



Are Free Trade Agreements contagious?

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ABSTRACT

This paper tests the hypothesis that the domino-like spread of regionalism is partly driven by ‘defensive’ FTAs, i.e. FTAs signed to reduce discrimination created by third-nation FTAs. A theory-based measure is used to test contagion against alternative determinants of regionalism. The main finding is that contagion is present in our data and robust to various econometric specifications, samples, and inclusions of various economic and political controls including the Baier–Bergstrand controls. Some support is found for political theories that stress ‘political distance’ but none for those that stress ‘slow multilateralism’.

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1. Introduction

Regionalism is sweeping the world trade system like wildfire while WTO talks advance at a glacial rate – an unconditional correlation that is often used to suggest that regionalism is a threat to the multilateral trading system (Bhagwati 2008). This concern has prompted a wave of research on why nations are so eager to remove barriers bilaterally.

The most common theoretical explanation in recent decades is “slow multilateralism”, i.e. the assertion that regionalism is spreading because multilateral talks are progressing so slowly (Krugman 1991, 1993; Bhagwati 1993, 2008). Other explanations turn on idiosyncratic events, such as the US’s opening of the US–Canada FTA talks in 1986 (Bhagwati 1991 p.71), the breakup of the USSR in 1991 (Lester and Mercurio 2009 p.3), and the Asian Crisis of 1997 (Harvie et al., 2006 p.3). More institutional explanations for regionalism’s popularity include the global spread of democracy (Mansfield et al., 2002; Wu 2004), and the quest for geopolitical stability (Mansfield and Pevehouse 2000; Martin et al. 2008, 2010, and Vicard 2008).

One lacuna in these hypotheses is the lack of recognition of third-nation effects, i.e. FTA interdependence. This angle is stressed by the so-called bandwagon or emulation arguments that posit a link between FTAs signed by the ‘trade giants’ (US, EU and Japan) and the attitudes of

other nations. The giant FTAs create “a sense elsewhere that regionalism is the order of the day and others must follow suit” (Bhagwati 1991 p.73, and, more recently, Solis et al., 2009). The political economy logic of this assertion has not been fully worked out but the idea seems a general ‘demonstration effect’. A related line of thinking for which the political economy links have been worked out is the domino theory of regionalism formalized in Baldwin (1993).² This argues that the signing or deepening of one FTA can induce excluded nations to sign new FTAs that were previously shunned. The logic turns on the way that trade diversion creates new political economy forces in excluded nations. Specifically, excluded nations seek to sign FTAs as a means of redressing the new discrimination. The FTAs thus signed create their own trade diversion that may lead to more FTAs. Using an obvious metaphor, the domino theory explains why FTAs seem to be ‘contagious’.

Our paper uses a broad panel of countries to empirically test the various hypotheses for spreading regionalism, especially the notion that FTAs are contagious in the sense that a new FTA between nations A and B increases the likelihood that nation C will sign a new FTA with A or B.

² There are precedents to the domino/contagion effect. Whalley (1993) informally argues that Western Hemispheric regionalism was largely defensive, focusing on fears of US aggressive unilateralism instead of trade diversion; he also does not posit a circular causality between bloc size and the strength of inclusionary pressures. Hufbauer (1989) uses the term “FTA magnetism” which captures the first step (idiosyncratic deepening sparks membership requests) but does not relate the strength of the magnetism to the bloc size. See Baldwin (1994, 1997, 2008) for applications to, respectively, the waves of regionalism in Europe, the Western Hemisphere, and East Asia.

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The value added of our paper is primarily empirical. First, while the empirical linkages have already been established in a more reduced form setting by Egger and Larch (2008) using spatial econometric methods, we use a broader sample of FTAs than previous studies. Moreover, our method allows us to test the contagion/domino effect against alternative hypotheses using a theory-based measure of contagion. This measure captures asymmetries in the dyads, and reflects trade dependencies. As such it goes beyond the earlier literature that uses measures based solely on geographical distance.

The rest of the paper is organized as follows. The next section presents an overview of relevant literature and the subsequent one presents our model. Section 4 presents our empirical strategy and Section 5 our data and results. The final section presents our concluding remarks.

2. Previous literature³

2.1. Theoretical work on FTA formation

A wide range of theory articles have studied the incentive to form customs unions (CUs) and FTAs. The first paper to consider endogenous CU formation seems to be Riezman (1985). He works in a 3-nation Walrasian setting where nations have an incentive to manipulate their terms of trade unilaterally or as members of a two-nation CU. International transfers are not allowed, so the external tariff is assumed to be set unilaterally by the “dominant” CU member. There are eight possible coalitions and he numerically calculates national utility levels for all eight assuming Cobb–Douglas preferences and three different endowment allocations. With these numbers he determines which coalition structures (i.e. trade arrangements) are blocked in the sense that at least one of the nations would prefer some other allocation. The trade arrangements that survive this elimination process thus have a chance of appearing through voluntary agreements.

Real-world multilateral constraints are ignored in the model; governments are allowed to violate their GATT/WTO commitments both unilaterally (by breaking their tariff binding commitments) and in pairs (by raising the CU's common external tariff). In this sense, this line of research asks what sort of regionalism would have been observed if GATT/WTO rules had not been respected in the postwar period. Implicitly, this provides a rationale for why such rules were actually respected. The issue of CU contagion never arises in Riezman (1985) given his use of the concept of the ‘core’ to evaluate which trade arrangements are most likely to occur. Riezman (1999) uses a similar model to ask whether banning FTAs and/or CUs would result in higher or lower Nash tariffs, when participation in such arrangements is endogenous.

Melatos and Woodland (2007) use a similar set up to consider the links between the nature of nations (similarities of endowments and preferences) and the nature of the core when FTAs, CUs, and non-cooperative outcomes are possibilities. They show that global free trade is in the core only when nations are sufficiently similar. CUs are in the core when nations are dissimilar; in this case, the selection of CU members tends to involve members that are similar in terms of preferences or endowments. When nations are very dissimilar, FTAs are preferred to CUs.

A different approach is the domino theory of regionalism (Baldwin 1993). Working with a monopolistic competition trade model, he shows that the trade-diversion effects of CU formation can induce nations that were previously against membership to join. Moreover, the economic incentive to join rises with the CU's size. If the CU enlargement is spread over time for practical reasons, a single event of regionalism may appear to spark a domino-like chain reaction where each enlargement triggers another. The result may be global free trade if nations' intrinsic resistance to joining is not too great.

³ A comprehensive review of the literature on FTA formation is provided by Freund and Ornelas (2010).

Yi (1996), working with a version of the Brander–Krugman model, studies the domino effect more formally by analyzing coalition structures. He shows that the global free trade outcome is stable when membership is open, but not necessarily when incumbents can veto enlargement. Krishna (1998) and Freund (2000) also work with the Brander–Krugman model. Krishna (1998) assumes governments' FTA choices are only affected by their firms' operating profit and shows that nations of similar size are likely to gain from an FTA – especially when it produces trade diversion. Freund (2000) shows that nations can gain from forming an FTA as long as their MFN tariffs are below the optimal tariff level.

Aghion et al. (2007) use cooperative game theory to analyze CU formation. Assuming that one nation is the undisputed agenda setter and that unlimited transfers among nations are possible and costless (transferable utility), they show that almost anything can happen – including an outcome that resembles the domino effect.

2.2. Empirical studies of FTA formation

Empirical studies of FTA formation are rarer as FTA membership is typically taken as exogenous by empirical researchers. The seminal article in the empirical FTA formation literature is Baier and Bergstrand (2004). However, they do not consider any of the hypotheses discussed above – focusing purely on economic determinants. Using cross-section data, they estimate the impact of economic factors on the probability that an FTA is signed. They find that the likelihood of an FTA is higher when the partners are: closer geographically, more distant from the rest of the world, larger, more similar in economic size, and further apart in terms of per capita incomes.

Several empirical studies have focused on aspects beyond the economic determinants. Mansfield and Reinhardt (2003) offer a political explanation, providing empirical support for the “slow multilateralism” argument. Mansfield et al. (2002) find that pairs of democratic countries are more likely to form an FTA, a result confirmed by Wu (2004), who also claims that economic and trade uncertainty matter. Holmes (2005) shows “mercantile interests” are also important determinants. The first test of the ‘geopolitical stability’ hypothesis is by Mansfield and Pevehouse (2000). They show that countries with an FTA are less likely to go to war – a result in conformity with the theory of Martin et al. (2008) and tested by Martin et al. (2010) and Vicard (2008).

FTA interdependence has received little empirical attention. The first efforts tested the domino theory on European data. Sapir (1997) estimates year-by-year gravity equations to identify the trade diversion effect of the EU on non-members. He finds that trade diversion estimates tend to spike just in advance of EU enlargements; he suggests that the enlargements were caused by the heightened trade diversion. Baldwin and Rieder (2007) undertake a similar procedure as a first stage to identify trade diversion and add a second stage that estimates a linear probability model linking the likelihood of joining the EU to contemporaneous trade diversion. This procedure, however, is plagued by the endogeneity of the membership.

Manger (2006) introduced spatial econometric techniques into the literature by using a weighting matrix based on distances. Egger and Larch (2008), using a similar weighting strategy, extend the spatial econometric analysis to the study of dynamic FTA formation and enlargement, incorporating long-term implications of interdependence in a cross-section analysis estimated with Bayesian techniques. Bergstrand et al. (2010) use survival analysis and a distance-based weighting matrix to predict the timing of FTA formation.

3. Theoretical considerations

This paper's main contribution is empirical but our empirical strategy depends upon a ‘contagion index’ that gauges the extent to which an FTA between nation-*j* and nation-*k* changes nation-*i*'s interest in signing a new FTA with either *j* or *k*. To inform the calculation of our contagion index, we present a simple political economy model that parsimoniously

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