SORE LOSERS?
GATT/WTO DISPUTES AND EXCHANGE RATE POLICY CHOICE

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ABSTRACT

In recent years, many IPE scholars have focused on the determinants of state decisions to initiate and/or settle trade disputes through the WTO's dispute settlement mechanism. Furthermore, some have suggested that these multilateral trade decisions themselves inform a state's trade policy: losing a WTO dispute, for example, has been shown to increase the likelihood of joining a preferential trade agreement (PTA). To date, however, this body of literature has paid little attention to the effects of GATT/WTO membership and disputes on governments' other economic policy choices, such as monetary policy and the choice of exchange rate regimes. In this paper, we argue that states that have suffered GATT/WTO defeats are more likely to act as "sore losers" – that is, to pursue exchange rate policies as a substitute for trade protection in order to improve the terms of trade. Using data on up to 57 countries from 1974-2000 we find robust evidence of such behavior over the last three decades. Countries that have suffered more defeats in GATT/WTO disputes are less likely to choose fixed exchange rate regimes and more likely to shift their exchange rate policy toward a more flexible regime. These countries are also more likely to "fear pegging" (i.e., to adopt *de facto* floating exchange rates despite their *de jure* commitments to fixed rates) and more likely to experience real exchange rate depreciations in the aftermath of their defeats. These findings shed light on the complex relationship between trade and exchange rate policies. More broadly, they suggest that compliance with multilateral commitments may be "in name only" when close policy substitutes allow states to circumvent these obligations.

Introduction

In recent years, a rich literature has emerged on the political economy of the World Trade Organization WTO) and its predecessor, the General Agreement on Tariffs and Trade (GATT). Much of this work seeks to explain state choices to pursue membership in the multilateral trading system, or to clarify the dynamics of trade round negotiations within these institutions (Baldwin 2007, Jones 2009, Odell 2009). Other work has sought to identify the effects of GATT/WTO membership on both trade flows and national trade policies (Goldstein, et. al. 2007; Rose 2004a/2004b; Subramanian and Wei 2007).[1] At the same time, a number of scholars in international political economy (IPE) have explored the politics of trade disputes within the GATT/WTO system. This literature seeks to explain both the escalation of trade disputes – in particular, states' decisions to pursue formal adjudication (Busch 2000; Davis and Blodgett Bermeo (forthcoming); Guzman and Simmons 2002; Sattler and Bernauer 2008) – as well as the outcome of these cases (Busch and Reinhardt 2001/2003/2006; Guzman and Simmons 2002; Reinhardt 2001) and their effects on national welfare (Kim 2008). A related strand of research focuses on the overlapping jurisdictions of the GATT/WTO system and various bilateral and regional trade agreements (RTAs); this work highlights the prevalence of forum shopping and seeks to explain why states choose particular international institutions in which to pursue trade disputes (Davis 2006, Busch 2007, Naoi 2009).

To date, however, this body of literature has paid little attention to the effects of GATT/WTO membership and disputes on governments' other economic policy choices, such as monetary policy and the choice of exchange rate regimes. Indeed, while a number of economists

[1] See Rose (forthcoming) for a comprehensive review of the evidence to date on the effects of GATT/WTO membership on trade flows.

have studied the macroeconomic and trade implications of exchange rates in recent years,[2] the relationship between countries' international trade commitments and their exchange rate policy choices has been largely overlooked by IPE scholars. This is puzzling, given that the literatures on the political economy of trade policy and exchange rates employ similar theoretical and empirical model and identify similar sets of variables (e.g., domestic societal interests, political institutions) as key determinants of both types of economic policy choices.[3] This gap in the literature is also surprising given that, in practice, trade protection and exchange rate devaluation/depreciation can have similar impacts on the relative prices of traded goods. For this reason, national governments may face incentives to engage in behavior similar to "exchange rate protection," the alternation of exchange rate policies as a lever to influence the terms of trade and enhance domestic producers' competitiveness in global markets (Corden 1982).

Our main goal in this paper is to address this gap in the IPE literature by exploring the effects of GATT/WTO disputes on countries' exchange rate policy choices. Specifically, we test whether states that have suffered defeats within the GATT/WTO dispute settlement mechanism are more likely to act as "sore losers" – that is, to pursue exchange rate policies as a substitute for trade protection in order to improve the terms of trade. Using data on up to 57 countries from 1974-2000 we find robust evidence of such behavior over the last three decades. All else equal, countries that have suffered more defeats in GATT/WTO disputes are less likely to choose fixed exchange rate regimes and more likely to shift their exchange rate policy toward a more flexible regime. These countries are also more likely to "fear pegging" (i.e., to adopt *de facto* floating

[2] See, for example, Chinn 2006, Klein and Shambaugh 2006, Levy-Yeyati and Sturzenegger 2003, and Shambaugh 2004,.

[3] These literatures are far too extensive to adequately review here. See Frieden and Broz 2006/2001, Frieden and Martin 2002, and Milner 1999 for comprehensive overviews.

exchange rates despite their *de jure* commitments to fixed rates). Finally, we find that GATT/WTO "losers" are more likely to experience real exchange rate depreciations in the aftermath of their defeats.

We interpret these results as strong evidence of exchange rate protection: as defeats within the GATT/WTO more tightly constrain states' ability to employ protectionist trade policies, governments are more likely to alter their exchange rate policies to enhance international competitiveness. This finding further clarifies the relationship between trade and exchange rate policies in the contemporary world economy. More broadly, we believe these results have important implications for our understanding of compliance and credible commitments in cases of international cooperation. Specifically, they suggest that some international agreements – such as the GATT/WTO – may not be the robust commitment mechanisms that international relations (IR) scholars often assume. Indeed, our findings indicate that whether membership and participation in international institutions leads to actual substantive changes in national policies (e.g., a move toward more liberalized trade) depends critically on whether or not a government can employ alternative domestic policies (e.g., exchange rate policy) to mitigate or offset the domestic consequences of such international commitments. When such alternative options exist, as in the case of trade and exchange rate policies, we are likely to observe high levels of *de jure* compliance with international agreements but few meaningful effects on *de facto* policy outcomes. In other words, the degree of "substitutability" among alternative government policies is likely to be a critical determinant of the conditions under which international agreements ultimately have the intended effects on states' behavior.

The remainder of this paper proceeds as follows. In the following section, we discuss the existing literature linking trade and exchange rate policies and further develop the theoretical

logic of exchange rate protection. We then develop a set of hypotheses about the relationship between outcomes in the GATT/WTO dispute settlement system and exchange rate policy choice, which we subject to empirical testing in the third section of the paper. We conclude by offering some thoughts on the ways in which future research might enhance our understanding of both the complex relationship between trade and exchange rate policies and the consequences of international commitments on national economic policy choices.

International trade and the political economy of exchange rates

The trade implications of exchange rate policy have long been an important object of study by both economists and political scientists (Frieden and Broz 2006/2001, Ghosh, et. al. 2002, Levy-Yeyati and Sturzenegger 2003, Rose 2000). Indeed, the canonical literature in economics on exchange rates emphasizes the reduction of currency risk as one of the keys reason why countries choose fixed exchange rates over more flexible regimes (Mundell 1961, McKinnon 1962, Kenen 1969, Frankel 1999). Pegging the exchange rate reduces or eliminates exchange rate risk and facilitates cross-border trade and exchange. In contrast, currency volatility creates uncertainty about cross-border transactions, adding a risk premium to the price of traded goods and international assets (Frieden 2008). Thus, fixed exchange rates enable a government to enhance the credibility of its commitment to international integration, thereby encouraging greater trade and investment.

In addition to currency stability, the level of the exchange rate also has important trade-related implications, as it affects the relative price of traded goods in both domestic and foreign markets. Fluctuations in exchange rates can have substantial effects on domestic producers' competitiveness in world markets: "In the case of a real appreciation, domestic goods become

more expensive relative to foreign goods; exports fall and imports rise as a result of the change in competitiveness. Real depreciation has the opposite effects, improving competitiveness" (Frieden and Broz 2001, 331). Consequently, exchange rate movements have significant domestic distributional consequences. All else equal, exporters and import-competing industries lose from currency appreciation, while the nontradables sector and domestic consumers gain (Frieden 1991). Conversely, currency depreciations have the opposite effect, helping exporters and import-competing firms at the expense of consumers and the nontradables sector (Frieden and Broz 2001).

A number of historical and contemporary examples highlight these connections between trade and exchange rate policies. For example, the question of whether or not to adhere to the gold standard mobilized tradable goods producers and dominated political debates about economic policy in the United States and elsewhere during both the pre-1914 and interwar periods (Eichengreen 1992, Frieden 1993, Simmons 1994). Similarly, the United States' large current account deficits in the late 1960s and early 1970s, coupled with concerns of American exporters about the loss of competitiveness vis-à-vis Europe and Japan, heavily influenced the Nixon administration's decision to close the "gold window" and end the Bretton Woods era (Odell 1982, Gowa 1983). In the mid-1980s, the trade-related implications of the dollar's 50% appreciation relative to the German Deutsche Mark and Japanese yen were a major factor leading to the Plaza and Louvre Accords, in which G-7 central banks engaged in coordinated foreign exchange intervention to stabilize their exchange rates (Destler and Henning 1989, Frankel 1994). Most recently, scholars and policymakers have hotly debated whether or not China's massive trade surplus with the United States is the result of the Chinese government's active

intervention in foreign exchange markets to prevent any significant appreciation of its currency, the renminbi (Bergsten 2006).[4]

The logic of exchange rate protection

These well-known cases highlight the substantial effects that exchange rate policy choices can have on both the level and flexibility of the exchange rate – and, by extension, on a country's terms of trade. These effects, in turn, make exchange rate policy a potential substitute for trade protection: a 10% real depreciation is equivalent to a 10% import tax plus a 10% export subsidy (McKinnon and Fung 1993). Thus, just as governments utilize a variety of trade policy instruments to subsidize exporters and/or protect import-competing industries from foreign competition, they can also attempt to achieve similar effects on the terms of trade through changes in their exchange rate policy choices. In short, governments may seek to engage in "exchange rate protection" by devaluing a fixed exchange rate peg, by moving from a fixed exchange rate to a floating regime, or by preventing an appreciation that would otherwise occur in the absence of foreign exchange market intervention (Corden 1982).

Utilizing exchange rate policy in place of trade protection as a tool for enhancing international competitiveness has three key advantages for governments. First, exchange rate policies are generally less transparent than the use of tariffs or non-tariff barriers (NTBs), such as quotas or voluntary export restraints (VERs). In particular, trade protection is generally more visible and more explicitly protectionist than either *de facto* exchange rate regime policies or exchange rate depreciation, which can occur for a variety of reasons (both trade- and non-trade-related). As a result, protectionist trade policies are more likely to mobilize domestic and

[4] See Ronald I. McKinnon, "Currency Manipulator?" *The Wall Street Journal*, 24 April 2006; and Charles E. Schumer and Lindsey O. Graham, "Will It Take a Tariff to Free the Yuan?" *New York Times*, 8 June 2005.

international opposition than exchange rate protection. Second, protectionist trade policies often require domestic legislation, whereas the government and/or monetary authority can often alter the exchange rate regime or attempt to manipulate the level of the exchange rate without legislative approval. Thus, governments may prefer to utilize exchange rate policy as a way to circumvent domestic political opposition to tariffs and other protectionist trade policies. Finally, and most importantly for our purposes, exchange rate policy offers national governments a possible way of circumventing their international commitments to free trade. By altering the exchange rate regime or devaluing/depreciating the currency as a substitute for tariffs and other protectionist policies, governments can enhance the competitiveness of domestic producers without formally violating the terms of their international trade agreements. Therefore, exchange rate policy may provide governments an alternative channel through which to provide trade protection to domestic constituents once international agreements no longer permit the use of traditional tariffs and non-tariff barriers.

Despite these advantages, altering exchange rate policies for trade-related purposes is not without costs. Above all, the key disadvantage of exchange rate protection is that it is a very blunt instrument. Compared to the precisely targeted economic effects of tariff and non-tariff barriers on specific firms, sectors, and industries, the level and stability of the exchange rate affect all sectors of the domestic economy, helping some while harming others. Similarly, while trade protection can be narrowly targeted against specific foreign producers or countries (e.g., the US government's targeting of Japanese auto exports in the 1980s), exchange rate policies generally affect a country's terms of trade against all of its trading partners.[5] These across-the-board effects of exchange rate protection also may make it harder for a government to take

[5] Of course, pegging to a particular currency – or moving away from such a peg – has the clearest and most immediate consequences for the bilateral terms of trade between the two countries in question. Nevertheless, exchange rate policy changes also have spillover effects on the broader nominal and real effective exchange rates.

political credit for firm- or sector-specific advantages resulting from changes in the level or stability of the currency.

A second disadvantage of employing exchange rate policy as a substitute for trade protection is that its long-run effects are uncertain. In a standard open economy setting, a nominal devaluation or depreciation not only makes a country's exports cheaper in terms of foreign currencies, but also makes a country's imports more expensive in terms of domestic currency (Bahmani-Oskooee and Miteza 2002). Over time, more expensive imports can lead to inflation in the export sector, thereby eroding the real effects of the nominal devaluation.[6] Consequently, the trade-related benefits of exchange rate protection may be less enduring (if they materialize at all) than those resulting from more direct measures, such as tariffs, quotas, and other NTBs. Furthermore, as recent work suggests, these inflationary concerns frequently contribute to "fear of floating," in which countries adopt *de jure* floating exchange rates while choosing *de facto* fixed regimes to prevent excessive depreciation and exchange rate volatility (Calvo and Reinhart 2002, Plümper and Troeger 2008).

Nevertheless, the existing literature provides robust empirical evidence that the choice of exchange rate regime has substantial, systematic effects on the level of the exchange rate: in both the industrialized countries and the developing world, more flexible exchange rate regimes are strongly associated with both nominal and real depreciation over the last three decades (IMF 1997, 89; Frieden 2002, 833; Blomberg et. al. 2005). Moreover, despite the pervasiveness of "fear of floating," many countries have chosen to adopt flexible exchange rate regimes (both *de jure* and *de facto*) in recent years (as discussed further below). In fact, a significant minority of countries over the last three decades has actually demonstrated a "fear of pegging" (*de jure* fixed

[6] A well-developed literature in macroeconomics provides strong evidence that the short- to medium-term real effects of nominal devaluations weaken or disappear over time. See Donovan 1981, Bautista 1981, Morgan and Davis 1982, Edwards 1988, and Edwards 1994.

exchange rates, *de facto* flexible regimes). Taken together, these outcomes suggest that some countries may be pursuing exchange rate policies aimed directly at enhancing domestic producers' competitiveness in global markets.

GATT/WTO disputes and exchange rate protection

The dispute settlement process in the GATT/WTO system is often referred to as the "jewel" of the multilateral trading system (Hudec 1993: 9). In the dispute settlement mechanism (DSM), states hope to have their trade policy differences worked out in a more legalized manner to guard against potentially ruinous "arms races" in tariff rates when differences over policy arise between them. The DSM process has fielded hundreds of disputes under both the GATT and WTO.

The DSM process is relatively straightforward. Initially, one state notifies the GATT/WTO of an objection to the trade policy of another state. Bilateral negotiations ensue, but states may request an independent legal judgment from a WTO (or GATT) appointed panel of experts. If a ruling is issued (rulings may be for one side or mixed), the winning side must coordinate enforcement. Losers may then make amends or, despite the ruling, carry on with their status quo policy while bearing the cost of WTO-sanctioned punishment from the winner. Appeals are possible, as are compliance-like hearings to judge whether a remedy has resolved the underlying dispute. Disputes may end at any point along the DSM process so long as the plaintiff either deems that appropriate changes have been made or the WTO panel rules for the defendant. In reality, most plaintiffs gain some concessions; presumably since the costs of bringing a full-fledged dispute to the WTO is costly a strong selection process occurs before a

decision to file is made (Busch and Reinhardt 2002). If defendants are continually losing, this implies that they are most likely losing protections for their internal markets.

Our central argument is that defeats within the GATT/WTO dispute settlement system strengthen the trade-related incentives discussed above for countries to adopt more flexible and more depreciated exchange rates. The logic is straightforward: since defeats within the GATT/WTO mandate that a defendant state remove the protectionist barriers in question, the government will face pressure from domestic producers to adopt alternative policies aimed at improving the terms of trade. To the extent that exchange rate policy offers defeated governments a possible (albeit imperfect) substitute for the trade policies now deemed illegal under international law, we should observe these states engaging in exchange rate protection.

In short, we believe that countries frequently act as "sore losers" in the wake of GATT/WTO disputes by altering their exchange rates in order to offset the negative effects of repealing protectionist trade policies on domestic producers. More specifically, we posit the following hypotheses:

- *H1: More dispute "losses" within the GATT/WTO dispute settlement system increase the probability that a government will adopt floating exchange rates*.
- *H2: More GATT/WTO dispute losses increase the probability that a government will shift toward a more flexible exchange rate regime.*
- *H3: More GATT/WTO dispute losses increase the probability that a government will demonstrate "fear of pegging" (*de jure *fixed exchange rates*, de facto *floating*).
- *H4: More GATT/WTO dispute losses increase the probability that a country will experience real exchange rate depreciation.*

Each of these hypotheses captures our expectations about different ways in which a government might choose to employ exchange rate policy for protectionist purposes when GATT/WTO

defeats restrict its ability to utilize traditional trade policy measures. We discuss our operationalization of the variables used to test these hypotheses in the section that follows.

Dependent variables: measuring exchange rate policy choices

Until recently, empirical analyses of countries' exchange rate regime choices drew primarily on self-reported data provided to the IMF by its member-states about their exchange rate regime choices. In recent years, however, a number of scholars have highlighted the frequent discrepancies between governments' public statements about their official exchange rate policies (i.e., *de jure* regime choice) and their actual behavior (*de facto* regime choice). These new *de facto* measures of exchange rate behavior have rapidly become the state-of-the-art in empirical work on the political economy of exchange rates, since they more accurately capture governments' "deeds" rather than simply their "words." A number of different *de facto* exchange rate regime classifications are now in use (Levy-Yeyati and Sturzenegger (LYS) 2003, Reinart and Rogoff (RR) 2004, Klein and Shambaugh (KS) 2006). Each differs in its methodology and yields quite different classifications across countries and over time.[7] In our

[7] The Klein and Shambaugh (KS) classification is similar to that used by Shambaugh (2004). The two main differences are that KS exclude one-year pegs and allow a peg spell to continue if there is a one-time, discrete devaluation during a year. The correlation between these two classifications is nearly perfect (0.93). KS classify exchange rate regime choice based on the duration of peg spells. They develop a binary coding in which a country is deemed to have a "fixed" exchange rate in a given calendar year, with its currency pegged to the currency of a base country, if its month-end official bilateral exchange rate stays within a +/- 2% band during each month of the year, as well as over the course of that year (Klein and Shambaugh 2006). Since the coding is annual, the peg must last for at least a full calendar year for a country to be classified as pegged for that year; pegs that last less than a full year are classified as non-peg ("floating") regimes. KS determine the identity of the base country based on the pegging history of a given country, the historical importance of key currencies for particular countries, and the geographical proximity of large economies.[7] The primary advantage of the KS regime is that its definition of a peg is clear, invariant over time, and generally in line with historical definitions of fixed exchange rates as used during the gold standard era and during Bretton Woods and the European Monetary System (EMS). An important disadvantage of this classification, however, is that focus on calendar year peg spells risks missing the "forest for the trees": it might be the case that a country experiences temporary breaks in its peg spells (i.e., single-month gaps within a year) that result in a coding of "floating" for the year, even if it maintains its commitment to a fixed exchange rate over the longer term. KS treat these cases as "floats," even though they may not be indicative of purposeful changes in a government's exchange rate regime policy. Levy-Yeyati and Sturzenegger (LYS) (2001, 2005, 2007) have developed an alternative *de facto* classification that relies on clustering country-year observations

analysis, we employ the classification developed by Reinhart and Rogoff (2004), who utilize deviations from official announcements, data on parallel (black market) and official dual exchange rates, reserve movements, and detailed country chronologies to code *de facto* exchange rate regimes from 1970-2007. Using this data, RR create a 15-point scale of exchange rate regimes, which they then aggregate into a coarse 5-point scale (fixed, narrow crawling peg/band, wide band/managed floating, freely floating, freely falling). The classification is based on the conditional probability that the exchange rate stays within a given range over a rolling five-year window. Thus, in contrast to the KS classification, RR's index allows for a degree of depreciation/devaluation and monthly volatility within the same classification of exchange rate regimes. At the same time, in contrast to LYS, the RR coding more accurately characterizes clear policy changes in the exchange rate regime. The cost of this coding, of course, is that the bar for regime changes is higher: indeed, countries are not deemed to have changed their regime if they have fixed exchange rates but experience a one-time devaluation, or if they are floating but do not experience any market volatility in a given year. For the purposes of our analysis, however, this higher bar is an advantage, since we are primarily interested in the question of whether GATT/WTO disputes lead to purposeful changes in countries' exchange rate regime choices (rather than whether multilateral trade institutions affect exchange rate volatility *per se*).

on the basis of three variables: nominal exchange rate movements during a year, movements in central bank reserves, and changes in the rate of change of the exchange rate (to capture crawling peg regimes). One advantage of this methodology over the KS classification is its use of reserves, which captures foreign exchange market interventions by the central bank. A key disadvantage of the LYS index, however, is that cluster analysis classifies many country-cases with an unvarying exchange rate, no reserves volatility, and/or missing reserves data as "ad hoc" fixes, even though these cases do not necessarily indicate that a government or central bank is actively working to maintain a *de facto* currency peg. Another disadvantage is that LYS do not treat years with discrete devaluations from one fixed rate to another as "pegs." As a result, the LYS coding classifies countries that generally peg but experience one-time devaluations as "floats," even if these countries consistently maintain a peg both before and after the devaluation episode. Thus, while LYS more closely measure exchange rate *policy* than KS, their classification introduces substantial ambiguity about the precise definition of *de facto* "fixes" and "floats."

In the analysis that follows, we therefore employ the RR *de facto* classification, with slight modifications based on recent work in the literature (e.g., Guisinger and Singer, forthcoming).[8] Specifically, we exclude observations from the RR dataset in which the exchange rate regime is classified as "freely falling," as well as those in which the dual market exchange rate data is missing. In addition, we exclude cases in which a country is experiencing hyperinflation (annual inflation greater than 100%).[9] Finally, we also exclude countries whose average population in the sample period is less than 400,000, in order to ensure that our results are not biased by the policies of extremely small (primarily island) economies that tend to more frequently adopt "hard" fixed exchange rates than other states.[10] Table 1 shows the distribution of cases in our dataset from 1973-2002 for the 4-point RR classification, while Table 2 shows the IMF's 4-point official (*de jure*) classification for comparison (hereafter DJ). The IMF data are drawn from the Fund's *Annual Report on Exchange Rate Arrangements*.[11]

[TABLES 1 & 2 HERE]

In Tables 3 and 4, we recode both the DJ and RR classifications into binary, or "broad" classifications of exchange rate regime choice (*DJBROAD*, *RRBROAD*). Given the slight differences in the regimes included in the intermediate "points" of the 4-point DJ and RR scales, the binary coding more accurately enables comparison of the *de jure* and *de facto*

[8] Data are available at http://terpconnect.umd.edu/~creinhar/Data/ERA-Annual%20coarse%20class.xls.
[9] The results presented below are substantively identical if we include the freely failing observations in the sample. RR themselves code cases in which monthly inflation exceeds 40% as "freely falling." However, this leaves some cases of annualized hyperinflation in the dataset. To rectify this, we exclude country-cases in which annualized inflation equals or exceeds 150%.
[10] Iceland and Luxembourg are the two exceptions to this rule. Once again, the substantive results below are unaffected by this data selection strategy.
[11] We utilize the data file available on Carmen Reinhart's website: http://terpconnect.umd.edu/~creinhar/Data/ERA-IMF%20class.xls.

classifications.[12] Under this coding, a country's *de facto* exchange rate is deemed to be "fixed" if the RR classification is either a "1" or "2" (pegs and crawling pegs with less than 2% flexibility), while it is classified as "floating" if the RR coding is either a "3" or "4" (wider crawling/moving bands, managed floating, and freely floating). Similarly, a "1" or "2" in the DJ classification (pegs and limited flexibility) is coded as "fixed," while "3" and "4" (managed floating, independent floating) are treated as "floating."

[TABLES 3 & 4 HERE]

In addition to the basic indices of *de facto* and *de jure* regime choice, we calculate two further variables intended to capture countries' exchange rate regime choices. First, using the original 4-point RR classification, we create *MOREFLEX*, a binary variable that takes the value of "1" if a country's *de facto* exchange rate regime at time *t* is more flexible than that at time *t-1*. This variable is intended to capture more shifts by countries toward flexible exchange rates over time. Second, we combine *DJBROAD* and *RRBROAD* to create *FEARPEG*, a binary variable that takes the value of "1" if a country has adopted a *de jure* "fixed" exchange rate (*DJBROAD*=1) but a *de facto* "float" (*RRBROAD*=0). This variable is intended to identify cases in which a government pursues flexible exchange rates in practice, despite its verbal commitments to fix. *MOREFLEX* and *FEARPEG* aim to capture different ways in which governments might engage in exchange rate protection. Given the strong correlation between flexible exchange rates and depreciation, both shifts to more flexible regimes and *de facto* deviations from *de jure* pegs are indicators that a government is pursuing exchange rate policies designed to improve the international terms of trade. Tables 5 and 6 present information on the distribution of *MOREFLEX* and *FEARPEG*, respectively.

[12] Specifically, the IMF's *de jure* classification codes "1" as strictly pegs to a single currency or basket, while RR's *de facto* classification includes narrow pre-announced horizontal bands of +/- 2%.

[TABLES 5 & 6 HERE]

Finally, we create a fifth dependent variable, *REER*, which is the IMF's trade-weighted real effective exchange rate index, taken from the *World Development Indicators*. The index is scaled such that the value of the real effective exchange rate in 2000 for each country equals 100. Figure 1 shows the distribution of values in the dataset for *REER*.[13] While changes in *REER* are less explicitly an indicator of active policy choice than the regime variables outlined above, movements in this variable may capture "tacit" exchange rate protection, i.e., cases in which a government allows the currency to depreciate rather than intervening in foreign exchange markets to maintain a peg. Since such exchange rate movements might occur within individual *de facto* and *de jure* regime classifications, *REER* provides an additional measure of possible exchange rate protection.

[FIGURE 1 HERE]

Models

In order to test the extent and direction of this relationship between GATT/WTO disputes and countries' exchange rate policies, we employ time-series/cross-sectional analysis of data of an original dataset covering up to 86 countries from 1973 to 2002.[14] Our unit of analysis, therefore, is the country-year. We employ the following general model to investigate the determinants of a country's exchange rate policy choices:

[13] We drop 34 severe outlier observations (i.e., those exceeding 3 standard deviations above the mean) from Poland, Guyana, Iran, Nigeria, Nicaragua, and Uganda.

[14] The full dataset includes 86 countries from 1973-2002, although our samples are smaller for the models below. This is due to both data availability limits and the use of fixed effects analysis, in which all countries with no variation on the dependent variable drop from the samples.

$$ER\ Policy = \beta_0 + \beta_1 GATT/WTO + \beta_2 \#Disputes + \beta_3 Dispute\ Loss + \beta_4 Openness + \beta_5 Base\ Trade + \beta_6 Agr\ Exports + \beta_7 Mfg\ Exports + \beta_8 Inflation + \beta_9 Growth + \beta_{10} Current\ Account + \beta_{11} GDP + \beta_{12} pcGDP + \beta_{13} Polity + \beta_{14} CBI + \beta_{15} KAOpen + \varepsilon$$

For our measure of exchange rate policy, we use the five variables described in the previous section. Given that not all members of our sample are GATT or WTO members for the entire estimation period of our sample, we introduce an indicator variable, *GATT/WTO,* which takes on a value of 1 if state *i* was a member of the GATT (1974-1995) or WTO (1995-2000) in year *t-1*.

Our two key independent variables of theoretical interest are *#Disputes* and *Dispute Loss*. The first variable measures the number of disputes to which state *i* is a party in year *t-1*. The variable includes all ongoing disputes in which state *i* is either defendant or plaintiff. In our analysis, it is important to include this count of the overall number of GATT/WTO disputes, since we do not want our measure of dispute losses to simply proxy for the states that find themselves a party to numerous trade disputes. Indeed, as discussed above, we hypothesize that it is not overall disputes, but rather losses that motivate states to alter their exchange rate policies for protectionist purposes. Consequently, we include the second variable (*Dispute Loss*), which counts the number of losses by state *i* in year *t-1*. The losses are coded in the year in which the dispute is considered resolved. Losses are considered cases in which a state is ruled against by a GATT/WTO panel or makes significant concessions.[15]

Control variables

In addition to our variables of interest, we also include a number of variables commonly identified in the existing literature as key economic and political determinants of exchange rate

[15] The data on concessions is taken from Reinhardt (2001) and Busch and Reinhardt (2003).

policies. First, to ensure that involvement in the GATT/WTO is not simply measuring the general trade dependence of a particular country, we introduce *Openness*, which is the natural logarithm of state *i*'s trade (imports + exports) to GDP ratio in year *t-1*. The standard expectation in the literature is that more trade-dependent economies are likely to prefer fixed, stable exchange rates; however, it is also possible that more trade-dependent economies will be less likely to fix in order to keep open the possibility of protecting domestic tradables producers through exchange rate manipulation. The data on trade openness are taken from the World Bank's *World Development Indicators*.

Second, it is possible that a country's exchange rate policies are influenced less by general trade openness than by its economic ties to certain large, key countries in the world economy. That is, a state that trades primarily with the US or has pegged its currency to the dollar (either currently or in the past) may be primarily concerned about this bilateral relationship rather than the effects of its exchange rate policies on trade flows with a larger set of partners. To control for this possibility, we introduce *Base Trade*, which is the percentage share of state *i*'s trade with its "base" country. For states that have adopted fixed exchange rates, the "base" country is that of the anchor currency; for non-peg states, the base country is a state with "historical importance for the local country, the nearby dominant economy to which other currencies were pegged, or the dollar as a default of nothing else was clear" (Shambaugh 2004). This strategy allows us to identify a base country for all country-years in our dataset, regardless of the current exchange rate regime in place.

Third, we control for the influence of organized domestic interests on a government's exchange rate policy choice (Frieden 1991, Hefeker 1997). In particular, we include two measures of the sectoral composition of a country's exports, as proxies for the degree to which

societal interest groups are sensitive to both the level and volatility of the exchange rate. While overall trade openness (e.g., trade/GDP) provides a rough measure of a country's (and its exporters') preference for reducing currency volatility, certain types of exporters are more sensitive to the level of the exchange rate than others. In particular, exporters whose prices respond rapidly to changes in currency values – that is, where "pass-through" of exchange rate movements from foreign producers to local consumers in the form of price increases/decreases is high – are more sensitive to the level of the currency relative to its volatility (Frieden and Broz 2006, Valderrama 2004, Olivei 2002). Generally, pass-through is higher when goods are highly standardized and/or international competition is stronger – for example, in agricultural commodities, textiles, and simple manufacturing (Campa and Goldberg 2002).[16] In contrast, pass-through is less of a concern when goods are highly specialized and/or differentiated, such as automobiles, commercial aircraft, and products with strong brand or quality distinction (Frieden, forthcoming). Measuring pass-through (and its corresponding effects on exporters' concerns about the exchange rate level) is notoriously difficult, as it depends on factors such as the extent to which firms rely on imported intermediate inputs and the degree to which products are highly differentiated (Frieden, Ghezzi, and Stein 2001; Goldberg and Knetter 1997). Nevertheless, as rough proxies, we follow the existing literature in controlling for both the percentage of all exports that originate in the manufacturing sector, labeled *Mfg Exports*, as well as the percentage of exports that are from the agriculture or raw materials sector, labeled *Agr Exports* (Frieden 2002; Frieden, Ghezzi, and Stein 2001). Both variables are lagged one period to mitigate endogeneity and are taken form the World Bank's *World Development Indicators*.

Although these compositional measures of exports are admittedly imperfect measures of

[16] Consequently, manufacturers in less developed countries tend to be more focused on the level of the exchange rate than those in advanced economies (Frieden, Ghezzi, and Stein 2001).

concerns about pass-through and the level of the exchange rate, manufactured goods are generally less susceptible to pass-through than commodities and agricultural products. All else equal, we therefore expect countries whose exports consist of a larger share of manufactured goods to be *relatively less concerned* with the level of the exchange rate (and therefore, relatively more concerned with minimizing currency volatility through the adoption of fixed exchange rates). Consequently, higher shares of manufactured exports should be associated with a reduced probability of exchange rate protection. The reverse argument then holds for the level of agricultural exports. We expect countries more reliant on agriculture and raw materials to be *relatively more concerned* with the level of exchange rate, and thus more likely to engage in exchange rate protection.

Next, we also include a battery of macroeconomic controls commonly associated with exchange rate regime choice. First, we include the natural log of the annualized consumer price index in state *i* (*Inflation*) in year *t-1*.[17] Second, we control for the level of economic growth (GDP) in each country (*Growth*) in year *t-1*. Third, we also include a measure of the size of the current account relative to GDP, labeled *Current Account*, in order to control for those governments running larger balance of payments deficits. These states are, in general, more likely to manipulate the exchange rate for adjustment purposes. These macroeconomic variables are taken from the World Bank's *World Development Indicators*, with missing data filled in using the IMF's *International Financial Statistics*.

Fourth, we control for the level of development of the economy of each state in our sample by measuring each state's per capita GDP (*pcGDP*) in year *t-1*, since there are good theoretical reasons to believe that both the adoption of flexible exchange rate regimes and the

[17] As noted above, we exclude countries experiencing hyperinflation, which we define as annualized inflation greater than or equal to 150%.

practice of exchange rate protection is more likely to be a developed country phenomenon. Indeed, since developing countries are generally more susceptible to currency crises (Caprio and Klingebiel 2003), they tend to place a greater premium on reducing currency volatility than developed countries.[18] Calvo and Reinhart refer to this as "fear of floating" (2002). The underlying logic is that fears of speculative attacks and/or large depreciations makes developing country governments unwilling to pursue floating exchange rates. Moreover, since most developing countries are subject to "original sin" (Eichengreen and Hausmann 1999) – an inability to borrow internationally in their own currency – depreciation or devaluation has the negative side effect of increasing a country's external debt obligations. Including *pcGDP* also controls for the fact that the advanced industrialized countries are, by a significant margin, the states most frequently involved in GATT/WTO disputes (and, therefore, most likely to be candidates to become "sore losers"). *pcGDP* enters the model as a natural log; data are taken from the World Bank's *World Development Indicators*.[19]

Fifth, we control for the influence of domestic political institutions on exchange rate policy choices. To this end, we introduce two different measures of political institutions. Many scholars have noted the relationship between democracy and various types of democratic institutions with exchange rate regime choices (e.g., Bernhard and Leblang 1999; Hallerberg 2002). In addition, it is often argued that democracies are more likely to uphold their international commitments (Lipson 2003), suggesting that for our "fear of pegging" model, it will be crucial to control for regime type. To this end, we include *Regime Type* which is the Polity score of state *i* in year *t-1*.[20] We also include a measure of central bank independence

[18] Calvo and Reinhart find that even those developing countries that nominally float their currencies often heavily intervene in foreign exchange market to prevent large movement in *de facto* exchange rates.
[19] GDP and pcGDP are in constant 2000 dollars.
[20] We use the traditional -10 to +10 polity scale. Data are taken from Gleditsch's (2008) recoded Polity data.

(*CBI*), in order to control for the presence or absence of institutional constraints on the government's ability to alter monetary and exchange rate policies. While fine-grained indices of central bank independence are only available for a limited set of countries, McNamara and Castro (2003) have developed a dichotomous measure of CBI with broad coverage. We include this measure in our analysis, with the expectation that higher levels of CBI will be associated with more "fixed" exchange rates, less "fear of pegging," and less depreciation.

Finally, in addition to controlling for a country's trade dependence, we also take into account how its level of financial integration into the world economy affects its exchange rate policy choices. According to the well-known Mundell-Fleming "trilemma," governments face tradeoffs between capital mobility, monetary policy autonomy, and fixed exchange rates in an open economy setting (Mundell 1962, Frieden and Broz 2006). Specifically, high levels of capital mobility require governments to choose between fixed exchange rates and monetary policy autonomy, since freely flowing capital will quickly eliminate interest rate differentials across countries through arbitrage. In other words, governments necessarily face tradeoffs between the three "poles" of the trilemma: they can pursue fixed exchange rates and monetary policy autonomy at the expense of capital mobility, achieve fixed rates and capital mobility while sacrificing monetary policy autonomy, or opt for capital mobility and monetary policy autonomy by allowing the currency to float. Thus, the level of capital account openness is likely to be a key determinant of governments' exchange rate policies, although the direction of this effect are not clear *ex ante*.[21]

As a measure of capital account openness, we use Chinn and Ito's (2006) index (*KAOpen)*, which measures the extent of legal restrictions on cross-border financial transactions.

[21] Indeed, the fact that the Mundell-Fleming framework itself makes no definitive predictions about how countries will weigh these tradeoffs as they choose sides of the trilemma.

It is based on the binary coding of restrictions in the IMF's *Annual Report on Exchange Arrangements and Exchange Restrictions*, and focuses on four dimensions of restrictions: the existence of multiple exchange rates, restrictions on the current and capital accounts (where the latter are measured as the proportion of the last five years without controls), and requirements to surrender export proceeds. The index has a mean of zero and ranges in value from -2.66 (full capital controls) to 2.66 (complete liberalization), although in our sample the lowest observed value is -1.77. It is important to note that a lower score on the Chinn-Ito index does not indicate more complete closure on cross-border financial transactions (i.e., the intensity of capital controls), since the index's components are calculated from dummy variables simply indicating the presence or absence of the four types of restrictions outlined above. Thus, it is conceivable for a country to have each type of restrictions in place – resulting in a minimum score on the Chinn-Ito index – yet still have some level of capital inflows. In other words, the Chinn-Ito index measures the government's financial openness *policies*, rather than the presence or absence of international capital *flows*.[22]

Results

In order to estimate four of our five models (*DJBROAD*, *RRBROAD*, *MOREFLEX*, *FEARPEG*) we use conditional logit estimation and also include year fixed-effects to account for heterogeneity across units. In addition, robust standard errors are clustered on the state unit of observation. For our final dependent variable (*REER*), we use OLS with fixed-effects both on

[22] In robustness checks, additional measures of global financial integration (external debt/GDP, gross private capital flows/GDP, global interest rates, interest rates in the "base" country) were not statistically significant and did not alter the substantive results presented here. Results available on request.

the country and year, again with robust, clustered standard errors.[23] Our first dependent variable (*DJBROAD*) measures the stated (*de jure*) exchange rate regime of each country, where the variable is coded "1" if state *i* chooses a "fixed" exchange rate as defined previously. The estimates of this model can be found in the first column of Table 7. The estimate of # *Disputes* is positive and statistically significant, but the coefficient on *Dispute Loss* is not statistically significant. Thus, dispute losses appear to have little bearing on a country's stated exchange rate policy, yet the overall number of disputes does appear to influence choice, but towards the direction of fixing the exchange rate.

A different picture emerges, however, when we turn to measures of *de facto* exchange rate behavior (*RRBROAD*), found in column 2 of Table 7. In this specification, # *Disputes* remains positive and statistically significant, but *Dispute Loss* is now negative and statistically significant. Thus, when examining measures of exchange rate behavior (rather than stated policy), losses in the trade dispute process appear to make states less likely to adopted a fixed exchange rate – an outcome predicted by our theory. The size of this effect is not trivial. For example, moving from one dispute loss to three leads to a thirteen percent decrease in the probability of adopting a *de facto* fixed exchange rate. Five dispute losses in a year reduce the probability by nearly thirty percent.[24]

The continuing positive and significant result for # *Disputes* likely arises from the fact that large trading states, which are more likely to maintain fixed exchange rates to provide for

[23] For each model, we list the countries included in the sample in the Appendix. Many countries are dropped because their exchange rate policies do not vary over time within the sample, making it impossible to estimate a fixed-effects model on those countries.

[24] These marginal effects calculations are done using unconditional fixed effect logit specifications, with all other variables held constant at their means. These unconditional specifications yield substantively similar results to the conditional logit models. We adopt this strategy, since marginal effects in the conditional logit models are dependent on the group/country (http://www.stata.com/support/faqs/stat/mfx_unsuit.html) and since Katz (2001) has found that bias in unconditional fixed effects logit models (stemming from the incidental parameters problem) is negligible in panel datasets where T>16. Calculations done using the *margins* command in Stata 11.0.

stability in tradable goods, are the most frequent users of the GATT/WTO dispute settlement system. Another possible explanation for this result is that states mired in numerous GATT/WTO disputes hold tightly to their stated exchange rate commitments in order to not behave in a "suspicious" manner. If a state did attempt exchange rate manipulation or suddenly abandon a peg with many disputes pending, the plaintiffs could take this as *prima facia* evidence that a country is worried about adverse effects from the dispute process.

Few of the remaining control variables achieve statistical significance, which is not surprising given the presence of country and year fixed effects. *GDP* and *KAOpen* are positive and significant, both in line with past research and our theoretical expectations.

To further test our hypotheses, we use the same *de facto* measures of exchange rate policy, but only examine cases where the *de jure* policy is indicated to be a fixed exchange rate. *FEARPEG* thus measures the likelihood of deviating from a stated peg: an outcome we predict is more likely as trade dispute losses mount, given the strong correlation between exchange rate flexibility and depreciation. As the estimates of this model show, in column 3 of Table 7, higher numbers of dispute losses do indeed correlate with an increased likelihood of deviating from a *de jure* peg. Moreover, this effect is quite pronounced: moving from one dispute loss to three results increases the probability of abandoning a *de jure* peg from three percent to nearly 20%. This result is in contrast with the estimates for *GATT/WTO* and *# Disputes*, which show that membership in the GATT and/or WTO as well as involvement in increasing numbers of disputes lead states to be *less* likely to deviate from their stated peg.

Our next model, the estimates of which are presented in column 1 of Table 8, is a variation on the previous test: *MOREFLEX* examines year-to-year change in exchange rate regimes using the four-point Reinhart-Rogoff index (as we describe above). As expected,

measuring these year-over-year changes in exchange rate policy yields very similar results to the *de jure* versus *de facto* model: increasing the number of dispute losses from one to three doubles the predicted probability that a state will shift toward a more flexible exchange rate regime in a given year from 2.1% to 4.2%. Given the rarity of such events in the data (Table 5), this is a substantively meaningful change in *MOREFLEX*.

Finally, we examine values of real effective exchange rates to look for evidence of currency devaluations on the heels of trade dispute losses. Here, our results are extremely strong: *Dispute Loss* is negative and highly statistically significant. Thus, states who lose more GATT/WTO disputes tend to experience greater currency depreciation.[25] Again, the substantive effect is strong. When *Dispute Loss*=0, the predicted value of *REER* (with all other variables at mean values) is 110.74; at *Dispute Loss=1*, the predicted value of *REER* is 110.32, equal to a depreciation of 0.4%. At *Dispute Loss=5*, *REER* equals 108.63, a further depreciation of 1.5%. Finally, at the maximum value of *Dispute Loss* (12), *REER* equals 105.69, a cumulative 4.6% depreciation over the *Dispute Loss=0* case.

While this evidence of a correlation between GATT/WTO disputes and real exchange rate depreciation is not necessarily indicative of active government policy to drive down the value of the currency, it may be evidence of "tacit" exchange rate protection, as noted above. Moreover, this result, viewed in combination with the previous findings on exchange rate regime choice, strongly suggests that GATT/WTO defeats lead countries to pursue exchange rate policies aimed at enhancing international competitiveness and (at least partially) offsetting the domestic welfare effects of repealing trade protection. In this model # *Disputes* is not statistically significant, but *GATT/WTO* is positive and statistically significant. As with previous

[25] Substituting a first-differenced REER as the dependent variable generates very similar results are reported here. This is not surprising given that the existing model is estimated with two lagged endogenous variables. Results available on request.

models, few control variables are statistically significant in these final two models, except for *Inflation,* which as expected, is negative and statistically significant.

Conclusions

How and under what conditions do countries' international trade commitments affect their exchange rate policy choices? In this paper, we have posited that negative outcomes in the GATT/WTO dispute settlement process make states more likely to alter their exchange rate policies as a substitute for protectionist trade policies that must now be abandoned. Using multiple measures of exchange rate policy choice, we find robust statistical evidence that states act as "sore losers" in the aftermath of defeats in the GATT/WTO: across a broad panel of countries over the last three decades, countries are more likely to adopt (or shift to) flexible exchange rates, more likely to "fear pegging," and more likely to experience real depreciations following adverse rulings in GATT/WTO disputes. In other words, more rigidly binding international trade commitments make countries less willing to make firm international monetary commitments to stable, fixed exchange rates.

While we believe these initial results are strong evidence that countries employ exchange rate policyf as a substitute for trade protection, more work clearly remains in order to fully understand the connections between trade and exchange rate policies. Indeed, while our results confirm that governments do appear to alter their exchange rate policies after GATT/WTO dispute losses, they also raise new, puzzling questions. For example, why do increasing numbers of disputes have different effects than the losses in those disputes? Similarly, does the identity of the "victor" in these disputes influence the exchange rate behavior of the "loser"? Future

research should focus on answering questions such as these, in order to shed additional light on the relationship between multilateral trade commitments and international monetary relations.

More broadly, our analysis has important implications for our understanding of international cooperation. Specifically, it suggests that some international agreements may not be the robust credible commitment mechanisms that international relations scholars often assume them to be. As our findings suggest, whether international agreements such as the WTO are "ties that bind" depends critically on a government's other policy options. When alternative domestic policies can offset or overturn the domestic consequences of international commitments, international agreements may not achieve their stated goals. In the context of international trade, we might therefore observe *de jure* free trade (i.e., the reduction of tariffs and non-tariff barriers) in tandem with *de facto* protection through exchange rate manipulation – an outcome that is unlikely to yield the expected economic benefits of trade liberalization but might be politically advantageous for domestic political reasons.

While our findings suggest that this type of behavior is common in the realm of international trade, its prevalence in other issues areas remains an empirical puzzle in international relations. To the extent that governments do seek to circumvent international commitments through alternative means, however, the logic underlying exchange rate protection sheds light on the compliance problem in international cooperation. In particular, it suggests that governments are less likely to comply with international agreements when they retain domestic autonomy over alternative policies that are close substitutes for the proscribed behavior. In these cases, we are likely to observe high levels of compliance but few meaningful effects on actual outcomes, as countries comply narrowly with the "letter of the law" while violating the spirit of international agreements by pursuing offsetting domestic policy substitutes. Future research that

identifies the degree of "substitutability" between alternative government policies might lead to important new insights about the conditions under which international agreements actually have the intended effect on states' behavior in the contemporary world economy.

TABLES 1 & 2 – *DE JURE* AND *DE FACTO* EXCHANGE RATE REGIMES, 1973-2002

Reinhart-Rogoff, 4-point classification

Regime	Observations	Percent
"Fixed"	863	36.20
Crawling peg/band (+/- 2%)	835	35.03
Wider band/managed float	598	25.08
Freely floating	88	3.69
Total	***2384***	***100***

IMF official, 4-point classification

Regime	Observations	Percent
Pegged	1304	50.44
Limited flexibility	224	8.67
Managed floating	555	21.47
Independent floating	502	19.42
Total	***2585***	***100***

TABLES 3 & 4 – *DE JURE* AND *DE FACTO* EXCHANGE RATE REGIMES (BINARY), 1973-2002

Reinhart-Rogoff (de facto) (RRBROAD)

Regime	Observations	Percent
"Fixed"	1698	71.22
"Floating"	686	28.78
Total	***2384***	***100***

IMF official (de jure) (DJBROAD)

Regime	Observations	Percent
"Fixed"	1528	59.11
"Floating"	1057	40.89
Total	***2384***	***100***

TABLE 5 – YEAR-TO-YEAR- CHANGE IN *DE FACTO* EXCHANGE RATE REGIME (*MOREFLEX*), 1973-2002

Variable	Observations	Percent
More flexible (RR_t>RR_{t-1})	67	2.91
No change/less flexible (RR_t<=RR_{t-1})	2238	97.09
Total	***2305***	***100***

TABLE 6 – FEAR OF PEGGING (*RRBROAD*=0, *DJBROAD=1) (FEARPEG*), 1973-2002

Regime	Observations	Percent
Yes	321	14.02
No	1968	85.98
Total	***2384***	***100***

TABLE 7 - ESTIMATES OF THE DETERMINANTS OF EXCHANGE RATE REGIME CHOICES

Variable	***De Jure Regime***	***De Facto Regime***	***"Fear of Pegging"***
GATT/WTO	1.559	-0.683	-22.860***
	(1.109)	(1.105)	(4.489)
# Disputes	0.126**	0.201*	-0.211*
	(0.057)	(0.104)	(0.127)
Dispute Loss	***0.004***	***-0.235****	***0.777****
	(0.093)	***(0.113)***	***(0.448)***
Openness (ln)	-0.007	0.014	-4.407
	(1.057)	(1.200)	(2.998)
Base Trade	-0.112	2.679	3.022
	(5.479)	(6.288)	(5.722)
Agr Exports	0.154**	0.066	0.029
	(0.064)	(0.052)	(0.141)
Mfg Exports	0.053**	-0.009	-0.115**
	(0.022)	(0.017)	(0.048)
Inflation (ln)	-0.172	0.332	-1.302***
	(0.255)	(0.246)	(0.426)
Growth	-0.036	0.140**	0.015
	(0.041)	(0.059)	(0.099)
Current Account	0.065	0.069	-0.157
	(0.041)	(0.054)	(0.099)
GDP (ln)	-11.663***	7.449*	16.417**
	(4.002)	(3.999)	(7.595)
pcGDP (ln)	12.568***	-8.704**	-20.803**
	(3.897)	(3.922)	(10.211)
Polity	-0.094	-0.087	0.062
	(0.058)	(0.056)	(0.115)
CBI	1.171*	0.451	-4.805**
	(0.708)	(0.785)	(1.977)

Variable	***De Jure Regime***	***De Facto Regime***	***"Fear of Pegging"***
KA Open	0.085	0.944***	-0.935*
	(0.236)	(0.335)	(0.549)
Observations	*1063*	*712*	*424*
Number of countries	*51*	*37*	*24*

NOTE: Conditional (fixed effects) logit estimation used for each column (with clustered standard errors in parentheses). See Appendix for countries included in each sample.

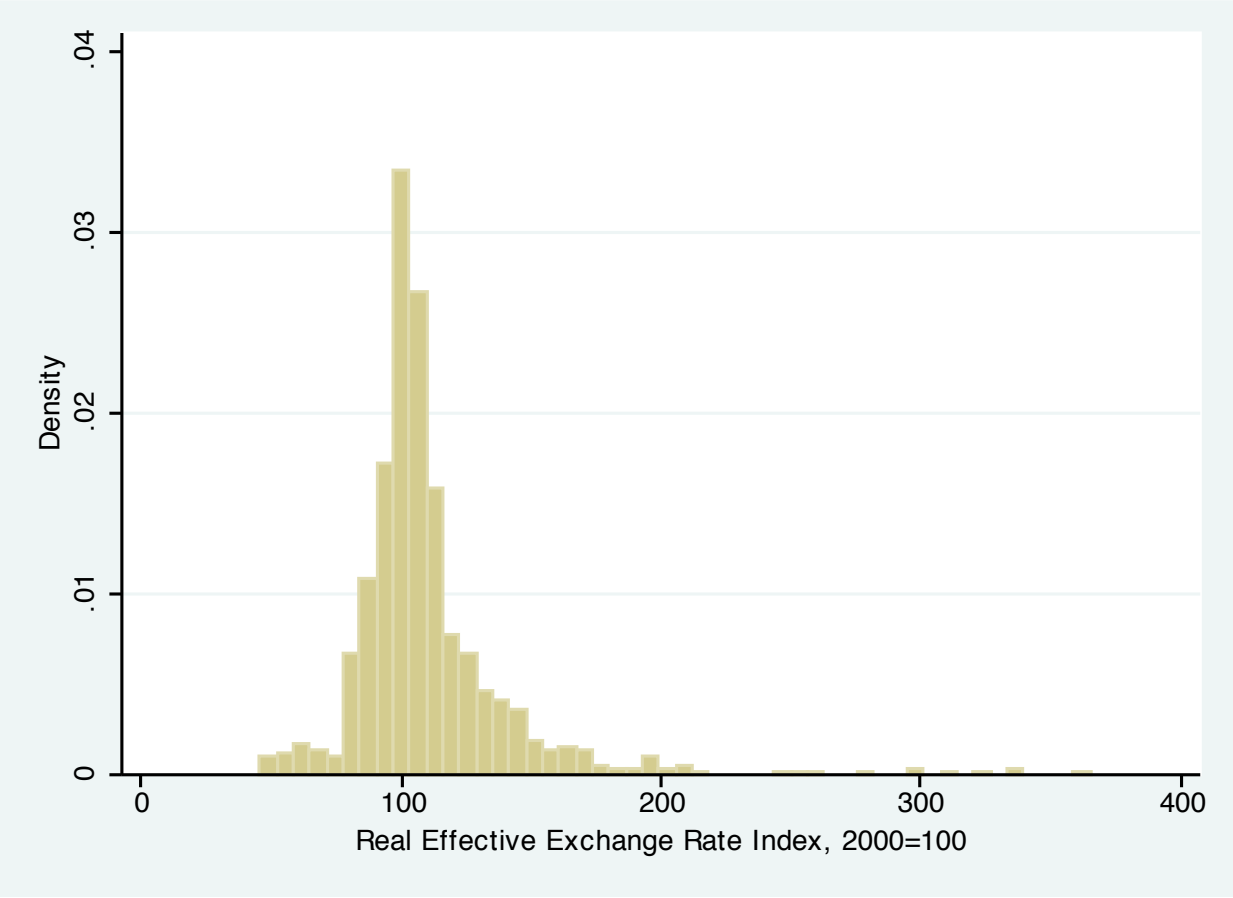
TABLE 8 – ESTIMATES OF THE DETERMINANTS OF EXCHANGE RATE POLICY CHANGE

Variable	***More Flexible Regime***	***Real Effective Exchange Rate***
GATT/WTO	0.763	4.243**
	(1.383)	(1.695)
# Disputes	-0.251**	-0.087
	(0.106)	(0.078)
Dispute Losses	***0.346****	***-0.421******
	(0.187)	***(0.155)***
Openness (ln)	-0.128	5.361
	(3.305)	(5.860)
Base Trade	0.617	4.740
	(5.763)	(9.978)
Agr Exports	0.003	0.187
	(0.095)	(0.187)
Mfg Exports	0.031	-0.046
	(0.030)	(0.045)
Inflation (ln)	-1.124***	-1.857***
	(0.412)	(0.673)
Growth	-0.011	0.221
	(0.048)	(0.141)
Current Account	-0.108	0.088
	(0.069)	(0.101)
GDP (ln)	3.662	-13.327
	(5.206)	(12.376)
pcGDP (ln)	-4.843	28.971**
	(6.802)	(11.945)
Polity	-0.075	0.023
	(0.123)	(0.183)
CBI	1.121	-0.510
	(1.241)	(1.630)

Variable	***More Flexible Regime***	***Real Effective Exchange Rate***
KA Open	-0.051	0.512
	(0.573)	(0.642)
$REER_{t-1}$	--.--	0.953***
		(0.066)
$REER_{t-2}$	--.--	-0.138***
		(0.052)
Constant	--.--	-18.128
		(131.128)
Observations	*606*	*867*
Number of countries	*31*	*57*

NOTE: Conditional (fixed effects) logit (with clustered standard errors in parentheses) shown in column 1. Fixed-effects OLS (with clustered standard errors in parentheses) in column 2. Both models also include year fixed-effects, the estimates of which are omitted to conserve space. See Appendix for countries included in each sample.

FIGURE 1 – REAL EFFECTIVE EXCHANGE RATE INDEX (REER), 1977-2000 (N=867)



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APPENDIX

Countries in each sample (Tables 7 & 8)

De jure regime (DJBROAD)

Algeria, Argentina, Australia, Bolivia, Burundi, Chile, China, Colombia, Costa Rica, Cyprus, Dominican Republic, Ecuador, Egypt, El Salvador, Finland, France, Gambia, Ghana, Greece, Guatemala, Haiti, Honduras, Iceland, India, Israel, Italy, Jamaica, Kenya, South Korea, Kuwait, Madagascar, Malawi, Malaysia, Mauritius, Morocco, New Zealand, Norway, Pakistan, Paraguay, Peru, Philippines, Portugal, Spain, Sri Lanka, Sweden, Thailand, Tunisia, Turkey, United Kingdom, Venezuela, Zimbabwe

De facto regime (RRBROAD)

Australia, Bolivia, Brazil, Chile, China, Colombia, Costa Rica, Dominican Republic, Ecuador, Egypt, El Salvador, Greece, Guatemala, Haiti, Honduras, Iceland, Indonesia, Israel, Italy, Jamaica, Jordan, Kenya, South Korea, Madagascar, Malawi, Malaysia, Mauritius, Mexico, New Zealand, Paraguay, Philippines, Portugal, Sweden, Switzerland, Thailand, United Kingdom, Venezuela

"Fear of pegging" (FEARPEG)

Algeria, Australia, Bolivia, Burundi, Dominican Republic, Egypt, El Salvador, Ghana, Guatemala, Haiti, Honduras, Iceland, Italy, Jordan, Kenya, Malawi, Mauritius, Norway, Paraguay, Sweden, Turkey, United Kingdom, Venezuela, Zimbabwe

More flexibility (MOREFLEX)

Argentina, Australia, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, Ghana, Greece, Guatemala, Haiti, Honduras, Iceland, India, Indonesia, Iran, Ireland, Israel, Italy, Jamaica, Jordan, Kenya, Korea, Madagascar, Malawi, Malaysia, Mexico, New Zealand, Nigeria, Pakistan, Paraguay, Philippines, Sri Lanka, Sweden, Switzerland, Thailand, Turkey, United Kingdom, Uruguay, Venezuela, Zimbabwe

Real effective exchange rate (REER)

Algeria, Australia, Austria, Belgium, Bolivia, Burundi, Canada, Chile, China, Colombia, Costa Rica, Cyprus, Denmark, Dominican Republic, Ecuador, Fiji, Finland, France, Gabon, Gambia, Ghana, Greece, Guyana, Hungary, Iceland, Iran, Ireland, Israel, Italy, Japan, Malawi, Malaysia, Morocco, Netherlands, New Zealand, Nigeria, Norway, Pakistan, Papua New Guinea, Paraguay, Philippines, Poland, Portugal, Saudi Arabia, Sierra Leone, Spain, Sudan, Sweden, Switzerland, Togo, TrinidadandTobago, Tunisia, Uganda, United Kingdom, Uruguay, Venezuela, Zambia