France	15.9	-15
EU-Morocco	2000	Morocco	Germany	8.9	-17.5
EU-Morocco	2000	Morocco	Italy	12.1	-20
EU-Morocco	2000	Morocco	Poland	11.5	-14.8
EU-Israel	2000	EU	Israel	2.7	8
EU-Israel	2000	Israel	Belgium	3.8	8.5
EU-Israel	2000	Israel	France	3.6	9
EU-Israel	2000	Israel	Germany	3	8
EU-Israel	2000	Israel	Italy	3	7.4
EU-Israel	2000	Israel	Poland	4.3	9.4
EU-Mexico	2000	EU	Mexico	2.7	8
EU-Mexico	2000	Mexico	Belgium	3.8	8.5
EU-Mexico	2000	Mexico	France	3.6	9
EU-Mexico	2000	Mexico	Germany	3	8
EU-Mexico	2000	Mexico	Italy	3	7.4
EU-Mexico	2000	Mexico	Poland	4.3	9.4
Israel-Mexico	2000	Israel	Mexico	5.1	5.4
Israel-Mexico	2000	Mexico	Israel	2.2	-0.1
Macedonia-Turkey	2000	Macedonia	Turkey	21.1	
Macedonia-Turkey	2000	Turkey	Macedonia	5	30.9
New Zealand-Singapore	2001	New Zealand	Singapore	0	290.6
New Zealand-Singapore	2001	Singapore	New Zealand	0	-332.8
India-Sri Lanka	2001	India	Sri Lanka	20.7	-23.3
India-Sri Lanka	2001	Sri Lanka	India	28	-2.8
Jordan-US	2001	Jordan	US	2	-2.4
Jordan-US	2001	US	Jordan	0.9	71.1
Chile-Costa Rica	2002	Chile	Costa Rica	41.5	-4.6
Chile-Costa Rica	2002	Costa Rica	Chile	6.8	-2.4
Chile-El Salvador	2002	Chile	El Salvador	69.6	-4.5
Chile-El Salvador	2002	El Salvador	Chile	2.5	-3.9
Canada-Costa Rica	2002	Canada	Costa Rica	3.3	-1.7
Canada-Costa Rica	2002	Costa Rica	Canada	27.7	-2.5
Japan-Singapore	2002	Japan	Singapore	25.5	27.9
Japan-Singapore	2002	Singapore	Japan	0	-220.2

Table 2 (cont.)

FTA	Year	Country	From	Min% Dut	Pre-PostChg
El Salvador-Panama	2003	El Salvador	Panama	3.8	2
El Salvador-Panama	2003	Panama	El Salvador	5.7	-2
China-Hong Kong	2003	China	Hong Kong	56.3	-13.9
China-Hong Kong	2003	Hong Kong	China	0	
Bosnia-Herzegovina-Turkey	2003	Bosnia-Herzegovina	Turkey	68	2.8
Bosnia-Herzegovina-Turkey	2003	Turkey	Bosnia-Herzegovina	0.6	25.1
Australia-Singapore	2003	Australia	Singapore	0.1	-6.1
Australia-Singapore	2003	Singapore	Australia	0	-158.7
China-Macao	2003	China	Macao	47.3	-15.6
China-Macao	2003	Macao	China	0	

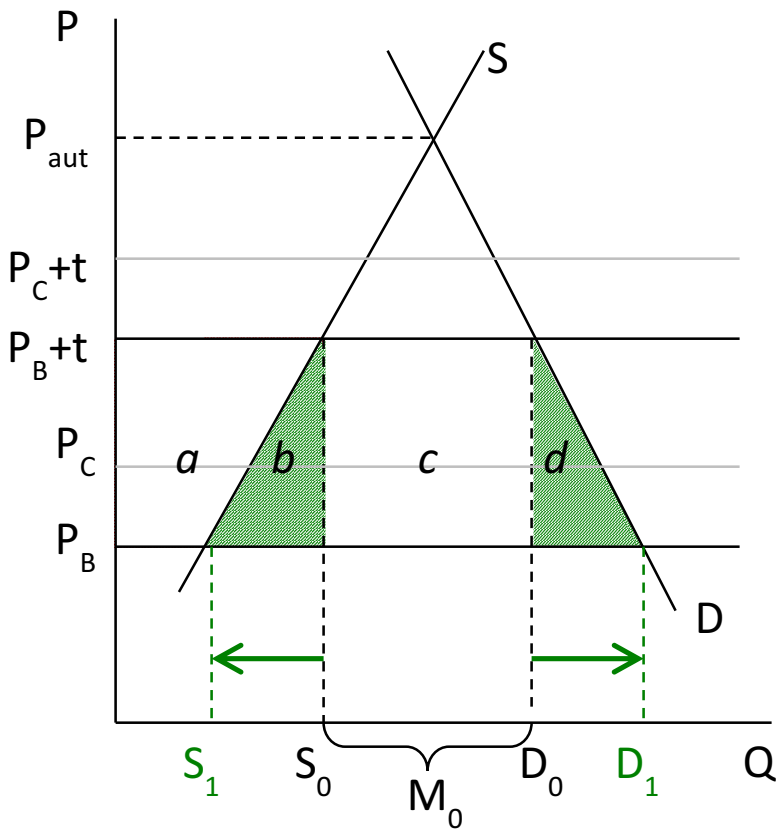
Figure 1
No FTA, tariff t on both countries B and C



Without FTA

Since P_B+t < P_C+t Home imports only from B

Figure 2
FTA partner is low-cost country, B



FTA with B

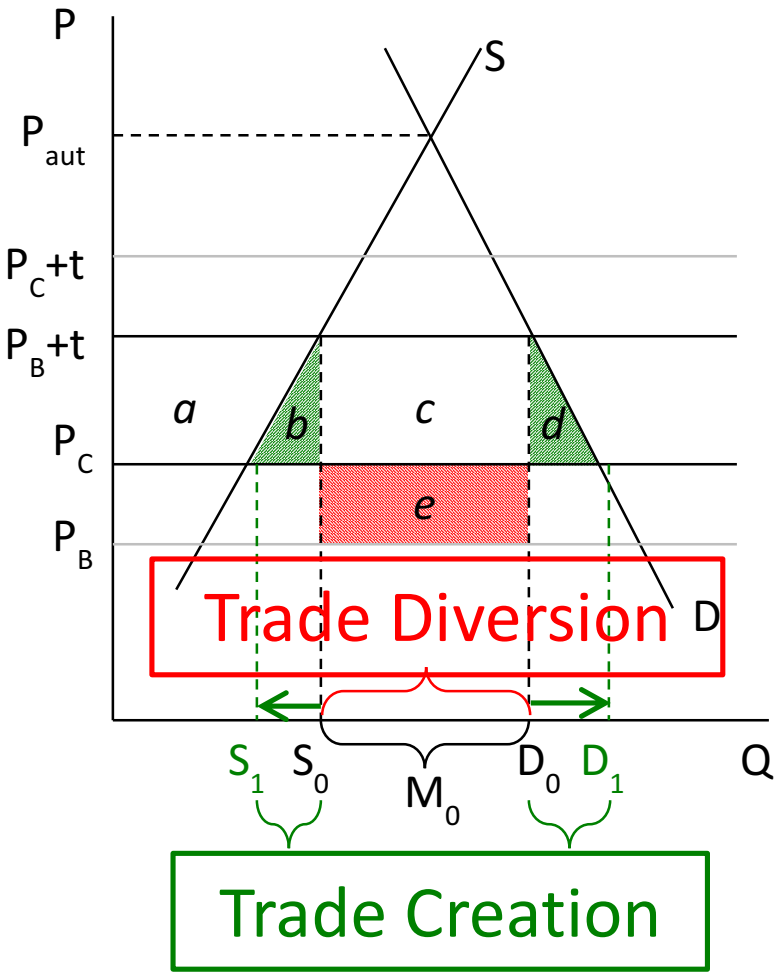
- Since $P_B < P_C$+t Home (A) still imports only from B
- Country C plays no role

Welfare in Home Country A

Suppliers lose	–a
Demanders gain	+(a+b+c+d)
Government loses	–c
Country gains	+(b+d)

Same as Free Trade

Figure 3
FTA partner is high-cost country, C



FTA with C

- Since $P_C < P_B$+t Home (A) now imports only from C

Welfare in Home Country A

Suppliers lose –a
Demanders gain +(a+b+c+d)
Government loses –(c+e)
Country –e+(b+d)
[loses if e>(b+d)]

Figure 4

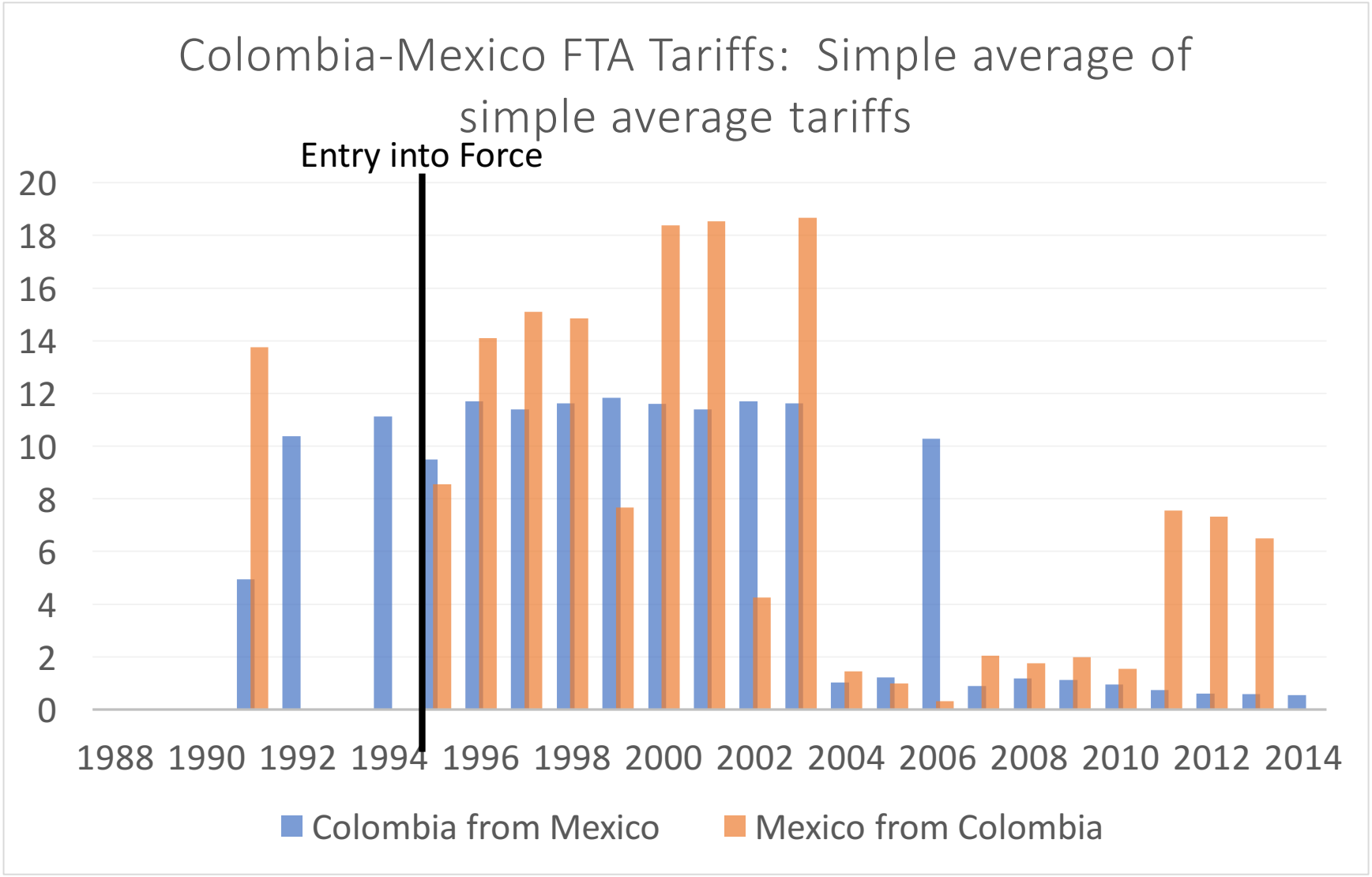

Colombia-Mexico FTA Tariffs: Simple average of simple average tariffs
Entry into Force
20
18
16
14
12
10
8
6
4
2
0
1988 1990 1992 1994 1996 1998 2000 2002 2004 2006 2008 2010 2012 2014
Colombia from Mexico
Mexico from Colombia

Figure 5

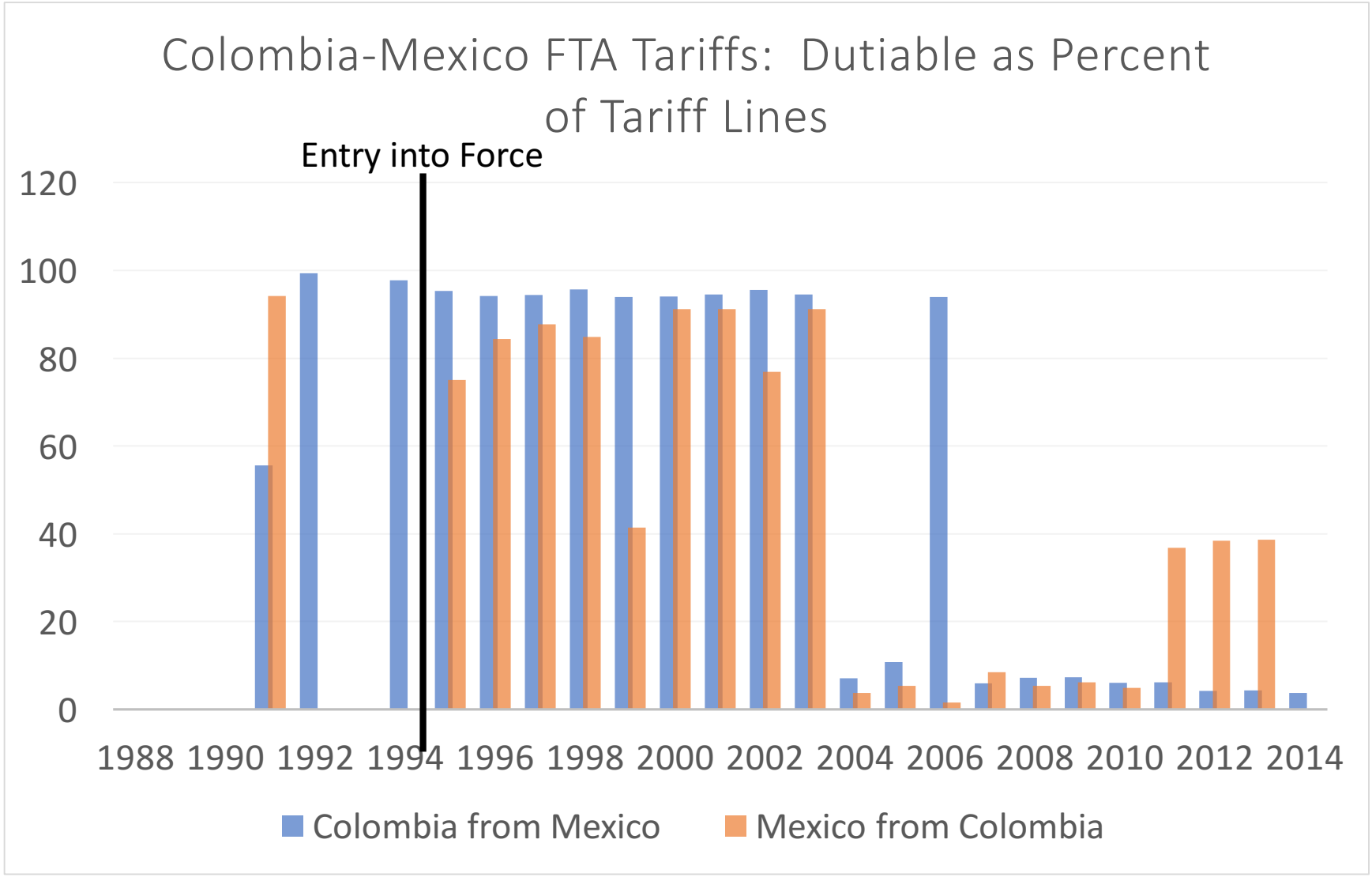

Colombia-Mexico FTA Tariffs: Dutiable as Percent of Tariff Lines
Entry into Force
120
100
80
60
40
20
0
1988 1990 1992 1994 1996 1998 2000 2002 2004 2006 2008 2010 2012 2014
Colombia from Mexico
Mexico from Colombia

Figure 6

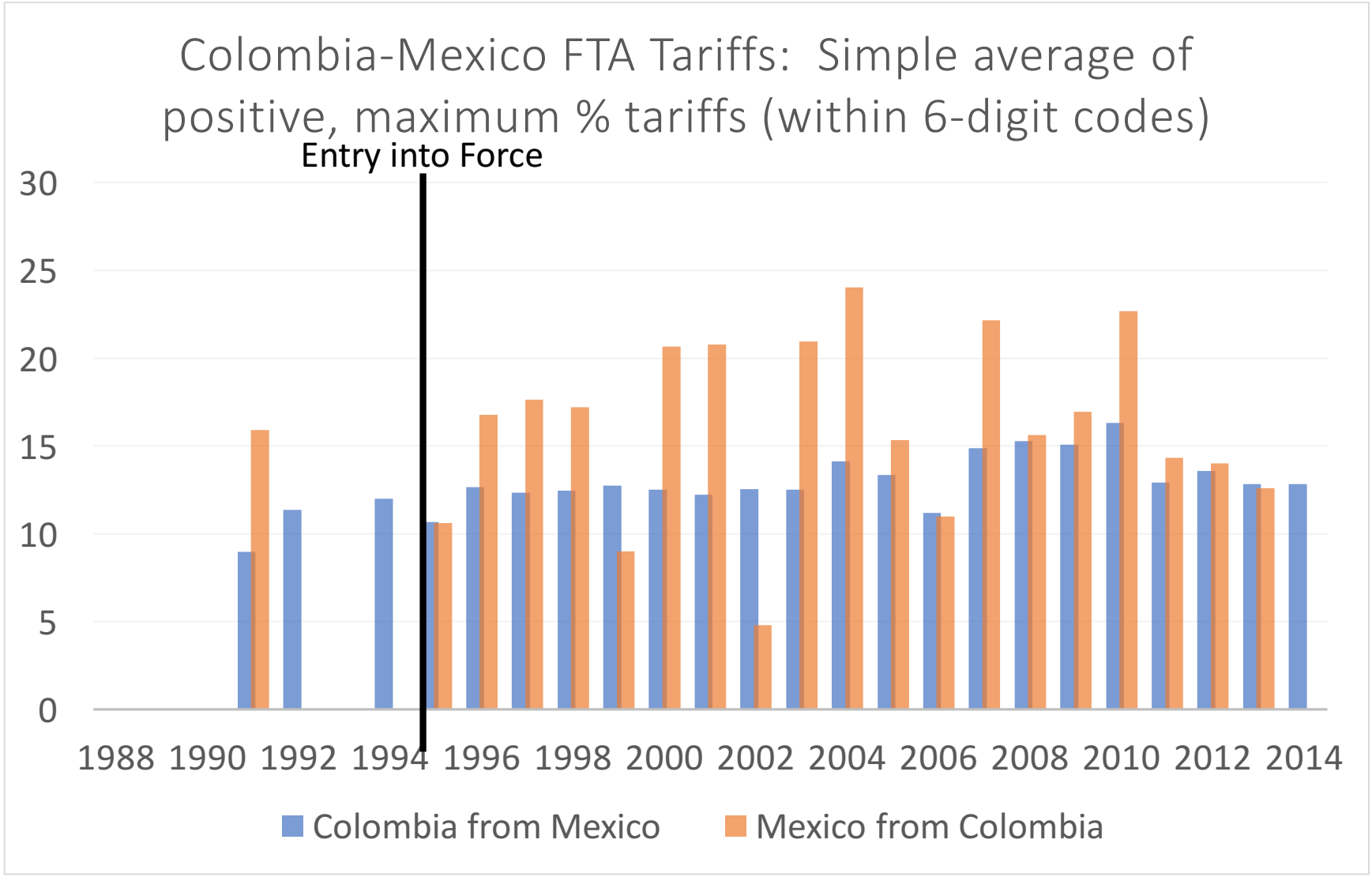
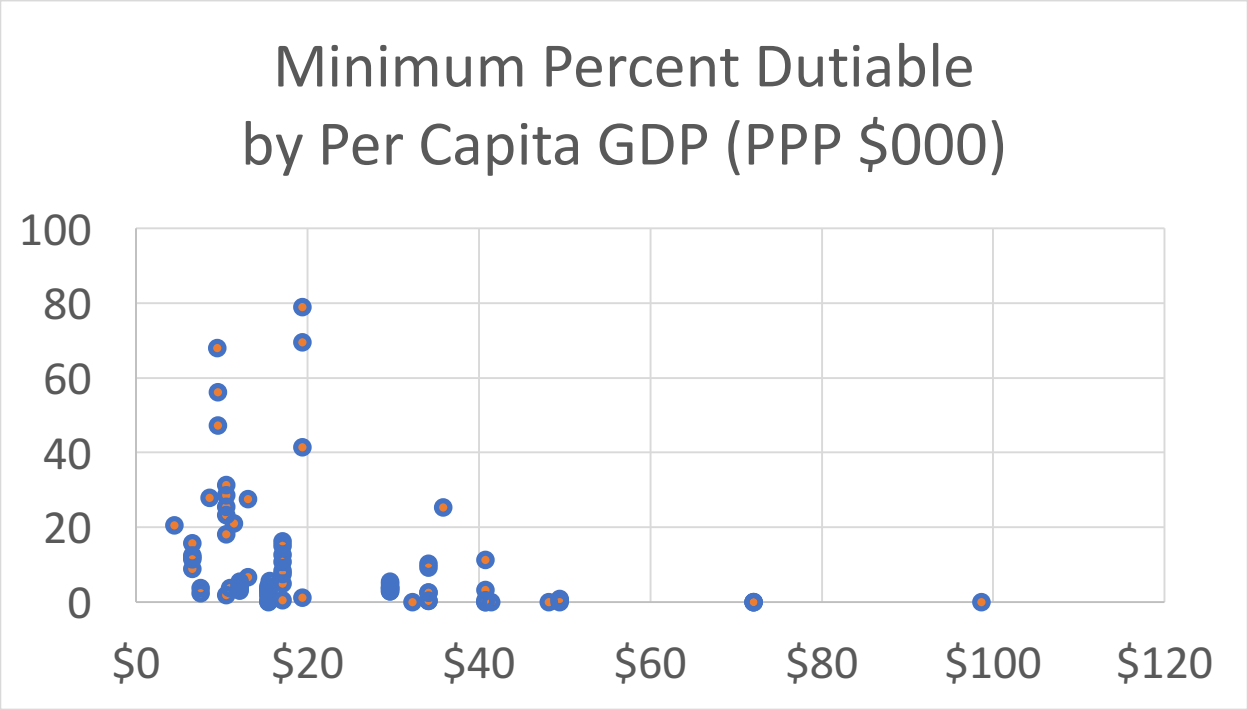

Colombia-Mexico FTA Tariffs: Simple average of positive, maximum % tariffs (within 6-digit codes)
Entry into Force
30
25
20
15
10
5
0
1988 1990 1992 1994 1996 1998 2000 2002 2004 2006 2008 2010 2012 2014
Colombia from Mexico
Mexico from Colombia

Figure 7
The Role of Per Capita Income



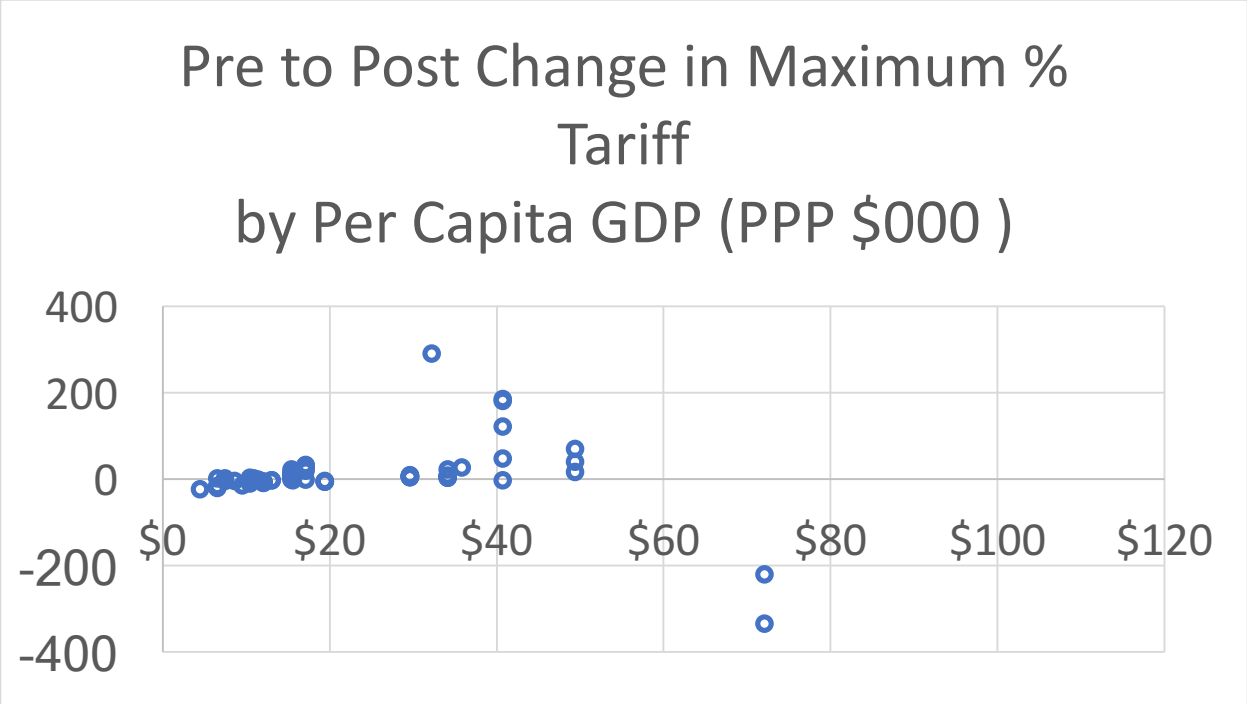
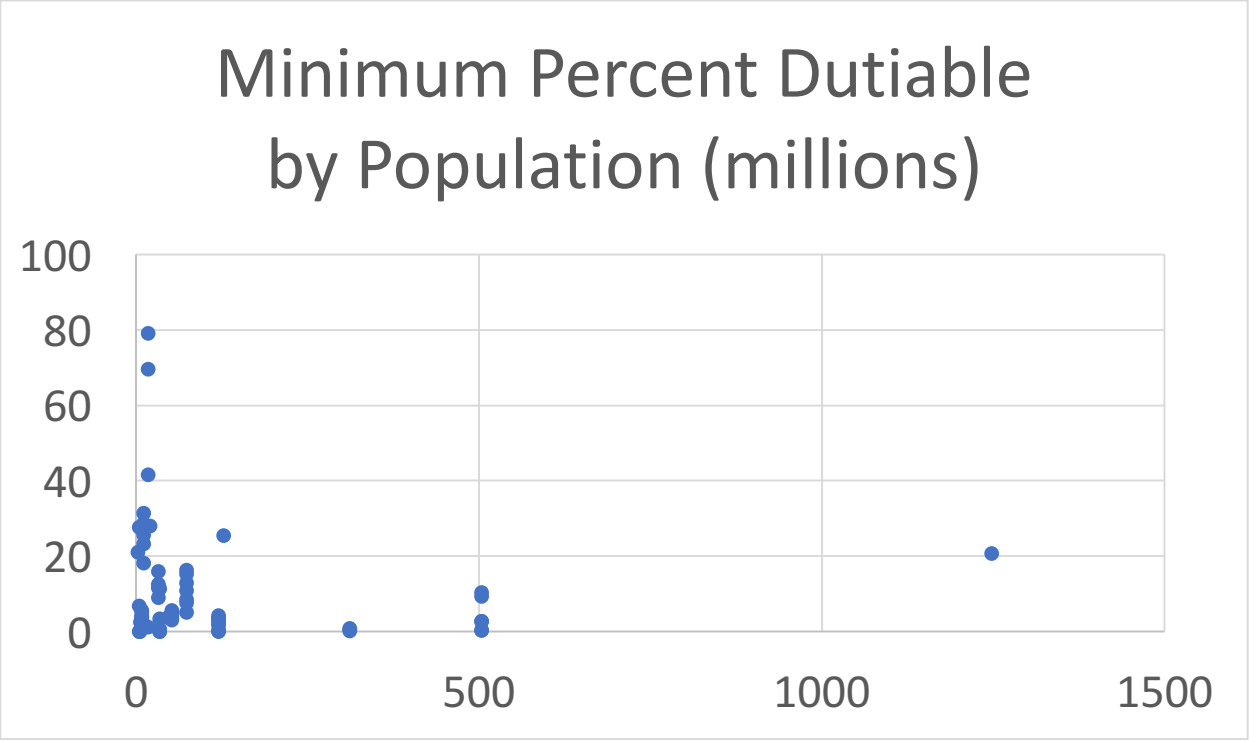


Figure 8
The Role of Population



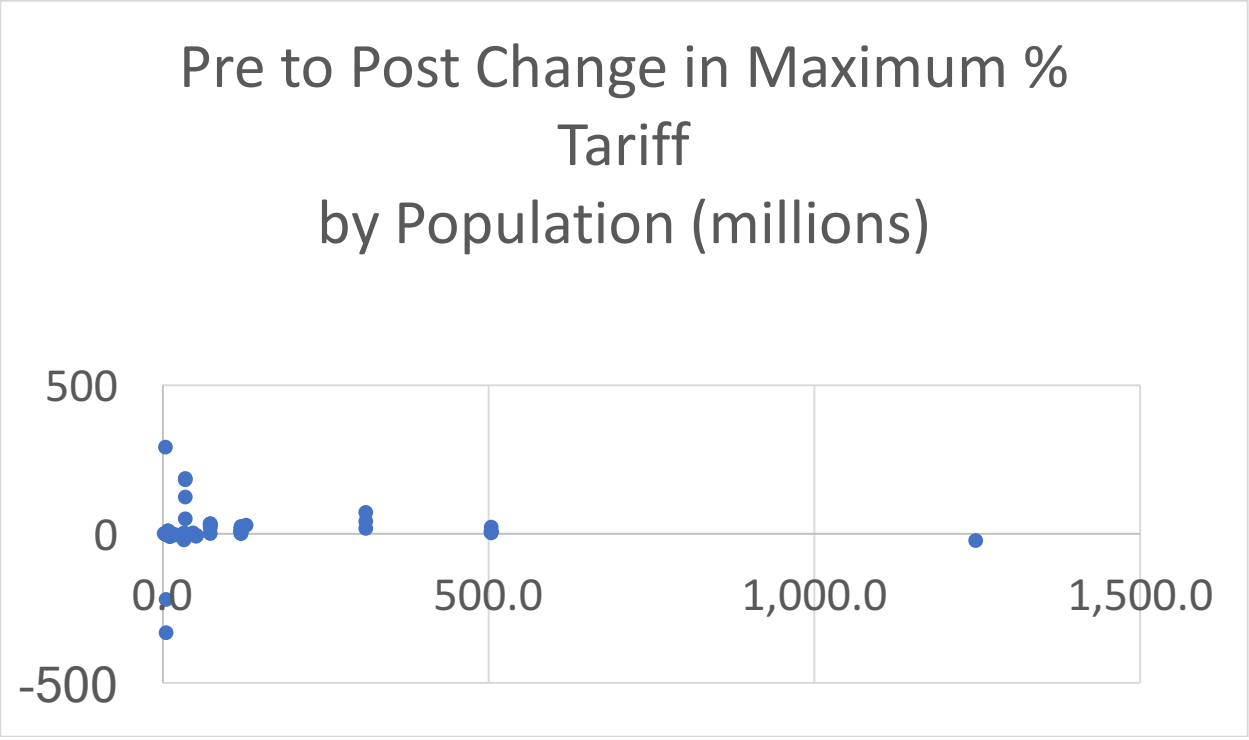
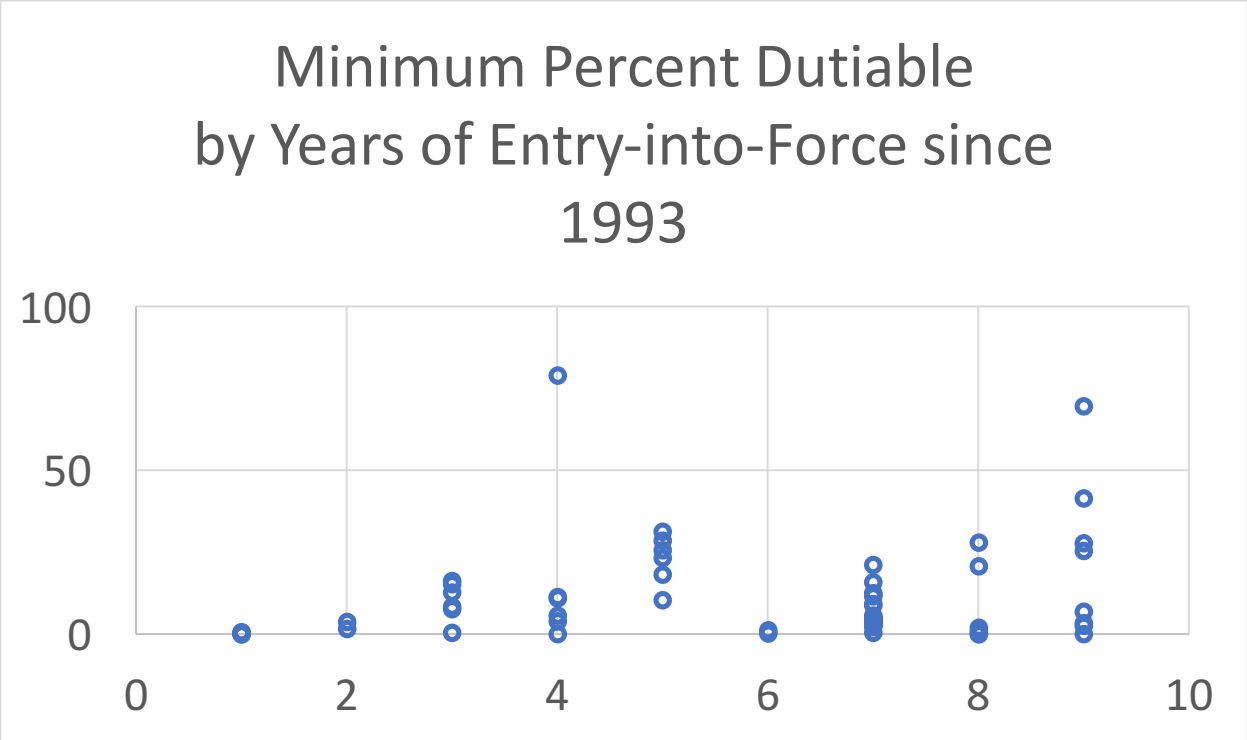


Figure 9
The Role of Time



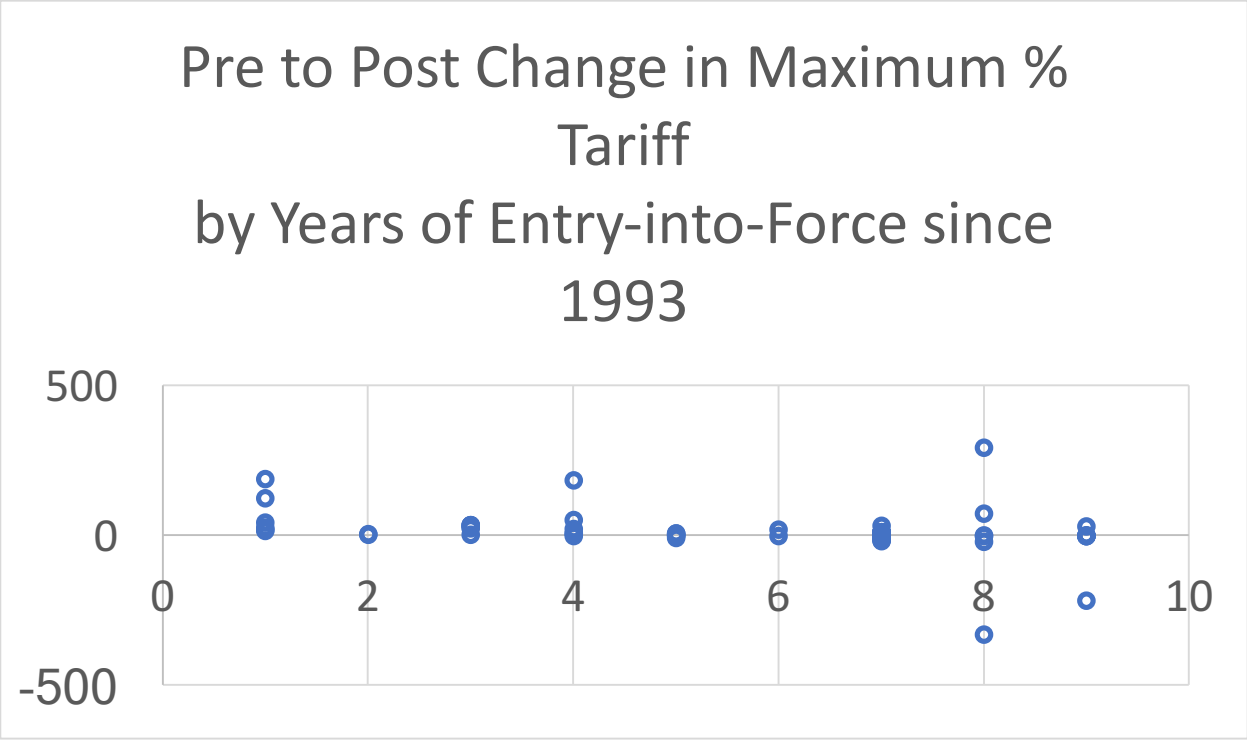
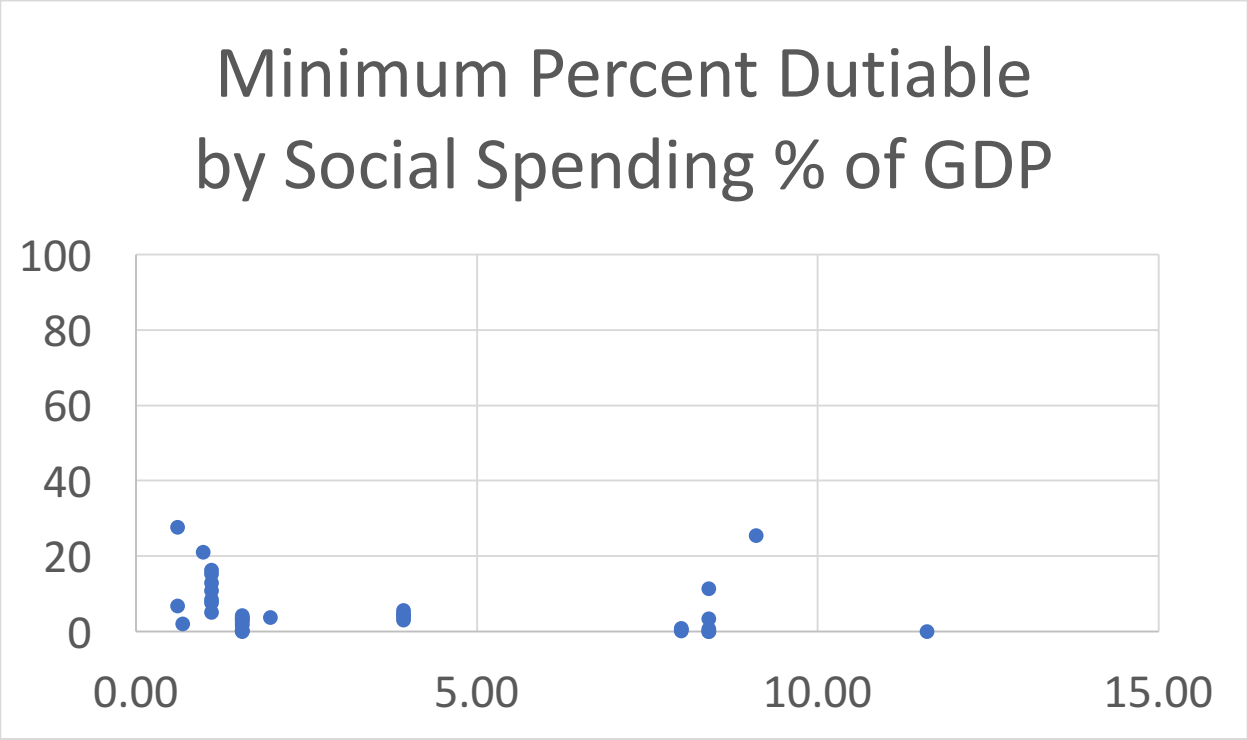
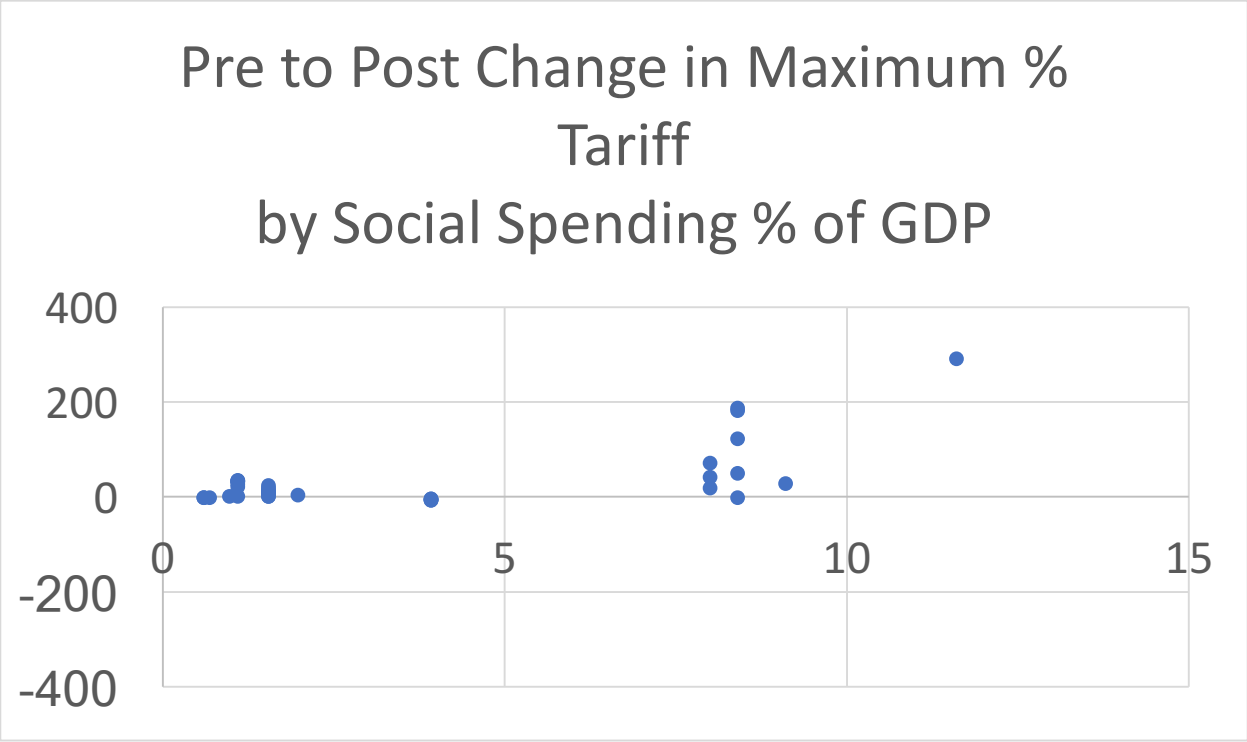


Figure 10
The Role of Social Policy





Sensitive Sectors in Free Trade Agreements: Appendix

Alan V. Deardorff

May 17, 2017

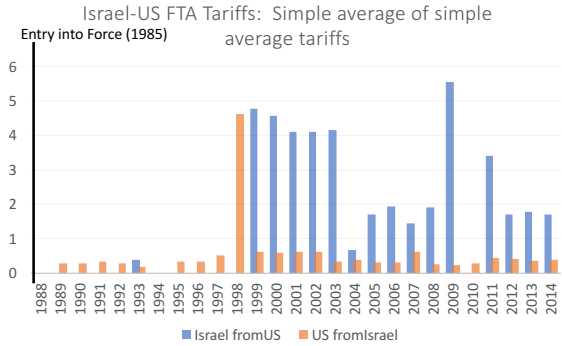
- The following pages show, for each of the FTAs that I have processed from the UNCTAD TRAINS database, the measures for each reported year of:
  - Simple average across 6-digit sectors of simple average tariffs within those 6-digit (Harmonized System) categories.
  - The number of dutiable tariff lines as a percentage of all tariff lines. Thus the percentage of positive tariffs.
  - The simple average across only those 6-digit sectors with positive tariffs of the maximum tariff within each s.ector

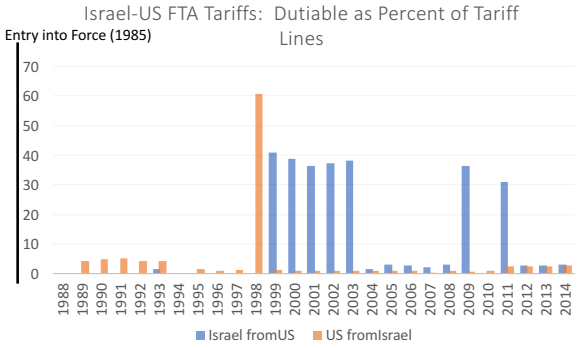
- In each case, the first slide on the page identifies the FTA, the year it entered into force, and the following two measures for each* direction of bilateral trade within the FTA:
  - The minimum across all reported years in the percent of dutiable tariff lines.
  - The change from years before to years after the entry into force of the FTA in the maximum average positive tariff.

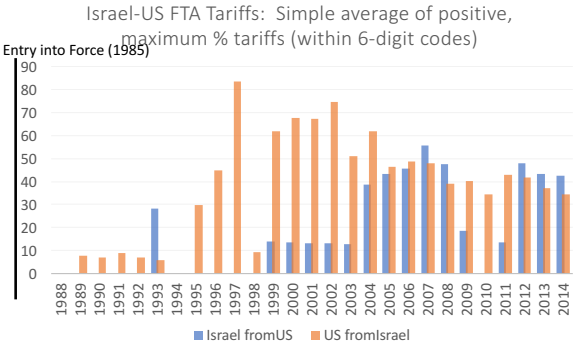
*For FTAs of the EU with other countries, I report only a selection of those other countries' tariff on exports from EU members.

Israel-US FTA*
1988

*Not included in the paper due to lack of data from before the FTA.

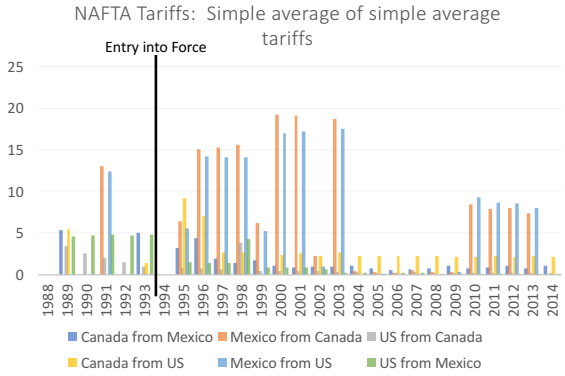


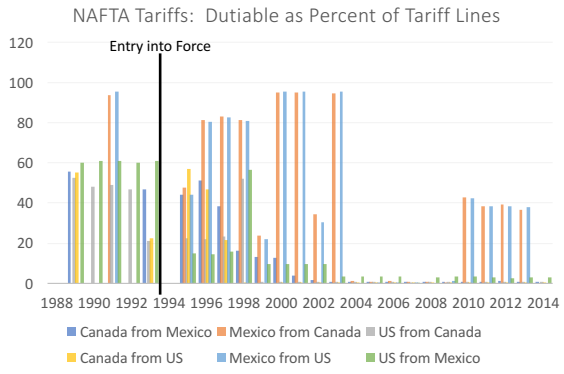


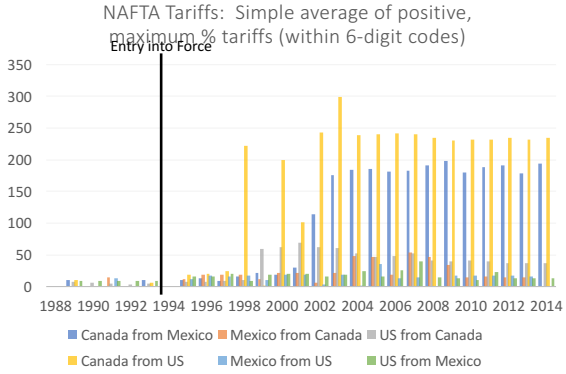


NAFTA 1994

	Min % Dutiable	Pre-Post Change in Max Positive Tariff
Canada from Mexico	0.6	112.9
Mexico from Canada	0.4	9.0
US from Canada	0.1	35.6
Canada from US	0.0	177.9
Mexico from US	0.0	2.0
US from Mexico	0.5	9.6

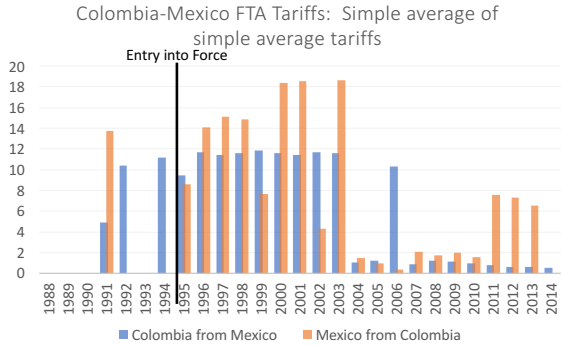


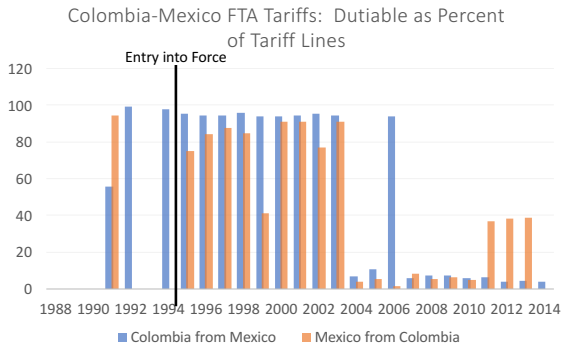


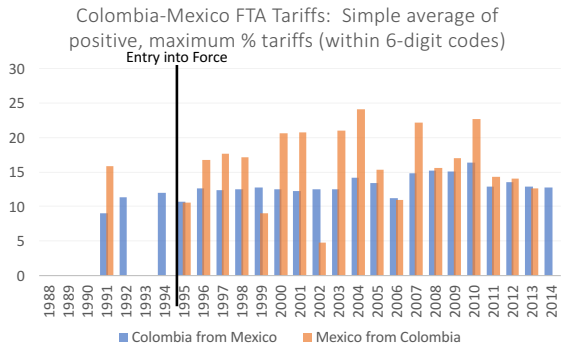


Colombia-Mexico FTA 1995

	Min % Dutiable	Pre-Post Change in Max Positive Tariff
Colombia	3.8	2.5
Mexico	1.6	0.6

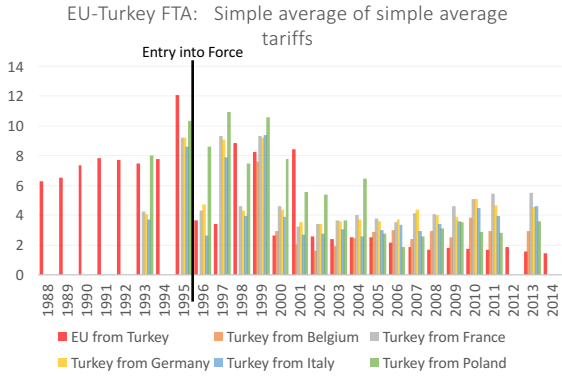


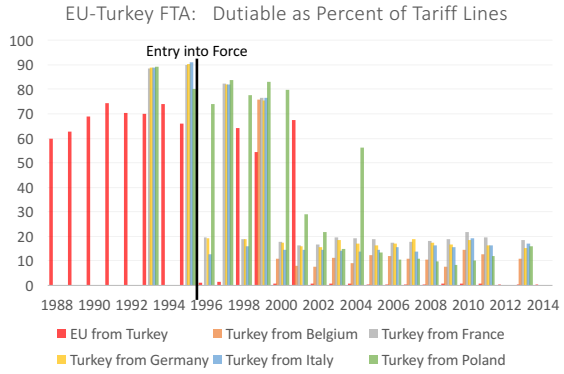


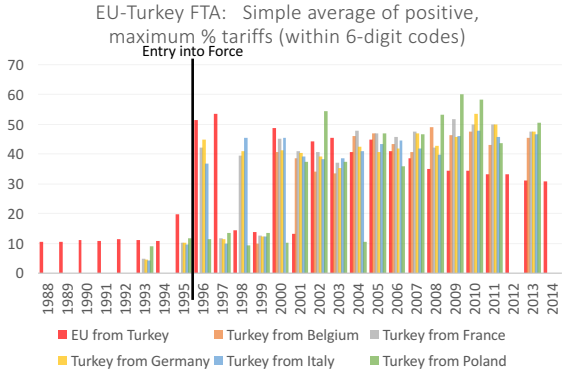


EU-Turkey CU 1996

	Min % Dutiable	Pre-Post Change in Max Positive Tariff
EU from Turkey	0.4	23.0
Turkey from Belgium	7.6	
Turkey from France	16.3	33.4
Turkey from Germany	15.2	32.1
Turkey from Italy	12.8	32.2
Turkey from Poland	8.5	25.9

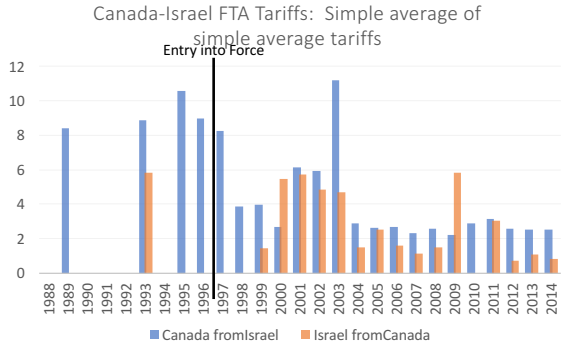


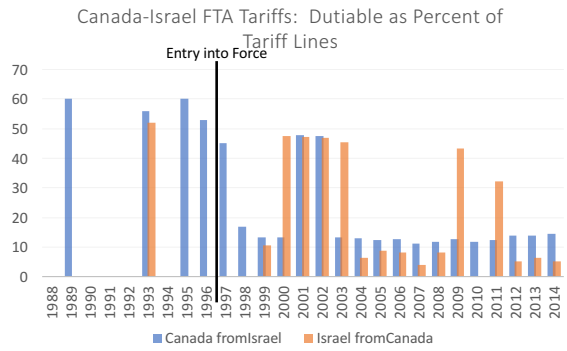


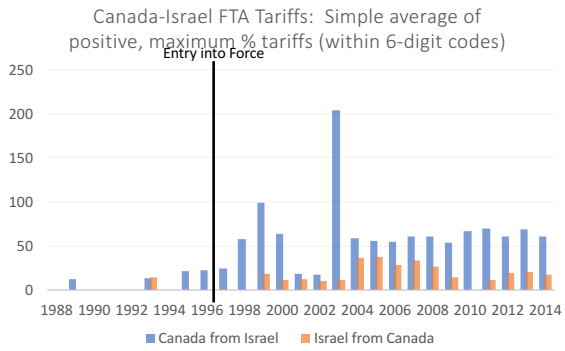


Canada-Israel FTA 1997

	Min % Dutiable	Pre-Post Change in Max Positive Tariff
Canada	11.3	49.1
Israel	3.9	6.0

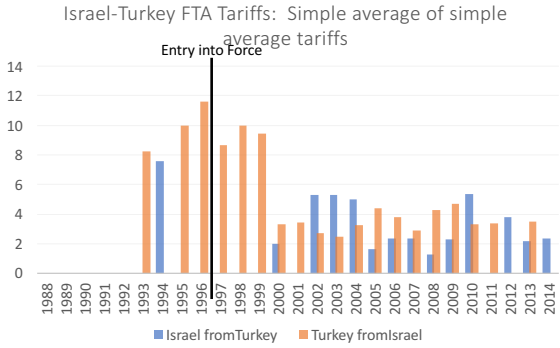


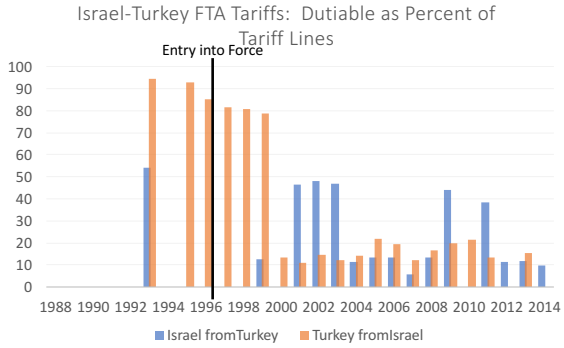


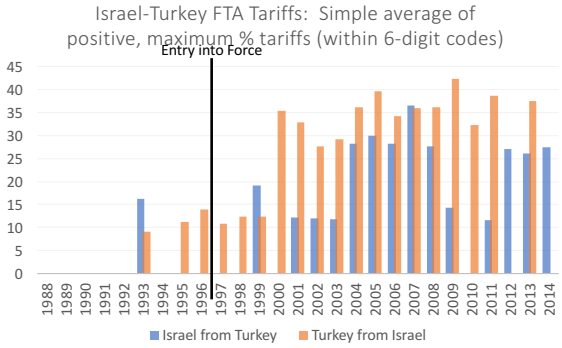


Israel-Turkey FTA 1997

	Min % Dutiable	Pre-Post Change in Max Positive Tariff
Israel	5.6	6.0
Turkey	10.9	20.8

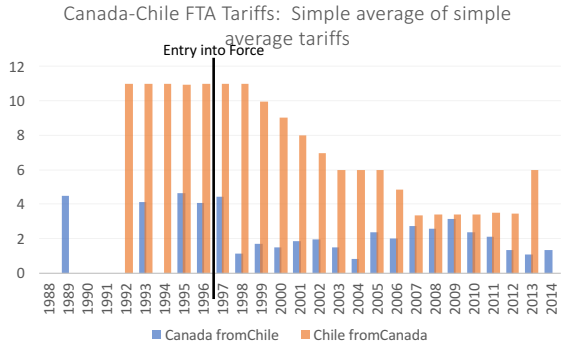


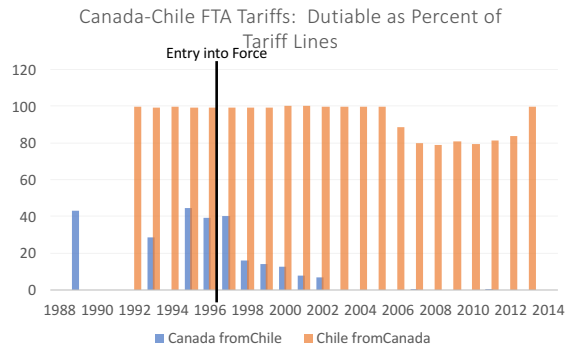


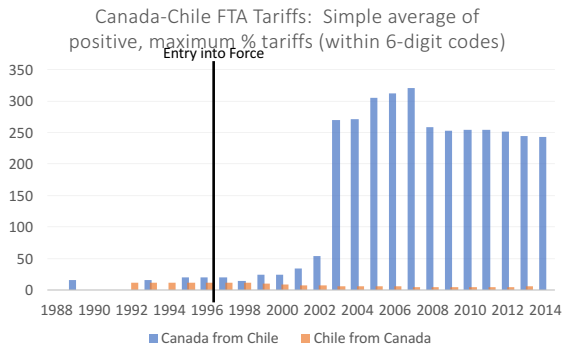


Canada-Chile FTA 1997

	Min % Dutiable	Pre-Post Change in Max Positive Tariff
Canada	0.0	181.6
Chile	79.1	-4.5

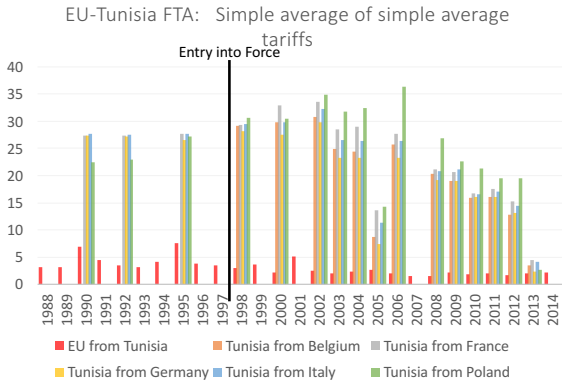


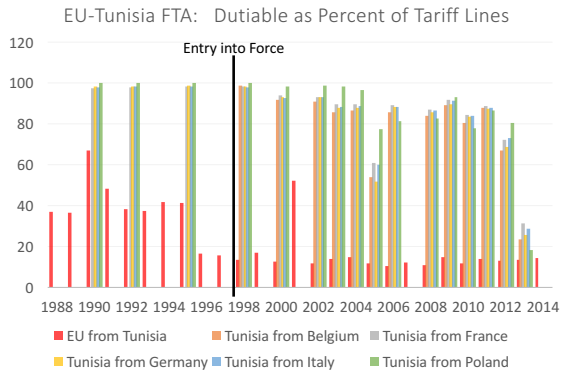


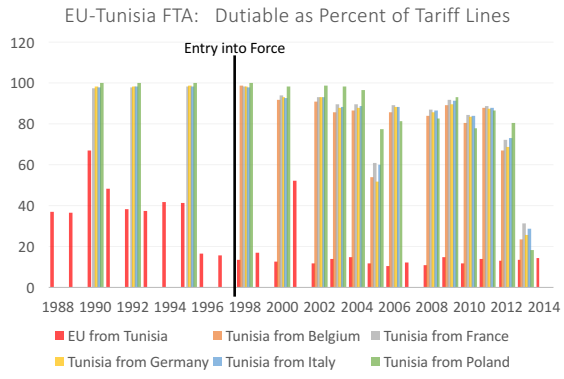


EU-Tunisia FTA 1998

	Min % Dutiable	Pre-Post Change in Max Positive Tariff
EU from Tunisia	10.4	4.0
Tunisia from Belgium	23.3	
Tunisia from France	31.4	-0.6
Tunisia from Germany	25.6	-4.1
Tunisia from Italy	28.6	-2.0
Tunisia from Poland	18.2	4.1

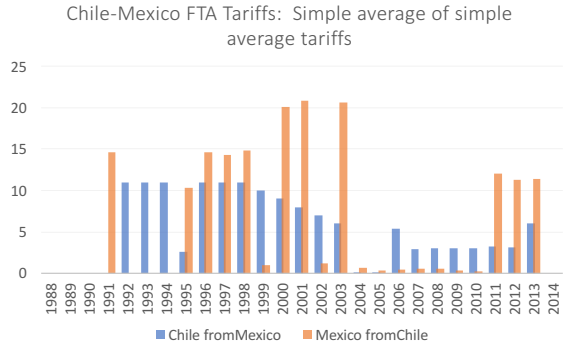


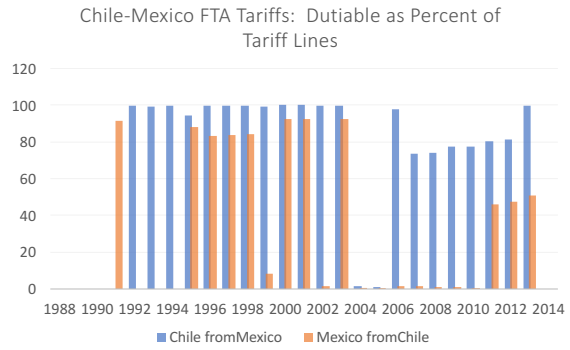


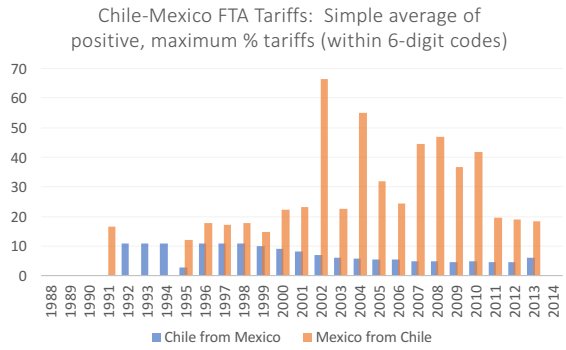


Chile-Mexico FTA 1999

	Min % Dutiable	Pre-Post Change in Max Positive Tariff
Chile	1.2	-4.0
Mexico	0.2	17.5

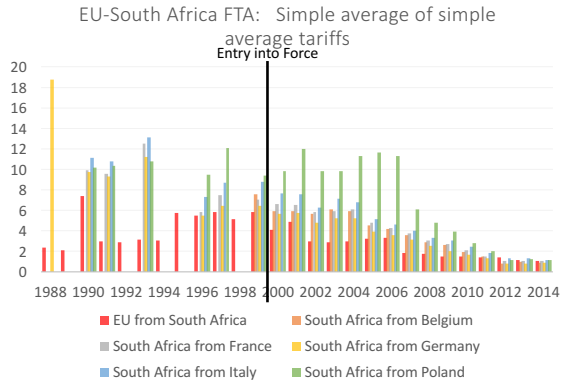


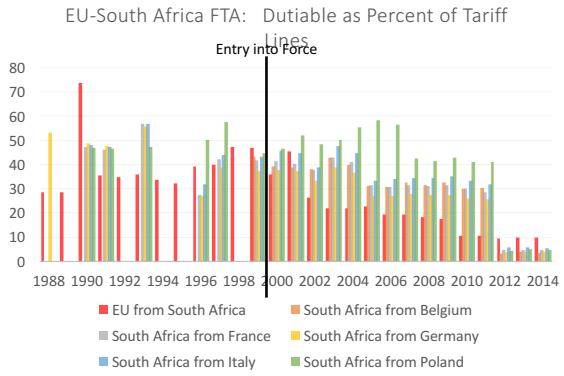


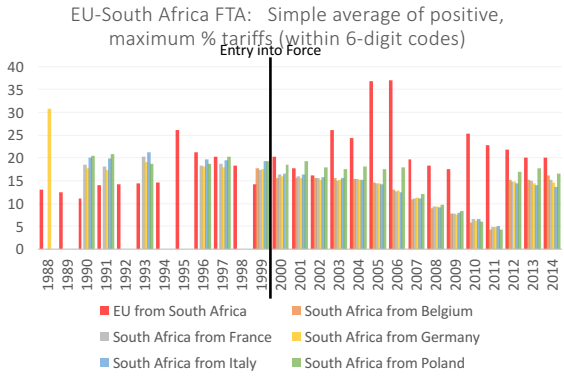


EU-South Africa FTA 2000

	Min % Dutiable	Pre-Post Change in Max Positive Tariff
EU from South Africa	9.3	7.0
South Africa from Belgium	3.1	-5.3
South Africa from France	4.6	-6.1
South Africa from Germany	3.8	-7.5
South Africa from Italy	5.6	-7.6
South Africa from Poland	4.5	-5.5

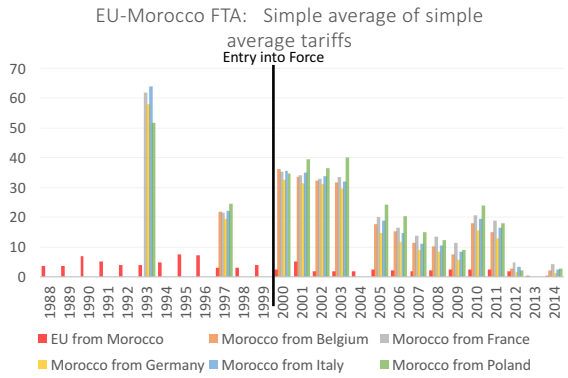


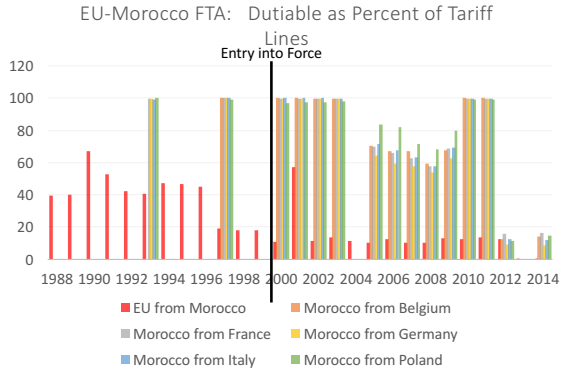


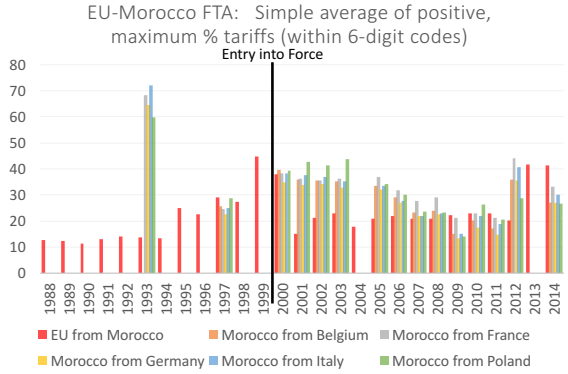


EU-Morocco FTA 2000

	Min % Dutiable	Pre-Post Change in Max Positive Tariff
EU from Morocco	0.4	3.8
Morocco from Belgium	12.6	1.8
Morocco from France	15.9	-15.0
Morocco from Germany	8.9	-17.5
Morocco from Italy	12.1	-20.0
Morocco from Poland	11.5	-14.8

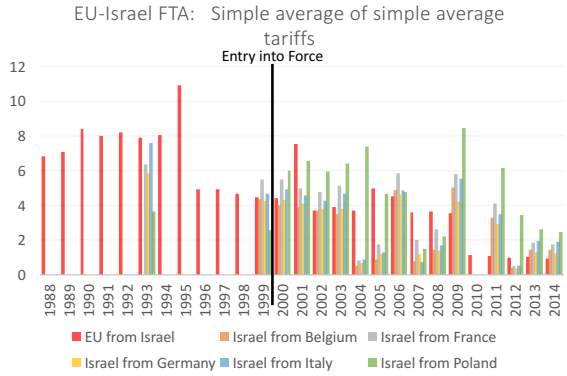


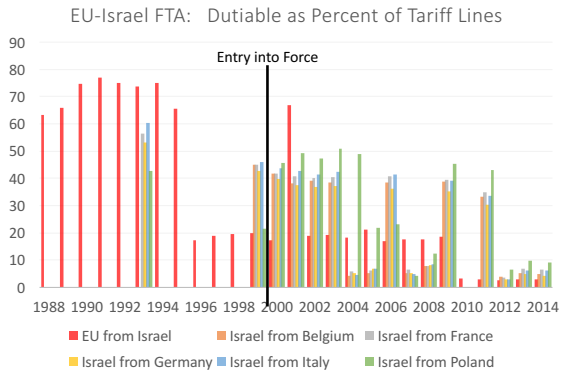


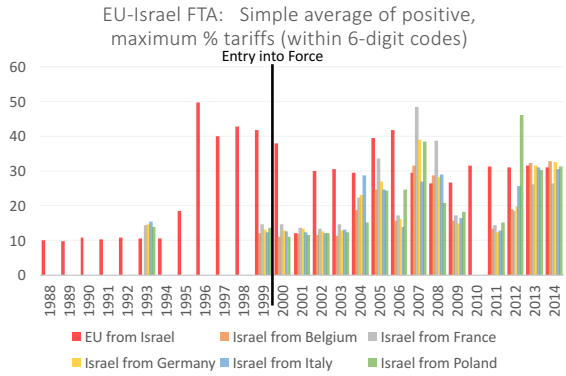


EU-Israel FTA 2000

	Min % Dutiable	Pre-Post Change in Max Positive Tariff
EU from Israel	2.7	8.0
Israel from Belgium	3.8	8.5
Israel from France	3.6	9.0
Israel from Germany	3.0	8.0
Israel from Italy	3.0	7.4
Israel from Poland	4.3	9.4

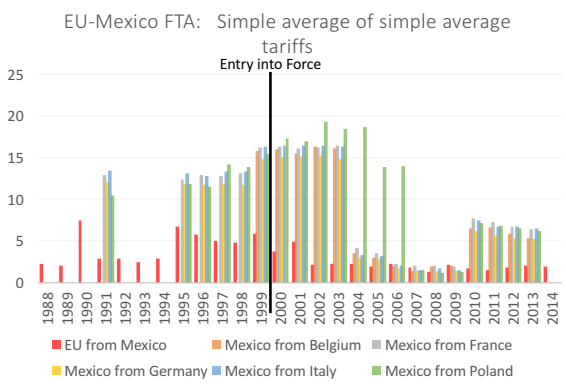


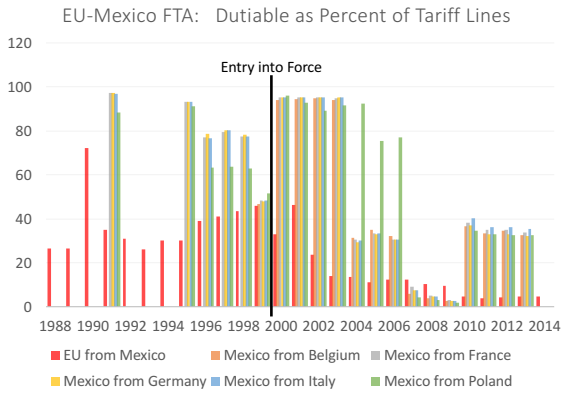


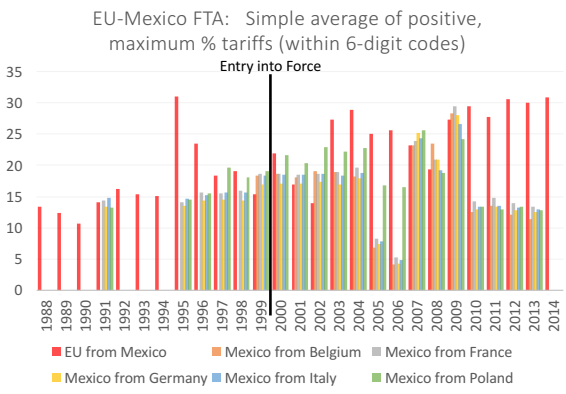


EU-Mexico FTA 2000

	Min % Dutiable	Pre-Post Change in Max Positive Tariff
EU from Mexico	4.0	8.4
Mexico from Belgium	2.7	-2.2
Mexico from France	2.9	1.2
Mexico from Germany	2.5	1.4
Mexico from Italy	2.7	0.4
Mexico from Poland	1.7	2.0

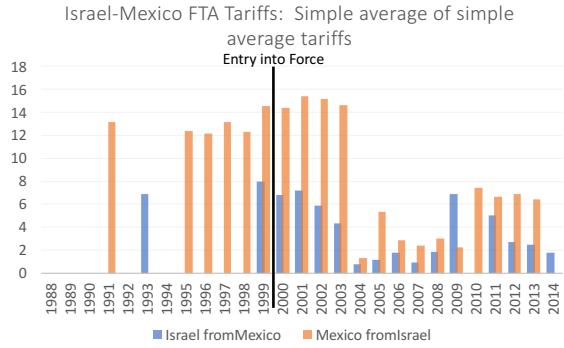


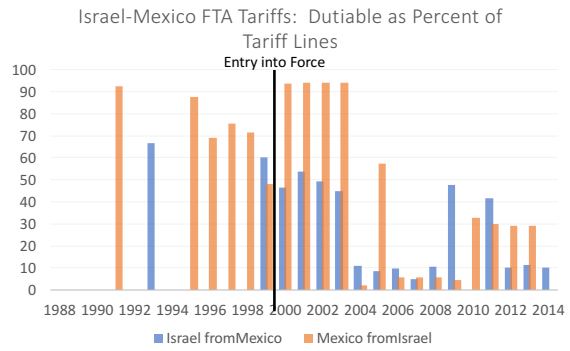


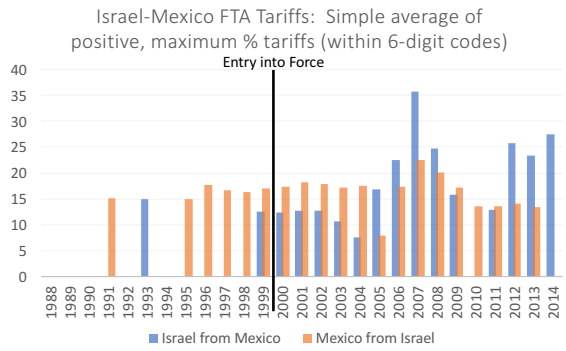


Israel-Mexico FTA 2000

	Min % Dutiable	Pre-Post Change in Max Positive Tariff
Israel	5.1	5.4
Mexico	2.2	-0.1

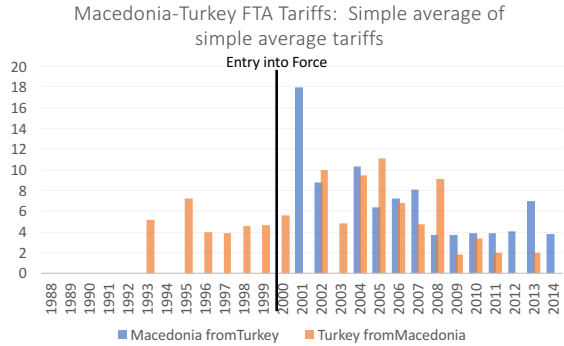


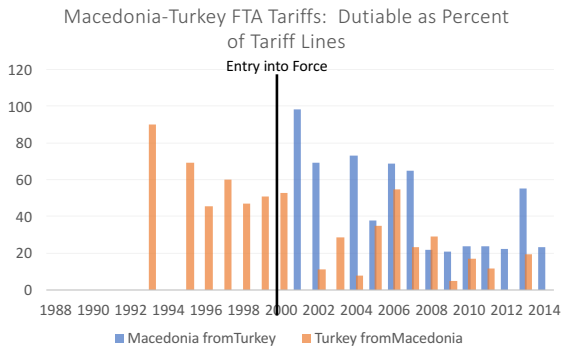


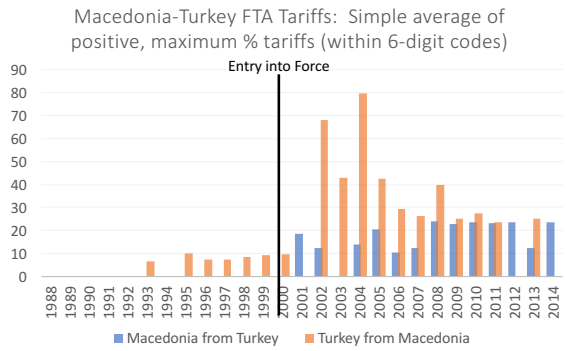


Macedonia-Turkey FTA 2000

	Min % Dutiable	Pre-Post Change in Max Positive Tariff
Macedonia	21.1	
Turkey	5.0	30.9

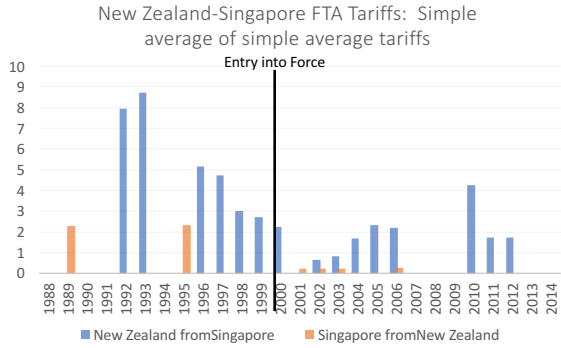


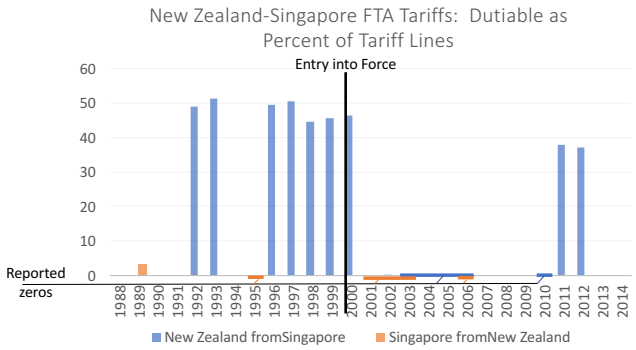


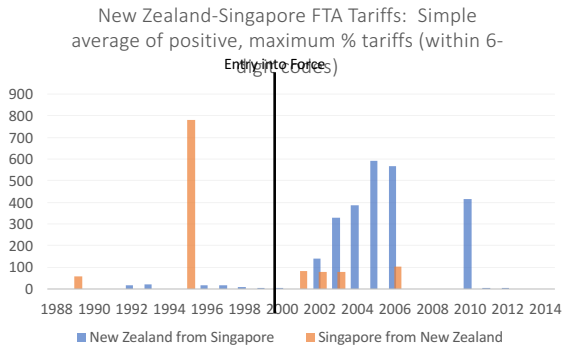


New Zealand-Singapore FTA 2000

	Min % Dutiable	Pre-Post Change in Max Positive Tariff
New Zealand	0.0	290.6
Singapore	0.0	-332.8

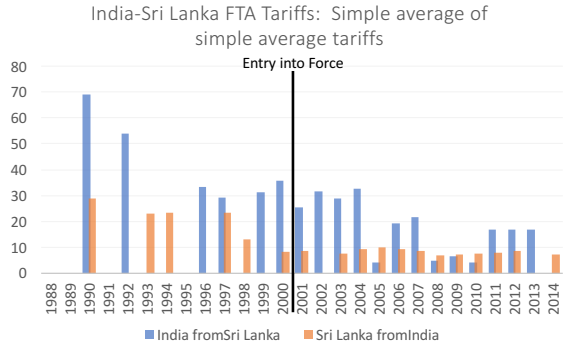


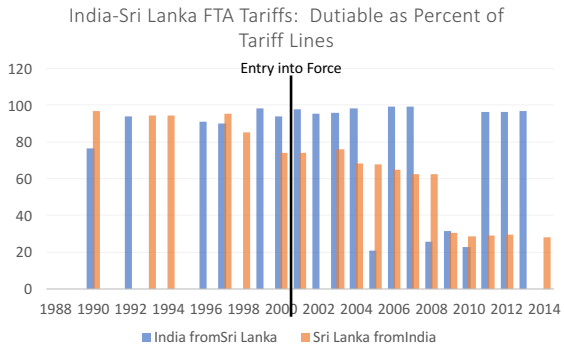


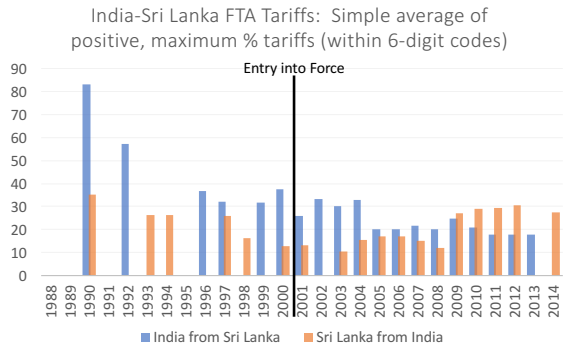


India-Sri Lanka FTA 2001

	Min % Dutiable	Pre-Post Change in Max Positive Tariff
India	20.7	-23.3
Sri Lanka	28.0	-2.8

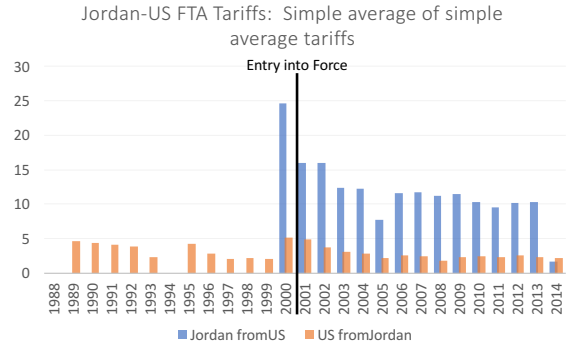


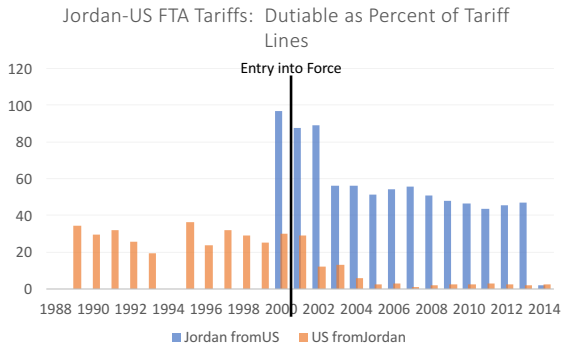


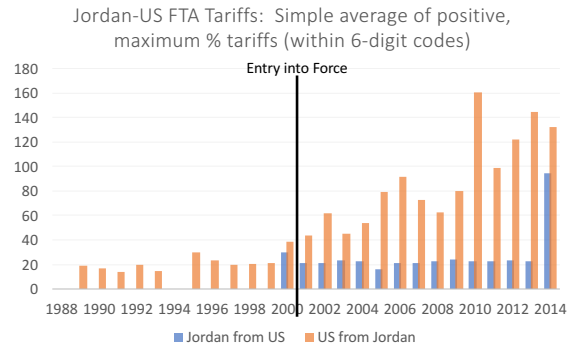


Jordan-US FTA 2001

	Min % Dutiable	Pre-Post Change in Max Positive Tariff
Jordan	2.0	-2.4
US	0.9	71.1

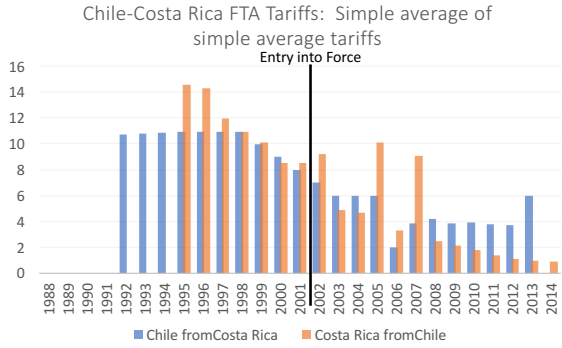


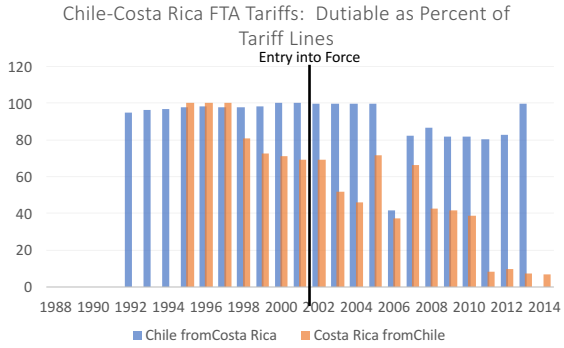


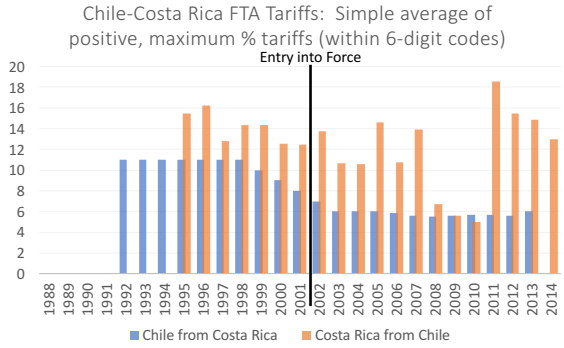


Chile-Costa Rica FTA 2002

	Min % Dutiable	Pre-Post Change in Max Positive Tariff
Chile	41.5	-4.6
Costa Rica	6.8	-2.4

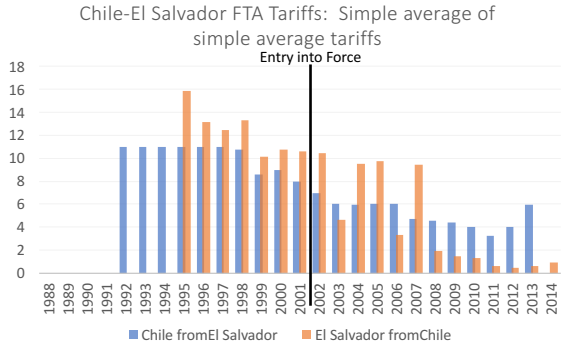


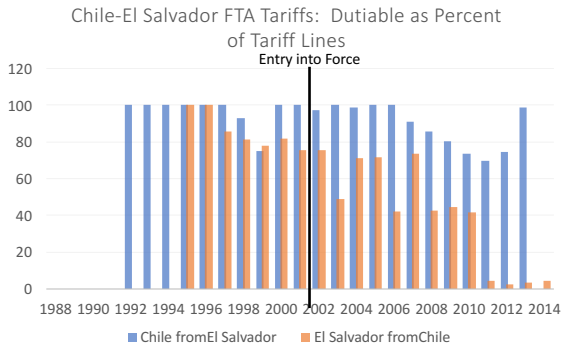


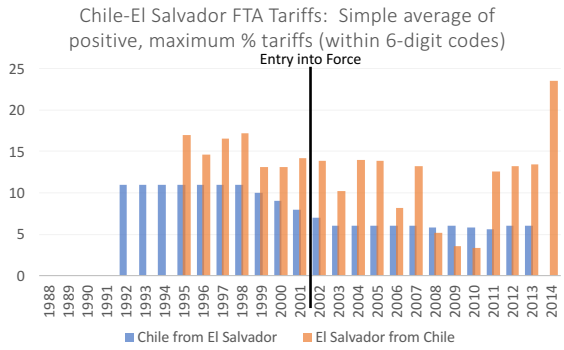


Chile-El Salvador FTA 2002

	Min % Dutiable	Pre-Post Change in Max Positive Tariff
Chile	69.6	-4.5
El Salvador	2.5	-3.9

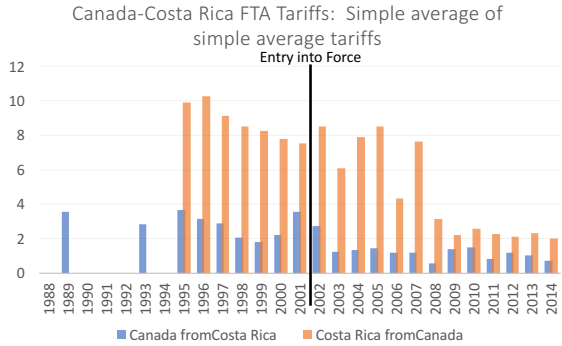


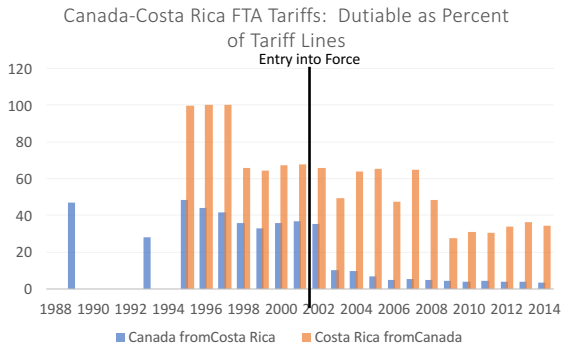


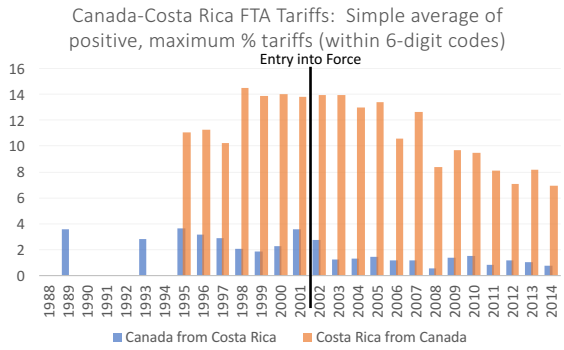


Canada-Costa Rica FTA 2002

	Min % Dutiable	Pre-Post Change in Max Positive Tariff
Canada	3.3	-1.7
Costa Rica	27.7	-2.5

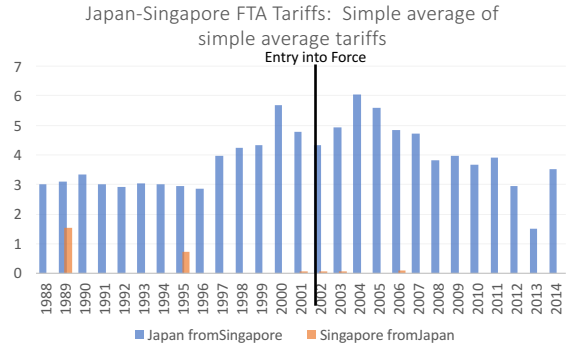


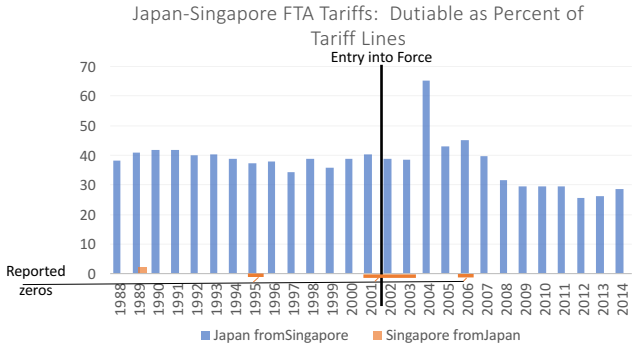


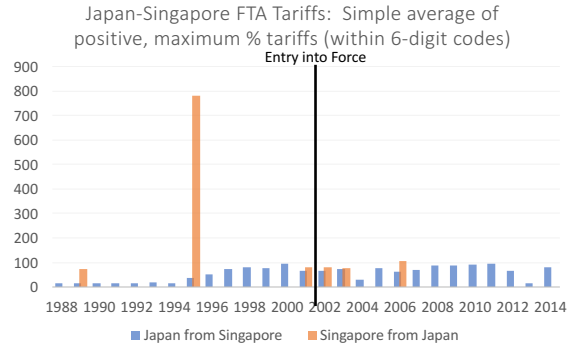


Japan-Singapore FTA 2002

	Min % Dutiable	Pre-Post Change in Max Positive Tariff
Japan	25.5	27.9
Singapore	0.0	-220.2

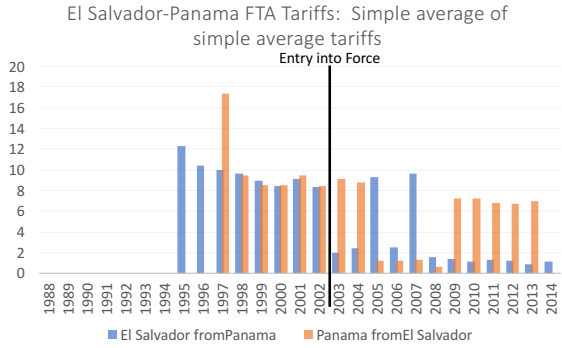


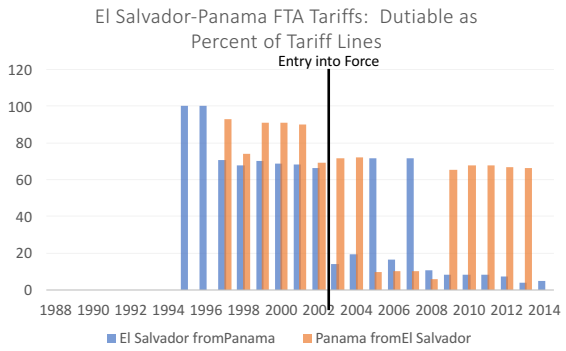


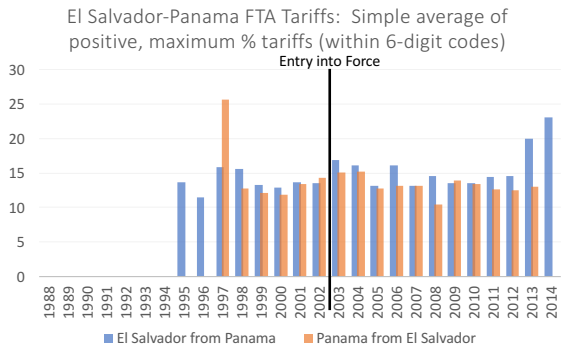


El Salvador-Panama FTA 2003

	Min % Dutiable	Pre-Post Change in Max Positive Tariff
El Salvador	3.8	2.0
Panama	5.7	-2.0

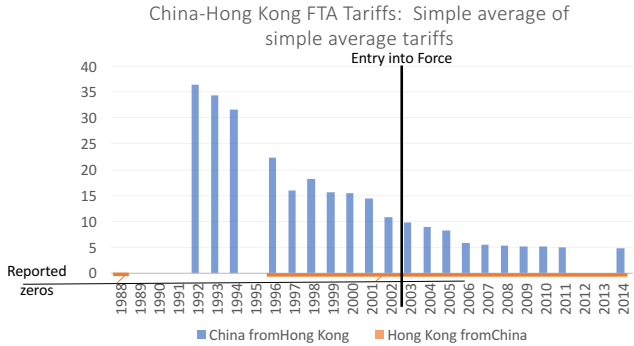


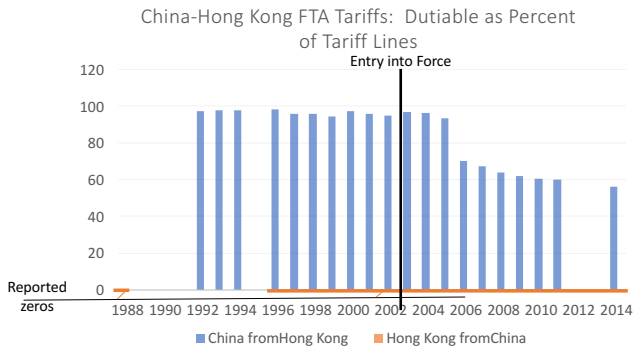


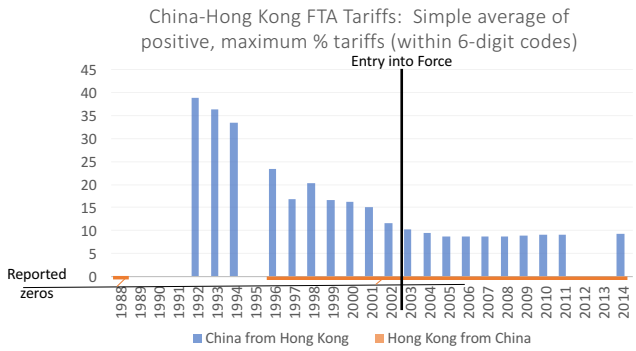


China-Hong Kong FTA 2003

	Min % Dutiable	Pre-Post Change in Max Positive Tariff
China	56.3	-13.9
Hong Kong	0.0	

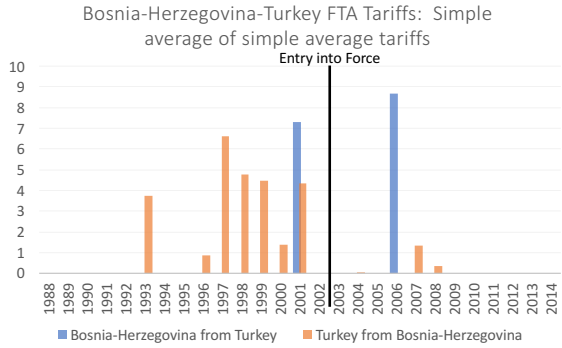


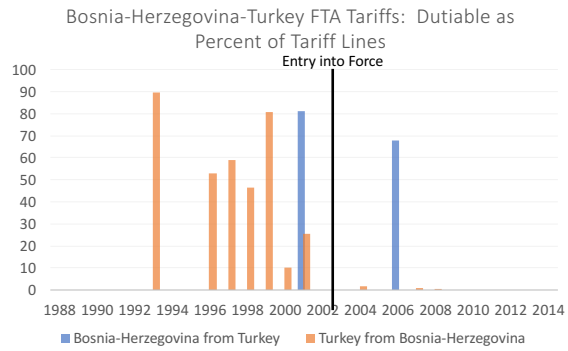


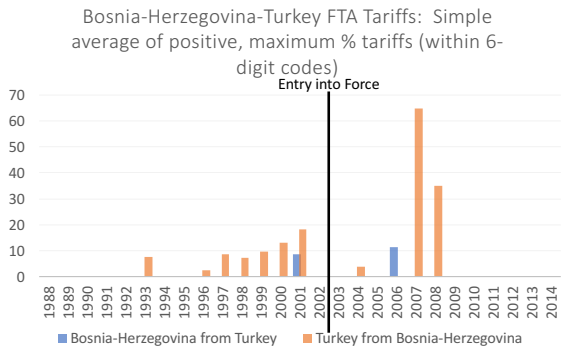


Bosnia-Herzegovina-Turkey FTA 2003

	Min % Dutiable	Pre-Post Change in Max Positive Tariff
Bosnia-Herzegovina	68.0	2.8
Turkey	0.6	25.1

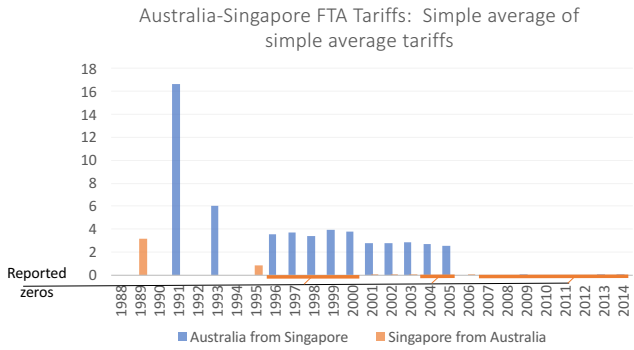


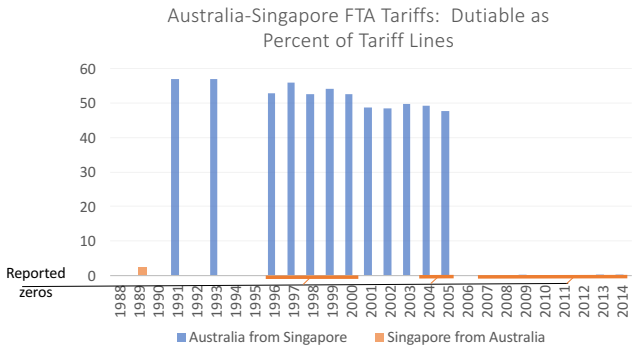


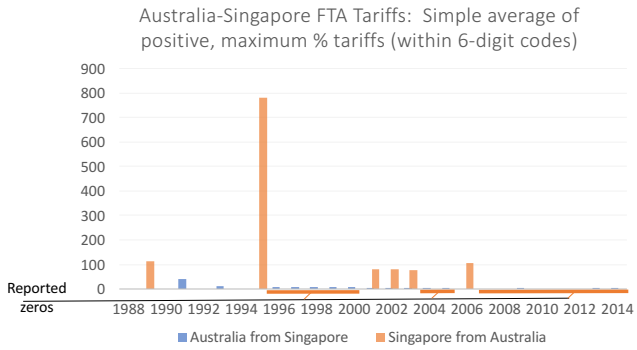


Australia-Singapore FTA 2003

	Min % Dutiable	Pre-Post Change in Max Positive Tariff
Australia	0.1	-6.1
Singapore	0.0	-158.7

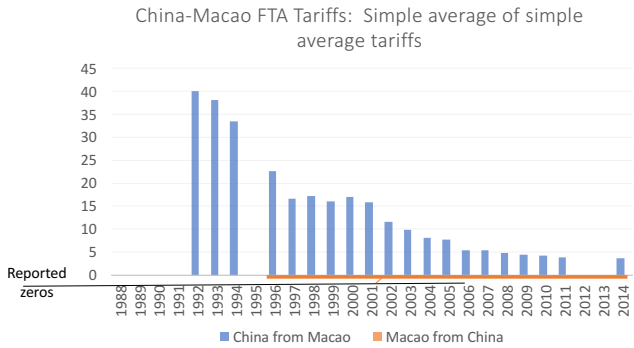


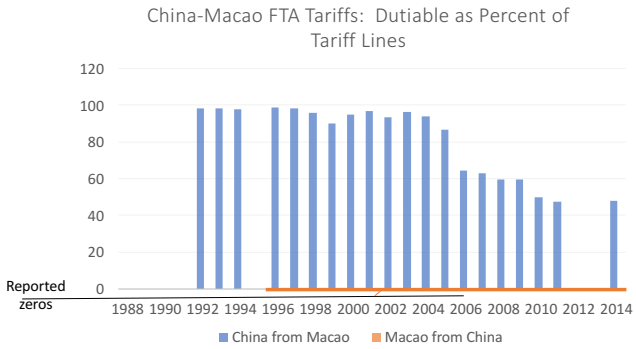


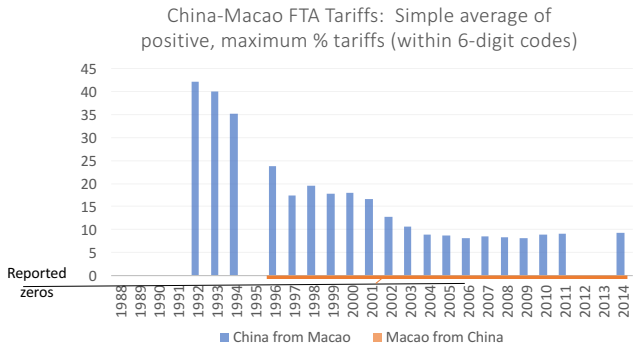


China-Macao FTA 2003

	Min % Dutiable	Pre-Post Change in Max Positive Tariff
China	47.3	-15.6
Macao	0.0	



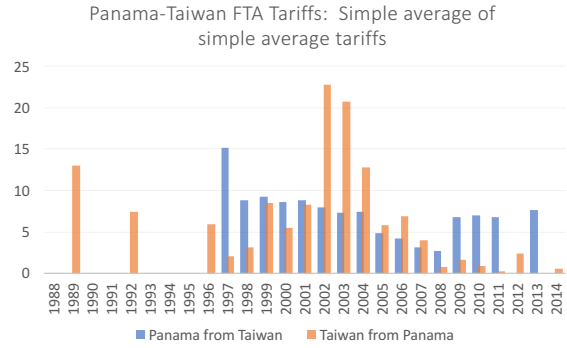


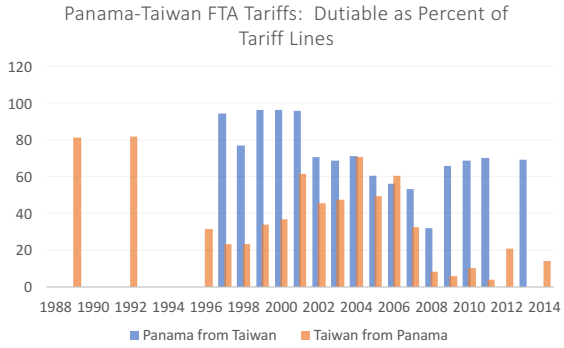


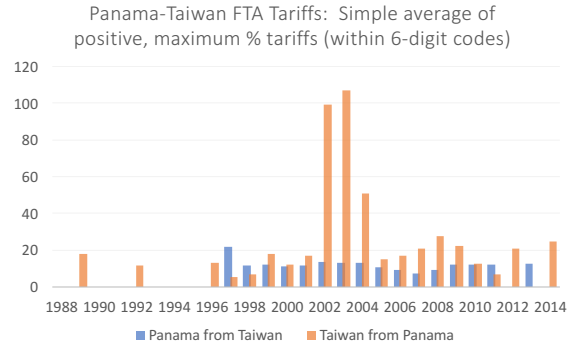
Panama-Taiwan FTA* 2004

	Min % Dutiable	Pre-Post Change in Max Positive Tariff
Panama	31.8	-2.8
Taiwan	3.9	-12.1

*Not included in the paper due to less than 10 years of data after the FTA.



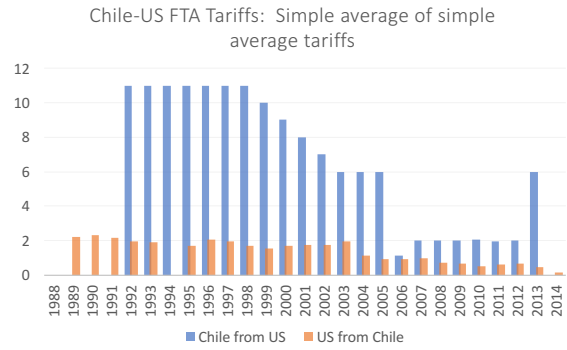


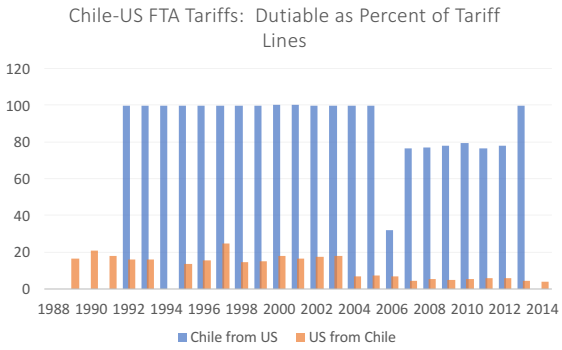


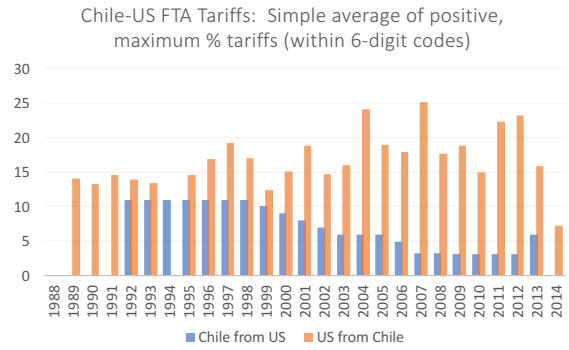
Chile-US FTA* 2004

	Min % Dutiable	Pre-Post Change in Max Positive Tariff
Chile	32.1	-5.8
US	3.9	2.9

*Not included in the paper due to less than 10 years of data after the FTA.



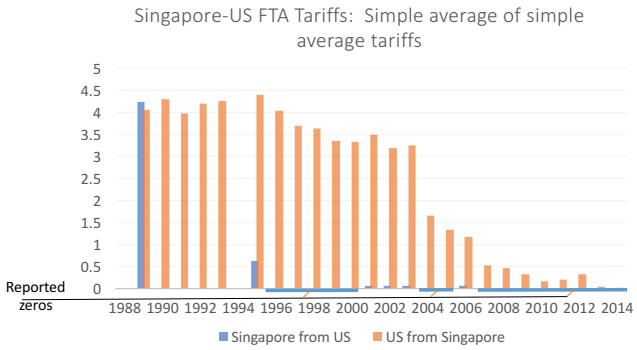


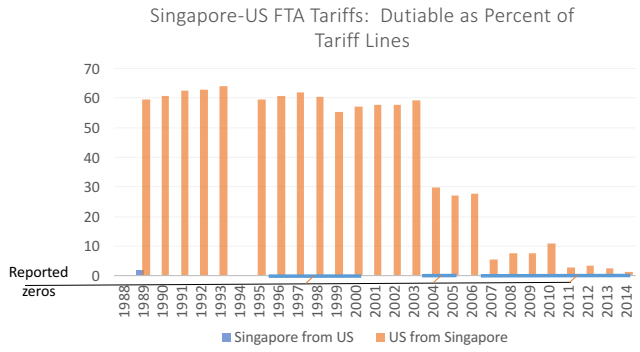


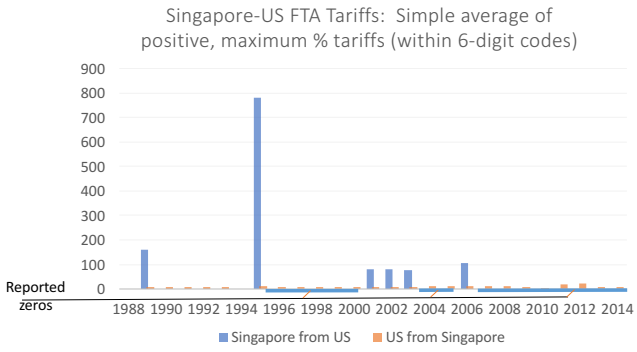
Singapore-US FTA* 2004

	Min % Dutiable	Pre-Post Change in Max Positive Tariff
Singapore	0.0	-131.6
US	1.1	3.2

*Not included in the paper due to less than 10 years of data after the FTA.



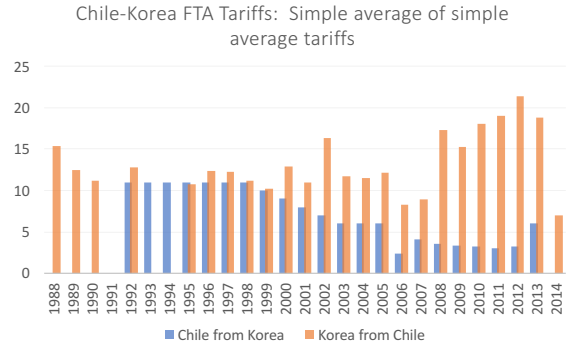


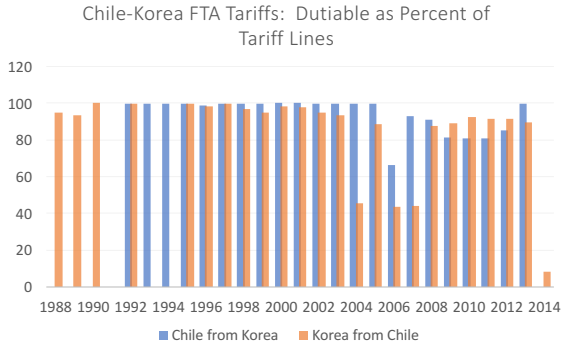


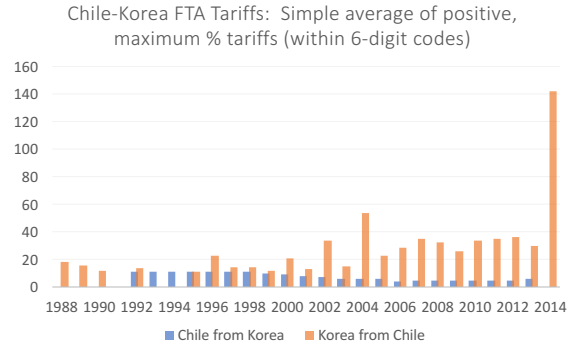
Chile-Korea FTA* 2004

	Min % Dutiable	Pre-Post Change in Max Positive Tariff
Chile	66.6	-4.9
Korea	8.1	25.7

*Not included in the paper due to less than 10 years of data after the FTA.







Mexico-Uruguay FTA* 2004

	Min % Dutiable	Pre-Post Change in Max Positive Tariff
Mexico	1.1	-3.5
Uruguay	0.2	-5.4

*Not included in the paper due to less than 10 years of data after the FTA.