FREE TRADE AGREEMENTS AND THE CONSOLIDATION OF DEMOCRACY[*]

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Abstract

We develop a model to study the relationship between participation in free trade agreements (FTAs) and the sustainability of democracy. We find that, because of the rent-destructing effect of FTAs, they can help democracy to "consolidate" in a country. If authoritarian groups seek power largely to appropriate rents, an FTA reduces their incentives to do so, increasing the likelihood that democracy will endure in the country. In turn, this implies that governments in fledgling, unsecure democracies have an extra motive to engage the country in FTAs: to strengthen democracy or, if a democratic reversal is inevitable, to constrain the rent-seeking activities of future autocrats. In a dataset with 126 countries over 1948-2007, we find strong empirical support for our theoretical predictions. Specifically, we find that participation in FTAs increases the longevity of democracies, whereas a higher risk of democratic failure induces governments to boost their FTA commitments. These findings provide a novel rationalization for the rapid growth of regionalism and the increasing level of worldwide democratization since the late 1980s.

Key words: Regionalism; rent destruction; political regimes; trade liberalization

JEL codes: F13, F15, D72, F53

"Striking down trade barriers is critical to sustaining democracy […] throughout the region."
[Former U.S. President George W. Bush at the 2001 summit of the potential signatories of the Free Trade Area of the Americas (*New York Times*, 4/18/2001)]

1. INTRODUCTION

When the United States announced the intention to pursue a free trade agreement with Central America countries, there were three explicit goals, one of which was "to support democracy in the region" (www.whitehouse.gov, 16 January, 2002). Such views are not restricted to the Americas. The demand of Eastern and Central European countries for membership in the European Union, for example, has also been linked to the countries' democratic concerns. Indeed, governments often declare "promoting democracy and political stability" as a central force behind their decision to form regional trade agreements (World Trade Organization 2011). Of course, this may be mere rhetoric. But maybe not.

Figure 1: Number of free trade agreements in force & cumulative number of new democracies and of new autocracies (1948-2007)
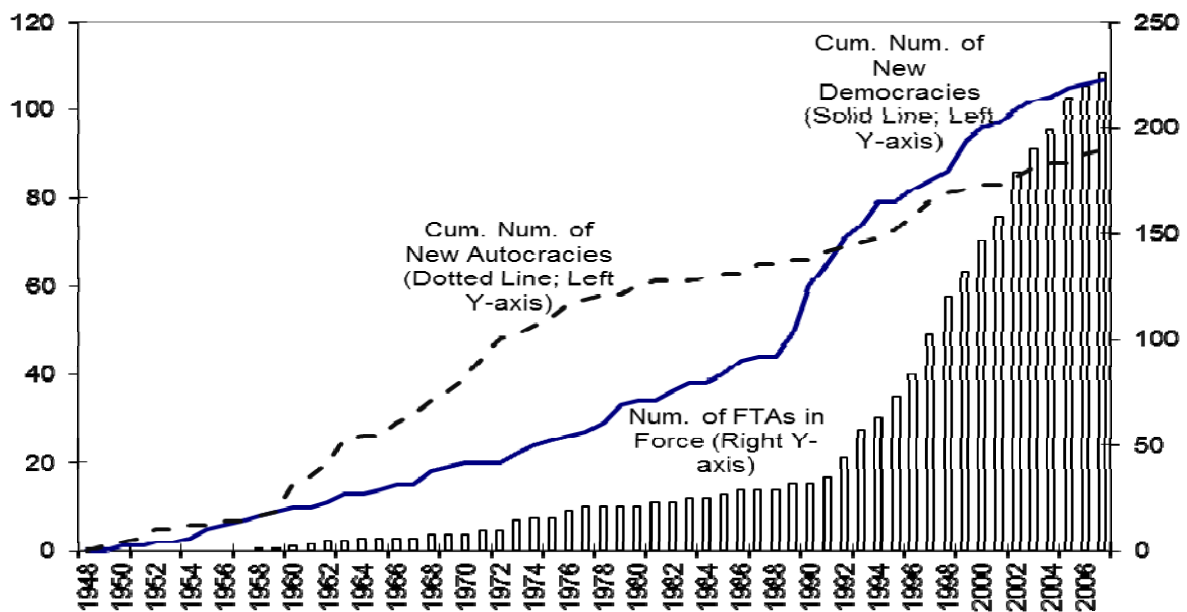
Notes: See notes in the online Appendix 2 (http://personal.lse.ac.uk/ornelas/Liu&Ornelas_Appendices.pdf) for the data sources of free trade agreements. "New democracy" is defined as a change from a non-positive to positive polity2 score. "New autocracy" is defined as a change from a positive to non-positive polity2 score.

Consider Figure 1. The bars show the cumulative number of free trade agreements (FTAs) in force, while the solid line shows the cumulative number of transitions to democracy throughout the world since 1948. Both trends have accelerated since the early 1990s. The dotted line shows instead

the cumulative number of transitions to autocracies; this trend has visibly slowed down since the 1980s.[1] We argue that these phenomena are not independent from each other, and that official claims linking participation in FTAs and the sustainability of democracy, like the one quoted above, have a meaningful content. Specifically, we show that participation in FTAs can serve as a commitment device to destroy future protectionist rents. Since such rents are attractive for autocratic groups, FTAs lower their incentives to seek power. While this has little value in established democracies, where the rule of law is strong and the risk of authoritarian disruption is negligible, it can be of great importance for new, unstable democracies. These threatened states will therefore have an *extra* incentive to seek involvement in FTAs, over and above the agreements' potential trade gains.

We provide the theoretical basis for our claims by extending the trade integration model developed by Ornelas (2005a) to allow for endogenous changes in the political regime. In that otherwise standard model, at any trade regime domestic firms exchange contributions for protection with the government, which cares about national welfare and the contributions it receives. The government then defines the trade regime (i.e. whether to form an FTA) considering the political equilibrium under each trade regime. The key to understand the impact of an FTA is the recognition that the equilibrium of the (*ex post*) external tariff game changes with the constraint imposed by the agreement on the internal tariffs. Taking this into account, one finds that even though an FTA still permits lobbying for protection against excluded countries, the volume of protectionist rents falls with the formation of the agreement.

In a dynamic setting this implies that, all else equal, groups motivated mainly by office rents will have lower incentives to seek power if the country is deeply engaged in FTAs (and withdrawal from the agreement is costly). Authoritarian groups tend to fit this description best,[2] as their aptitude to resort to violence rather than to rely on accountability to keep power implies lower incentives to pursue policies that favor the population at large.[3] If the gain of authoritarian groups from keeping power falls when the country is engaged in FTAs, while the costs and risks from

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[1] In Figure 1 we only consider changes in the political regime status of *existing* countries. Thus, a newly formed state (e.g. those created from the breakdown of the USSR in the early 1990s) is represented in any of the two transition curves only when it changes its political regime *after* gaining independence.

[2] See Dixit (2010) for a similar view, which he adopts to analyze differences in the policy-making process under autocracy and democracy when rulers have to rely on bureaucrats to implement policies.

[3] Indeed, several studies have found that authoritarian regimes are associated with increased trade protection and trade regulations, e.g. Aidt and Gassebner (2010), Banerji and Ghanem (1997), Mansfield et al. (2000) and Rama (1994). Mitra et al. (2002), estimating welfare and campaign contributions weights for Turkey in periods of both democratic and authoritarian administrations, provide additional support for the presumption that, relative to special interests, welfare concerns are more important for democratic governments than for dictatorships.

attempting a coup d'état are unaltered by the agreement, the likelihood of democratic failure will, all else being equal, be lower if the country is involved more intensively in FTAs.

If the incumbent government in an unstable democracy realizes this effect of "democratic consolidation," it will seek participation in FTAs more actively than it would otherwise, in order to weaken the authoritarian threat. Yet even if the dictatorial group takes control despite the FTA, the agreement will constrain its rent-extraction activities. For both of these reasons, unstable democracies tend to enter in FTAs more frequently than other countries. In turn, participation in FTAs increases the likelihood of democracy survival in those countries.

Analyzing the formation of FTAs and the strength of democracy in 126 countries over 1948-2007, we obtain empirical support for both of our main theoretical results. Employing duration analysis techniques, we find that greater participation in FTAs lowers the likelihood of democracy failure in a country. Using the estimated hazard rates from the duration analysis, we find as well that a higher risk of democratic breakdown induces countries to participate more actively in FTAs. Our empirical results are robust to many different econometric specifications and to different measures of democracy.

One of our empirical challenges is to define *how* unstable a democracy is. We do so by relying on the approach pursued by Persson and Tabellini (2009), who estimate the likelihood of democratic breakdown employing the concept of "democratic capital." The domestic component of democratic capital takes into account the history of democracy in the country. The longer the country has experienced democracy, and the more recent is its democratic experience, the greater the country's stock of domestic democratic capital. The foreign component of democratic capital encompasses instead current levels of democracy abroad. The greater the number of democratic countries, and the closer those democracies are to a country, the greater is that country's stock of democratic foreign capital. Along with other covariates, these two components of democratic capital allow us to estimate the likelihood of democracy failure in a country. Our finding that greater participation in FTAs significantly reduces this probability helps to explain why democratic experiences have been particularly successful since the late 1980s.

Having estimated the likelihood of democracy failure, we use its fitted values to estimate changes in FTA participation. In doing so, we consider only the portion of the likelihood that is not predicted by FTA participation. Our finding that higher levels of regime uncertainty induce democratic governments to participate more actively in FTAs helps to rationalize the outbreak of regionalism since the early 1990s.

Interestingly, our predictions hold consistently only for full-fledged agreements, signed under GATT's Article XXIV. Article XXIV requires free trade agreements to cover most of the trade among the members and that members liberalize fully vis-à-vis each other. By contrast, agreements signed under the Enabling Clause of the GATT permit many exceptions and are often not fully implemented. We do not find any association between those partial-scope preferential trade agreements and democracy survival, or between political instability and formation of partial-scope agreements. These stark differential results offer support for the rent-destructing mechanism we put forward, as the partial-scope arrangements, unlike those signed under Article XXIV, impose very few restrictions on the availability of rents from protection.

It is also possible that FTAs help to sustain democracies not because of their rent destruction effects, but because democratic countries demand democracy from their FTA partners.[4] This is a plausible alternative mechanism that would lead to similar predictions. Yet our empirical tests show that FTAs with more democratic partners are about as valuable for the sustainability of a country's democracy as FTAs with less democratic partners. Thus, pressure from FTA partners cannot be the sole driver of this phenomenon.

We are not the first to claim that participation in trade agreements is correlated to being democratic. For example, Mansfield, Milner and Rosendorff (2002) find that pairs of democratic countries are more likely to share a trade agreement than pairs in which at least one country has an authoritarian political regime. Mansfield, Milner and Pevehouse (2008) find that this holds for different types of trade agreements except the "shallowest" ones, according to a five-tier classification. We show here that the effect of democratic status on FTA formation is actually more subtle, operating largely through its effect on democratic instability. In fact, in our empirical analysis the direct effect of democratic status on the likelihood that countries will form FTAs varies from positive to negative depending on how we measure democratic status. The effect of democratic instability, on the other hand, is remarkably consistent across specifications.

Mansfield and Pevehouse (2006), like us, distinguish between different types of democracies and their willingness to join international organizations. Specifically, they find that countries that have undergone a transition to democracy in the previous five years are more likely to join international organizations, in particular those made up of more democratic states. Two central

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[4] A related idea is developed by Pevehouse (2002), who argues that, because of signaling and commitment to political reforms, joining (although not the participation on its own) an international organization that has high "democratic density" tends to increase the longevity of new democracies. In line with his contention, but differently from our analysis, Pevehouse includes in his empirical analysis not only free trade agreements but also many international organizations that are unrelated to international trade.

differences between our analysis and Mansfield and Pevehouse's is that we estimate each country's hazard out of democracy (rather than just distinguishing new democracies from old democracies) and that we do not pool all types of international organizations together. This difference matters, as we find a strong effect of democratic instability on FTA participation but not on participation in partial-scope trade agreements.

The idea that governments can manipulate state variables to constrain their successors' choices was first advanced in the macroeconomics political economy literature.[5] More recently, Acemoglu and Robinson (2006) have developed a general framework to study circumstances when an incumbent democratic government can design economic policies to irreversibly change the expected net benefit of future coups.[6] A related reasoning is employed here to show that a democratic government, when faced with the prospect of political disruption, may want to limit the ability of a potential authoritarian government to create rents through trade policies. We innovate in this dimension by showing, theoretically and empirically, that an FTA can be an effective tool for that purpose.[7]

There is also an important line of research that links democracy to trade liberalization and trade openness.[8] The forces typically emphasized in that literature are however quite different from the mechanism we advance here. Moreover, and critically, in this paper we focus on the role of trade *agreements*, where an external commitment makes the policy costly enough to reverse so that it can credibly affect the action of future governments.[9] A unilateral tariff reduction would clearly not fulfill this requirement.

The paper proceeds as follows. Section 2 describes the model. Section 3 presents the analysis of the incentives to form a free trade agreement. Section 4 discusses our empirical strategy. The data is presented in Section 5. We show our empirical results in Section 6. We conclude in Section 7.

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[5] See e.g. the pioneering contributions by Alesina and Tabellini (1990) and Persson and Svensson (1989).

[6] They demonstrate, for example, how trade and capital account liberalization reduce equilibrium taxation under democracy while also rendering coups more costly through the impact of openness on factor prices.

[7] This contrasts with an alternative (and ubiquitous) view in the trade literature that regards FTAs as rent-*creating* devices (e.g. Grossman and Helpman 1995). See Freund and Ornelas (2010) for a discussion of that literature.

[8] See for example Giavazzi and Tabellini (2005), O'Rourke and Taylor (2007), Lopez-Cordova and Meissner (2008), and Stroup and Zissimos (2011). Barro (1999) provides a broader view of the determinants of democracy.

[9] This is the view of trade agreements espoused for example by Maggi and Rodriguez-Clare (1998, 2007), although in their analyses a government enters in a free trade agreement not to affect its successor's policies, but its own (otherwise time-inconsistent) future policies. See Bagwell and Staiger (2010) for a discussion of this and other roles of trade agreements.

2. THE MODEL

2.A. The economic structure

We consider a 3-country, *N*-sector competitive economy where in each sector there is a "natural importer" country that would import the good from the other two countries under free trade. Goods are produced under constant returns to scale. One unit of the numeraire good 0 is produced with one unit of labor. All other goods $j = 1…N – 1$ are produced with labor and a sector-specific factor. Thus, whenever good 0 is produced in equilibrium, which we assume to be the case, the wage rate equals unity and all general equilibrium forces are absorbed by that sector.

The analysis is conducted from the perspective of a "Home" country. Home's population consists of a continuum of agents with measure one. Each agent is endowed with one unit of labor, whereas specific factors are owned by a negligible fraction of the population. Consumers have quasi-linear utility of the form $U = q^0 + \sum_{j=1}^{N-1}\left[Aq^j - (q^j)^2/2\right]$, which generates demand $D^j = A – p^j$ for good *j*.

Home is the natural importer of goods $m = 1…M$, country *Y* is the natural importer of a subset *E* of different goods, and country *Z* is the natural importer of the remaining $(N – M – E – 1)$ non-numeraire products. Home's owners of the specific factor used in sector *j* earn $\pi^j(p^j)$, where p^j denotes the price of good *j* in Home's market. The domestic supply of each imported good *m* is $S^m(p^m) = d^m p^m$ and the supply of each exported good *x* is $S^x(p^x) = d^x p^x$, where $d^x > d^m > 0$. An analogous specification applies for the supply and demand structures of countries *Y* and *Z*. Home can use specific import tariffs in each import sector; other policy instruments are assumed unavailable. We represent Home's tariff on imports from country *j* by t_j, $j = Y, Z$. Because all import sectors are identical, we will write prices and tariffs without sector-identifying superscripts.

Prices in the three countries are linked by arbitrage conditions. For a generic product imported by Home, this condition is

(1) $$p = p_Y + t_Y = p_Z + t_Z,$$

provided that tariffs are not prohibitive. Using this arbitrage condition, market-clearing requires

(2) $$D(p) – S^m(p) = S^x(p – t_Y) – D(p – t_Y) + S^x(p – t_Z) – D(p – t_Z).$$

Using the expressions for demand and supplies defined above, condition (2) can be rewritten as

(3) $$\hat{p}(t_Z, t_Y) = \gamma + (t_Z + t_Y)\rho,$$

where $\gamma \equiv 3A/(3+d^m+2d^x)$ and $\rho \equiv (1+d^x)/(3+d^m+2d^x)$.

When Home is not a member of a free trade agreement, it follows GATT's requirement of

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non-discrimination. When Home is in an FTA, imports from the FTA partner are duty free, but imports from the excluded country remain taxed, although the country's optimal external tariff will in general change as a result of the FTA.

2.B. The political structure

There is a democratically elected government that rules Home. The group represented in the government enjoys power because there are rents for holding office. The sources of those rents are transfers/bribes offered by the private sector, which help government officials in exchange for more favorable policies. Thus, the rents are specific to incumbency, as in models like Besley and Coate's (2001).

The group in power also cares about national welfare. As in much of the political economy literature, we consider that a party's welfare concerns reflect the links with its "constituency." In general, the larger the constituency of the elected government, the higher the weight the government attaches to national welfare, relative to office rents. A direct implication is that a larger constituency induces the government to internalize a greater share of the distortions created by its policies. We therefore presume that the welfare concerns of a political group, stemming from the group's link with its constituency, are unrelated with incumbency, unlike the transfers obtained through interactions with the private sector.

Let us define the measures of welfare. Welfare generated in an import sector is denoted by $W^m(t)$, whereas W^x represents welfare from an export sector. The former is defined as the sum of consumers' surplus, tariff revenue and producers' surplus generate in that sector; the latter is defined as the sum of consumers' and producers' surplus in the sector.[10] Welfare aggregated across all non-numeraire import and export sectors is then $W^M(t) \equiv MW^m(t)$ and $W^X \equiv (N - M - 1)W^x$, respectively. National welfare, $W(t)$, aggregates welfare across all sectors:

$$W(t) \equiv 1 + W^M(t) + W^X = 1 + \sum_{m=1}^{M} W^m(t) + \sum_{x=M+1}^{N-1} W^x .$$

The preference of the political party in office—the government—is specified as

(4) $$G(t,T) \equiv \sum_{m=1}^{M} G^m(t,T^m) + \sum_{x=M+1}^{N-1} G^x ,$$

with $G^x \equiv W^x/b$ and

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[10] Note that we denote welfare in import-competing sectors as a function of the tariff, but not in export sectors. In reality, W^x also depends on tariffs, but on those imposed by foreign countries Y and Z. Since those tariffs are given from the perspective of the Home government under any trade regime, we employ this more concise representation for notational ease.

(5)
$$G^m(t,T^m) \equiv \frac{1}{b}W^m(t) + T^m,$$

where T^m denotes the transfer from import-competing sector m to the government, $T \equiv \sum_{m=1}^{M}T^m$, and b is a parameter that is inversely related to the size of the constituency of the government. We refer to b as the "political bias" of the government. Thus, if the government's constituency were very small, the government's political bias would be very high and it would care mainly about rents. Conversely, if the government's constituency were very large, the government's political bias would be very low and it would largely disregard rents.

We assume that producers within each industry can overcome free-riding problems in their lobbying activities. Because of the symmetry and independence across sectors, we focus on a single import-competing sector. The net payoff of producers in such a sector corresponds to the industry's aggregate profits, $\pi^m(t)$, subtracted of the transfers it gives to the local government, T^m.

As for example in Maggi and Rodríguez-Clare (1998), we model the interaction between government and each domestic industry as a Nash bargaining game, where each side obtains half of the total surplus from the negotiations process. Under the Nash bargaining protocol, the outcome of the bargaining process is jointly efficient. Thus, the "political tariff" resulting from this interaction satisfies

(6)
$$t^p = \arg\max[W^m(t) + b\pi^m(t)],$$

where the term in brackets represents (up to a constant) the joint payoff of the government and the industry in a representative import-competing sector. We concentrate on the case where the solution of problem (6) is interior. This corresponds to assuming that $b < b_{max} \equiv (1+d^m)(d^x-d^m)/(1+d^x)d^m$.

2.C. Equilibrium payoffs

In the absence of lobbying activities, the government can do no better than by setting the tariff in each import sector to maximize national welfare. As a result, in that case its payoff from each import-competing sector would be given by $W^m(t^p(b=0))/b$, or simply $W^m(b=0)/b$. Analogously, producers from each domestic industry m would obtain a payoff of $\pi^m(b=0) \equiv \pi^m(t^p(b=0))$.

We can then define the "political rents" created in the lobbying process in each import-competing sector as

(7)
$$PR^m \equiv \frac{1}{b}\left[\left(W^m(b) + b\pi^m(b)\right) - \left(W^m(b=0) + b\pi^m(b=0)\right)\right],$$

where functions W^m and π^m are evaluated at the political tariff when they are represented as a function of b. The expression in the first parenthesis of (7) is the maximized joint payoff of the

government and the industry (multiplied by b), while the expression in the second parenthesis is the value of the same function in the absence of lobbying. The difference between these two expressions represents the surplus that the lobbying process adds to the joint payoff of the government and the industry.

In equilibrium, the government obtains its reservation payoff in the industry plus its share of the political rents:

(8)
$$G^m = \frac{1}{b} W^m (b=0) + \frac{PR^m}{2}.$$

Aggregating across all sectors, we can write (4) evaluated at the equilibrium as

(9)
$$G \equiv G(t^p, T) = \frac{1}{b} W^M (b=0) + \frac{1}{b} W^X + \frac{PR}{2},$$

where $PR \equiv \sum_{m=1}^{M} PR^m$. Hence, the government obtains in equilibrium its reservation utility, $[W^M(b=0) + W^X]/b$, plus half of the political rents. This makes clear that the group in power does not fully internalize the welfare distortions due to its use of the political tariff.

In contrast, if the same political group were *out* of power, its payoff would be different even if the tariff were the same. The reason is that the group does not receive any rents if it is not in a position to enact policies. Accordingly, in that case the group would receive none of the available political rents, and its equilibrium payoff H would reflect only the concerns for its constituency:

(10)
$$H \equiv G(t^p, 0) = \frac{1}{b} W^M (b_{inc}) + \frac{1}{b} W^X,$$

where b_{inc} denotes the political bias *of the political group in office*. Since $W^M(b=0) \geq W^M(b_{inc})$ and $PR \geq 0$, it follows directly from (9) and (10) that there are benefits from holding office.

2.D. Coup threat

We consider a simple 2-period environment where there is a group of citizens representing a segment of the population that is not represented in power but may attempt to take power through force, initiating a dictatorship in the country. We are agnostic about the identity of the population represented by this group; it could be the military as well as part of the country's capitalists or the upper class, for example. In any case, if a coup is attempted and is successful, the authoritarian group takes power in the second period.

We assume the potential dictatorial group cares predominantly about its own well-being. That is, we treat the potential dictatorship as "kleptocratic." Moreover, since the supporting group of a dictatorship tends to be considerably smaller than that of a democratically elected government

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(being this a central reason why the group seeks to gain power through force, rather than through the ballot box), the forces limiting rent-seeking behavior tend to be weaker in a dictatorship. This suggests that an autocratic government would attach a higher weight on rents vis-à-vis national welfare than the democratic government. Accordingly, we consider that

A1: $b_D \leq b_A$,

where we use identifiers D (democratic) and A (autocratic) to distinguish between variables related to the incumbent democratic government and the authoritarian group, respectively. This is in line with the findings of Mitra et al. (2002) and also consistent with our empirical results, as we will see.

We let the probability of success of a coup depend negatively on the country's stock of "democratic capital." The notion of democratic capital (DC), introduced and developed by Persson and Tabellini (2009), proxies the strength of the country's democratic institutions. In nations with enduring democratic tradition, where the rule of law is strong, democratic capital tends to be abundant, virtually precluding the possibility of political disruption. Conversely, in countries lacking solid institutions, where the rule of law is weak, democratic capital is likely to be scarce, thus opening a tangible opportunity for successful coups. In the definition of Persson and Tabellini (2009), an important element shaping the stock of DC in a country is the country's democratic history. In fact, as North (1990) points out, the costs of altering political institutions are very low when the institutions are new, but increase as they get older.

We assume that the level of democratic capital is known by all agents in Home up to a constant θ with expected value zero. Specifically, we define the democratic capital of the Home country as $DC = \overline{DC} + \theta$, where θ is a real random variable with expected value $E(\theta) = 0$ distributed accordingly to distribution function Φ.

The probability of success of a coup depends also on how the population reacts to the attempt. In particular, success will be more likely the stronger the "support" of the pro-coup citizens and the weaker the "resistance" from the segments of the population opposed to the coup. We call the difference between support and resistance in the population the "net support" for a coup, and denote it by s. We normalize the units of s and DC so that an attempted coup is successful if and only if $s > DC$. Thus, from the perspective of the group considering subverting the country's democratic order, the probability of success is

(11) $$p \equiv prob\,(s \geq DC) = prob\,(s - \overline{DC} \geq \theta) = \Phi(s - \overline{DC}),$$

where p denotes the probability of success of the coup.

Both the democratic government and the authoritarian group discount future payoffs according to a (common) discount factor $\delta \in [0, 1]$. To understand when the authoritarian group will attempt to subvert the country's democratic order, we model the group's problem as simply as possible. In particular, we assume that, if the takeover attempt is successful, the authoritarian group imposes a dictatorship in the country and obtains its office payoff G^A in the second period. If the takeover attempt is unsuccessful, the group bears a fixed cost $K > 0$.[11]

When a coup is attempted, the present value payoff of the incumbent and of the authoritarian group are represented, respectively, as

(12) $$\Gamma^D = G^D + \delta[(1 - p)G^D + pH^D]$$

and

(13) $$\Gamma^A = H^A + \delta[(1 - p)(H^A - K) + pG^A].$$

In no coup were attempted, the incumbent government and the authoritarian group receive, respectively, G^D and H^A in each period.

The (risk-neutral) authoritarian group attempts to take power if and only if the expected utility from the endeavor is positive: $\Gamma^A > (1 + \delta)H^A$. Using (13), this condition is equivalent to

(14) $$p(G^A - H^A) > (1 - p)K.$$

That is, the authoritarian group will attempt to take power if its expected gain from seeking power is large relative to the expected cost of a failed coup.

To make explicit what is behind the probability of success of the coup and the gains from holding office, we use the definition of p and expressions (9) and (10) to rewrite condition (14) as

(15) $$\frac{1}{b_A}\left[W^M(b = 0) - W^M(b_D)\right] + \frac{PR^A}{2} > \frac{1 - \Phi(s - \overline{DC})}{\Phi(s - \overline{DC})}K.$$

In a consolidated democracy, where either the support for a coup is very low or democratic capital is knowingly very high, an attempt against the county's democratic system is unlikely, unless the costs of failure are too low—which is rarely the case—or the gains from holding power are very significant. Our central goal is to analyze how a free trade agreement affects the latter, and through that channel the endurance of democracy in a country.

Naturally, an FTA can be used to affect future policies only if its reversal is costly enough to inhibit future governments from reversing the arrangement. While here we simply assume that FTAs are irreversible, it would be relatively straightforward to extend the current model so that

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[11] Parameter K provides a proxy for the many kinds of penalties that could apply in such a case—incarceration, extradition, death and the like.

irreversibility becomes an equilibrium result, e.g. by relying on McLaren's (2002) notion that governments incur in "negotiating costs" when forming (or withdrawing from) FTAs. Ultimately, FTAs matter for commitment as long as there is *a* non-trivial cost to reverse them.[12]

3. THE DECISION TO FORM A FREE TRADE AGREEMENT

A free trade agreement between two countries is represented by the elimination of tariffs on each other's imports. Thus, the equilibrium under an FTA is analogous to the one described in Section 2, the only difference being the constraint imposed on the partner's reciprocal import tariffs. Without loss of generality, we let Home's potential FTA partner be country Y.

An FTA can be implemented by the incumbent government for reasons related or unrelated to the authoritarian threat. There are four possibilities. First, it is possible that the country is already a consolidated democracy, in the sense that condition (15) holds neither with nor without FTAs. This is the standard case considered in the regionalism literature, and it is not our goal to analyze it further here. Rather, we focus on situations where FTAs can be formed for "strategic" reasons.

Second, it is possible that the country's democracy is so fragile that condition (15) is satisfied whether or not there is an FTA in place. In that case, while an FTA cannot be used to prevent a coup, the possibility of losing power can affect the incentives of the incumbent government with respect to the formation of the agreement.

Finally, it is possible that an FTA affects the expected payoff of the authoritarian group and, as a result, its incentives to attempt to take power. In general, an FTA could either increase or decrease the incentives for a coup, making it worth seeking when it would not be without the agreement, or making the coup not worth pursuing when it would be in without the FTA.

Before starting our analysis, we need however to describe the effects of an FTA on the level of available political rents and the role of the political parameter b in shaping the welfare effects of an FTA. These results set the basis for the analysis of the political viability of FTAs.

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[12] Irreversibility is also coherent with history, as preferential trading arrangements *de facto* implemented are seldom turned down later on. Even in the rare circumstances when authoritarian regimes gained control of a country that participated in an effective trade agreement, the arrangement has been honored, as for example in Swaziland, a member of SACU. An exception to this rule—to our knowledge the only one—is the Andean Pact, from which President Hugo Chávez withdraw Venezuela in 2005. The other cases of implemented agreements being later disrupted are in Central America (CACM) and in the Caribbean (CARIFTA/CARICOM), but in both cases the agreements were disrupted due to balance of payments constraints during the debt crisis of the 1980's. Both were fully reactivated in the early 1990's.

3.A. The rent destruction effect

Ornelas (2005a) shows that an FTA moderates the role of political economy forces in the determination of tariffs, and that the mitigation of the politically driven distortions corresponds to a source of welfare gain that is more relevant, the more far-reaching the government's political motivations. Furthermore, an FTA diminishes the rents created in the lobbying process. Intuitively, because the arrangement provides free access to the partner's exporters, the market share of the domestic industry shrinks, at any given external tariff. As a result, the FTA makes any price increase brought by a marginal increase in the external tariff less valuable for the import-competing industries, lowering their incentives to lobby for higher external tariffs. In equilibrium, these lower incentives result in a lower external tariff and in fewer rents for the government.[13] The following lemma summarizes these effects.[14]

Lemma 1. The rent destruction effect of FTAs (Ornelas 2005a)

Everything else constant, an FTA

(a) improves Home's welfare by more (or reduces it by less), the higher the government's political bias; and

(b) reduces the political rents generated in the political process, this reduction being larger, the higher the government's political bias.

Lemma 1 allows us to analyze the conditions under which the Home government would choose to form an FTA.[15] The decision regarding the formation of an FTA is based on the anticipated impact of the agreement. The government implements the agreement if and only if it increases the government's present value payoff.

Before proceeding to analyze how the possibility of political disruption affects the willingness of the democratic government to form free trade agreements, it is important to note that, under A1, the authoritarian group will not want to form an FTA if the democratic government has rejected it. On the other hand, if the authoritarian group is willing to form a certain FTA, the

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[13] There is robust empirical evidence that the formation of free trade areas in developing countries (the focus of our analysis) leads to declining external tariffs (see Estevadeordal et al. 2008 for evidence on ten Latin America countries and Calvo-Pardo et al. 2011 for evidence on ten Southeast Asia countries), although not for developed countries (see Limao 2006). While measuring protectionist rents directly is very difficult, the level of tariffs provides a good proxy for them.

[14] These results do not hinge on the perfectly competitive structure adopted by Ornelas (2005a), which we follow here. Analogous results obtain also under oligopolistic competition (Ornelas 2005b).

[15] Naturally, an FTA is formed only if all prospective members endorse it. We conduct the discussion from the perspective of the Home country, but an analogous analysis would apply for country *Y*.

democratic government will want to form it too, strategic motivations notwithstanding. To show this, we henceforth attach subscript "F" to all variables when they are evaluated under an FTA. We also adopt subscript "ΔF" to represent the equilibrium change in any variable due to the FTA. For example, $W_{\Delta F}^{X}$ denotes the aggregate welfare change in the export sectors due to the agreement, whereas $W_{\Delta F}^{M}(b_D)$ and $W_{\Delta F}^{M}(b=0)$ denote, respectively, the aggregate welfare impact of the FTA on the import sectors under the incumbent democratic government and under an administration whose only concern is national welfare (equivalent to a situation where lobbying is effectively banned).

Lemma 2. Strategic considerations aside, if the democratic government does not want to form an FTA, the authoritarian would not want to form it either. However, if the authoritarian group wants to implement an FTA, the democratic government would want to implement it, too.

<u>Proof</u>: In the absence of strategic considerations (i.e. if there were no possibility of political disruption), the democratic government wants to implement an FTA if $G_{\Delta F}^{D} > 0$. From (9), this condition is equivalent to

(16) $$2[W_{\Delta F}^{M}(b=0) + W_{\Delta F}^{X}] > - b_D PR_{\Delta F}^{D}.$$

Similarly, if in power, the authoritarian group would be willing to form the FTA if

(17) $$2[W_{\Delta F}^{M}(b=0) + W_{\Delta F}^{X}] > - b_A PR_{\Delta F}^{A}.$$

Now notice that, under A1, part (b) of Lemma 1 implies that the right-hand side of (17) is greater than the right-hand side of (16). Therefore, if condition (17) is satisfied, condition (16) is also satisfied. Conversely, if condition (16) is not satisfied, condition (17) is not satisfied either. ∎

Since the authoritarian group would not support an agreement that the democratic government ordinarily rejects, it follows that, if the democratic government decided to back an FTA only for strategic reasons, the FTA would not be supported by the authoritarian group in case it gains power (since the authoritarian group has no similar strategic motivation).

3.B. FTAs that do not affect the probability of political disruption

We begin analyzing the case where there is a possibility of political disruption but this possibility is unaffected by the existence of FTAs—that is, condition (15) holds regardless of FTAs.

In this case, the equilibrium payoff of the incumbent democratic government under the FTA corresponds to

(18) $$\Gamma_{F}^{D} = G_{F}^{D} + \delta[(1 - p)G_{F}^{D} + pH_{F}^{D}].$$

Thus, the condition under which the democratic government supports the FTA when the authoritarian threat is inevitable is $\Gamma_{\Delta F}^{D} \equiv \Gamma_{F}^{D} - \Gamma^{D} > 0$. Using equations (12) and (18), $\Gamma_{\Delta F}^{D}$ can be rewritten as

$$\Gamma_{\Delta F}^{D} = G_{\Delta F}^{D} + \delta[(1 - p)G_{\Delta F}^{D} + pH_{\Delta F}^{D}].$$

Using expressions (9) and (10) and manipulating, this expression becomes

(19) $\qquad \Gamma_{\Delta F}^{D} = \dfrac{1}{b_{D}} \left\{ [1 + \delta(1 - p)] \left[W_{\Delta F}^{M}(b = 0) + b_{D} \dfrac{PR_{\Delta F}^{D}}{2} \right] + \delta p W_{\Delta F}^{M}(b_{A}) + (1 + \delta)W_{\Delta F}^{X} \right\}.$

Thus, the incumbent democratic government supports the FTA in this case if

(20) $\qquad [1 + \delta(1 - p)][2W_{\Delta F}^{M}(b = 0) + b_{D}PR_{\Delta F}^{D}] + 2\delta p W_{\Delta F}^{M}(b_{A}) + 2(1 + \delta)W_{\Delta F}^{X} > 0.$

We know that $W_{\Delta F}^{X} > 0$, since the preferential treatment under the FTA improves Home's terms of trade vis-à-vis the two other countries in the E sectors where Home exports to country Y. On the other hand, $W_{\Delta F}^{M}(b = 0) < 0$ and $PR_{\Delta F}^{D} < 0$ by Lemma 1.[16]

The interesting case is when the democratic government changes its stance toward an FTA *because* of the authoritarian threat. An FTA is (ordinarily) politically feasible if

(21) $\qquad 2[W_{\Delta F}^{M}(b = 0) + W_{\Delta F}^{X} + b_{D}PR_{\Delta F}^{D}] > 0.$

The next proposition shows that the authoritarian threat can make an FTA politically feasible even when condition (21) does not hold.

Proposition 1. Even if the authoritarian threat cannot be affected, the mere possibility of political disruption can turn an otherwise politically unfeasible FTA into a viable one. By contrast, the possibility of disruption cannot render unfeasible an otherwise feasible FTA.

<u>Proof</u>: We need to show first that $\Gamma_{\Delta F}^{D}$ increases with p. Using (19), we have that

(22) $\qquad \dfrac{d\Gamma_{\Delta F}^{D}}{dp} = \dfrac{\delta}{b_{D}} \left[W_{\Delta F}^{M}(b_{A}) - W_{\Delta F}^{M}(b = 0) - b_{D} \dfrac{PR_{\Delta F}^{D}}{2} \right].$

We know from Lemma 1 that $PR_{\Delta F}^{D} < 0$ and that the welfare impact of an FTA is increasing in the political bias of the government, so that $W_{\Delta F}^{M}(b_{A}) - W_{\Delta F}^{M}(b = 0) > 0$. Accordingly, expression (22) is unambiguously positive, and $\Gamma_{\Delta F}^{D}$ increases as the probability of disruption rises. As a result, an FTA that is politically unfeasible when there is no chance of political disruption can become viable if the likelihood of political disruption is high enough. That is, an FTA that does not satisfy condition (21)

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[16] When $b = 0$, the government chooses tariffs to maximize welfare in the import sectors. Since the FTA constrains the tariffs on imports from Y to zero, it must reduce welfare in those sectors when $b = 0$.

can satisfy criterion (20) for sufficiently high p. On the other hand, the reverse cannot happen: if an FTA is politically viable when there is no chance of political disruption, it remains feasible if a possibility of change in power through force arises. That is, an FTA that satisfies condition (21) also satisfies criterion (20) for any $p > 0$. ∎

Proposition 1 shows that the possibility of political disruption can enhance the political feasibility of FTAs by creating a "strategic" motivation for their adoption. Strategically supported FTAs arise when, among conditions (20) and (21), only the former is satisfied, so that

(23) $$\Gamma_{\Delta F}^{D}(p=0) \leq 0 < \Gamma_{\Delta F}^{D}(p>0).$$

An FTA can be implemented for strategic reasons because the democratic government, if out of power, will not receive any of the lobbying-related rents. In that case, the government would benefit from an FTA because the agreement constrains the welfare-distorting political activities of the authoritarian group if it gets in power. Thus, a government that expects to lose power to a dictatorial group might seek an FTA simply to constrain the policies of the incoming authoritarian group. Since this strategic motivation is more relevant when disruption is more likely, it follows that "democratic instability" incites the formation of free trade agreements.

The number of Home's import-competing sectors, M, affects the possibility of strategically supported FTAs, enlarging the scope for this type of arrangements.

Proposition 2. The set of parameters under which the possibility of political disruption can turn an FTA politically viable increases with the size of Home's import-competing sector (M).

Proof: To prove this result, it suffices to show that the probability of disruption, p, is a strategic complement of M in the function $b_D \Gamma_{\Delta F}^{D}$, which gives the criterion for the political viability of FTAs. This function is represented in the left-hand side of (20). We have from the definition of welfare aggregated across all non-numeraire import sectors, and of aggregated political rents, we also have that $PR_{\Delta F}^{D} = M(PR_{\Delta F}^{m,D})$ and $W_{\Delta F}^{M}(b_A) - W_{\Delta F}^{M}(b=0) = M[W_{\Delta F}^{m}(b_A) - W_{\Delta F}^{m}(b=0)]$. Therefore, it follows that

$$\frac{d^2(b_D \Gamma_{\Delta F}^{D})}{dp\,dM} = 2\delta \left[W_{\Delta F}^{m}(b_A) - W_{\Delta F}^{m}(b=0) - \frac{b_D}{2} PR_{\Delta F}^{m,D} \right] > 0.$$

Hence, the set of parameters under which condition (23) is satisfied enlarges as M increases. ∎

Thus, if Home were small relative to its FTA partner, in the sense of having a relatively large non-numeraire import-competing sector, the incentives of the democratic government to form the agreement because of the authoritarian threat are relatively large. The reason is that, if Home

imports more intensely from its partner, the agreement is more rent-destructing. While this is helpful for the country as a whole, it is detrimental to those in office who benefit from those rents. Under the threat of political disruption, however, the government understands that the loss of rents will be borne instead by the authoritarian group, if it is successful in gaining power. The destruction of rents is therefore less critical in the democratic government's evaluation of the agreement.

3.C. FTAs that can help secure democracies

The analysis above considers the case where a free trade agreement is not pivotal in the decision of the authoritarian group to attempt to take power through force. But this need not be the case. We now show that an FTA can change the sign of condition (15). However, the change can go in only one direction. Specifically, an FTA can prevent a coup from happening, but it cannot provoke a coup that would not occur without the agreement.

Proposition 3. If the authoritarian group does not intend to initiate a coup in the absence of trade agreements, an FTA cannot induce it to initiate one. On the other hand, the formation of a sufficiently rent-destructing FTA can free the country from the authoritarian threat. This is more likely to happen, the larger is Home's import-competing sector (*M*).

Proof**:** In the absence of trade agreements, the authoritarian group attempts to take power with a coup if condition (15) is satisfied. With an FTA, a similar condition applies:

$$(24) \qquad \frac{1}{b_A}\left[W_F^M(b=0) - W_F^M(b_D)\right] + \frac{PR_F^A}{2} > \frac{1 - \Phi(s - \overline{DC})}{\Phi(s - \overline{DC})}K \, .$$

The only difference between conditions (15) and (24) is in the expressions' left-hand sides, which denote the gains of the authoritarian group from getting power. On the other hand, the FTA impacts neither the probability of success of a coup nor the costs of a failed coup attempt. Subtracting the left-hand side of inequality (15) from the left-hand side of inequality (24), we obtain

$$(25) \qquad \frac{1}{b_A}\left[W_{\Delta F}^M(b=0) - W_{\Delta F}^M(b_D)\right] + \frac{PR_{\Delta F}^A}{2} < 0 \, ,$$

where the negative sign follows directly from Lemma 1. Thus, if condition (15) is not satisfied, condition (23) will not be satisfied either, implying that an FTA cannot provoke a coup that otherwise would not occur. Conversely, condition (15) can be satisfied while condition (23) is not, implying that an FTA can be critical to prevent the authoritarian group from seeking power. Finally, note that the left-hand side of (25) decreases with *M*:

$$\frac{d[lhs(25)]}{dM} = \frac{1}{b_A}\left[W_{\Delta F}^m(b=0) - W_{\Delta F}^m(b_D)\right] + \frac{PR_{\Delta F}^{m,A}}{2} < 0.$$

Thus, the range of parameters under which an FTA is pivotal in preventing the authoritarian threat is larger, the greater the number of Home's non-numeraire import-competing sectors. ∎

Proposition 3 shows that, because of the rent-destructing effects of FTAs, a free trade agreement can critically reduce the incentives of the authoritarian group to attempt to subvert the country's democratic system. In this sense, an FTA can help to constrain the emergence of authoritarian regimes, especially if the bloc is significantly rent-destructing, as in that case it will be more effective in lowering the gains from power of the authoritarian group. Relying on the common notion that the availability of rents can entice political turbulence—while the unavailability of rents can prevent it—the proposition's novelty stems from the recognition of free trade agreements as instruments to restrain the gains from rent-seeking behavior.

We still need to ask, however, whether the incumbent democratic government would actually *want* to implement the arrangement. The next proposition shows that the possibility of using an FTA to block a coup necessarily raises the government's political benefits with the agreement.

Proposition 4. An FTA can become politically feasible by being pivotal to prevent a coup.

Proof: When an FTA cannot prevent the authoritarian group from seeking power through force, it is politically viable if $\Gamma_{\Delta F}^D = G_{\Delta F}^D + \delta[(1-p)G_{\Delta F}^D + pH_{\Delta F}^D] > 0$. When the agreement reverses the decision of the authoritarian group, it is adopted by the democratic government if

$$G_F^D + \delta G_F^D > G^D + \delta[(1-p)G^D + pH^D],$$

where the left-hand side represents the present value of the government under the agreement (and no authoritarian threat) and the right-hand side corresponds to its expected present value without the FTA (and with the authoritarian threat). This condition can be rewritten as

(26) $$(1+\delta)G_{\Delta F}^D + \delta p(G^D - H^D) > 0.$$

Now notice that the left-hand side of (26) is greater than $\Gamma_{\Delta F}^D$ if $G_F^D > H_F^D$, which is true from the definitions of G_F^D and H_F^D, which are analogous to those in (9) and (10). Hence, even if $\Gamma_{\Delta F}^D < 0$, condition (26) can be satisfied. ∎

Proposition 1 asserts that the possibility of political disruption can render feasible an otherwise unfeasible free trade agreement. Proposition 4 indicates that the political support for an

FTA is further enhanced if the agreement can also play a role in preventing disruption of the political system. This is true even though here we abstract from any ideological motivation the incumbent democratic government may have; if the government perceived a benefit *per se* from maintaining democracy in the country, its incentive to form an FTA that can serve that purpose would be even greater.

The result suggests that free trade agreements—especially those that are particularly effective in destroying office rents, as those formed with larger trade partners—can be useful to prevent the breakdown of democracy when the country does not have sufficient democratic capital to prevent the authoritarian threat. This is often the case in nascent democracies, given the unstable political periods that typically follow the end of dictatorial regimes. In fact, the establishment of new democracies has often been followed by the formation of preferential arrangements (or the accession to existing ones). This was the case, for example, of all Mercosur members, of Greece, Portugal and Spain in their accession to the European Community, and of the EU agreements with the countries of Central and Eastern Europe shortly after the fall of the iron curtain. The European Community was itself established few years after the end of autocrat regimes in some of its original members (Germany and Italy). Not surprisingly, then, the consolidation of democratic regimes is often presented as one of the primary goals in the formation of free trade agreements, as noted by the World Trade Organization (2011). Our analysis provides a coherent explanation for the link between democratic consolidation and the establishment of free trade agreements. We now turn to showing that these relationships are also empirically robust.

4. EMPIRICAL STRATEGY

The model has two main predictions about the relationship between FTAs and democracy, which imply the following hypotheses:

H1. Participation in FTAs lowers the probability of democratic failure.
H2. Unstable democracies are more likely to form FTAs.

To test H1, the dependent variable is a dummy indicating whether a democracy was interrupted, or alternatively the length of democratic spells. This allows us to estimate the probability that democracy will fail in the country, which we denote by Prob(enddemo). The key independent variable is a measure of the intensity of the country's participation in FTAs.

To test H2, the dependent variable is the change in a country's FTA participation. The key independent variable is a measure of democratic instability, reflecting the *expectation* that the democratic regime may fail in the country.

As indicated in the Introduction, our problem is related to the one studied by Persson and Tabellini (2009), who examine the determinants (in particular the effect of income) of the stability of democracies and the impact of this perceived stability on income growth. Our empirical strategy resembles Persson and Tabellini's approach.

4.A. Testing H1: Participation in FTAs and the survival of democracies

We estimate the likelihood of democratic failure relying on the concepts of domestic democratic capital (DOM) and foreign democratic capital (FOR) developed by Persson and Tabellini (2009), while adding a variable that captures the intensity of a country's participation in FTAs. DOM is a measure of the democratic history of the country, whereas FOR measures current levels of democracy in the world.[17] Other explanatory variables include economic factors (e.g. GDP per capita, denoted by vector X) and geographical and institutional factors (e.g. war indicators, continent of location and legal origin, denoted by vector Z).

The dataset covers only countries' democratic spells. If a country has multiple democratic spells, we treat those spells as if they belonged to different countries. We estimate a discrete time duration analysis modeled as logit, which can be implemented as follows:

(27) $\log(P/(1-P)) = \alpha_0 + \alpha_1 FTA_{-1} + \alpha_2 DOM_{-1} + \alpha_3 FOR_{-1} + \alpha_4 X_{-1} + \alpha_5 Z_{-1} + u,$

where P denotes Prob(enddemo) and subscript -1 indicates that the variable is lagged one year.[18]

The variable FTA in equation (27) represents a measure of the country's degree of participation in FTAs in a given year — i.e. the country's "FTA intensity." Measuring the FTA intensity of a country is not a trivial task. Most empirical regionalism papers use dummies to represent FTA participation. While this may be adequate in other studies, such a measure is inappropriate here for several reasons. First, unlike other studies where the unit of observation is a country dyad, we need a measure of FTA participation at the *country* level, since we want to estimate the endurance of democracy in individual countries. And while some countries participate

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[17] In the next section we provide a precise definition of both variables.

[18] An alternative to this logit specification would be a complementary loglog (cloglog) regression, where we treat the time interval as discrete or grouped by year. However, when the probability of positive outcomes is small as in our case, where democratic failures account for only 2.4% of the sample (see Table 1), a cloglog link function is similar to a logistic link function. Hence the coefficients obtained from a cloglog regression can be exponentiated and understood in terms of an odds ratio. Since logistic regressions are more conventional than cloglog ones, we focus on the former. Results from cloglog regressions are very similar.

in a single (or no) FTA, others are members of multiple agreements. Second, there is wide heterogeneity among FTAs. While some arrangements are fully implemented, others are not, implying that preferences actually offered are few and small. Furthermore, while some agreements are very large (e.g. the European Union), others are tiny, including some that are numerous in terms of members (e.g. CARICOM). Third, even within a given FTA, the impact of the bloc can be very different on each of its members. Consider NAFTA: while it has a very large impact on Mexico, the smallest member, NAFTA's impact is much less pronounced on the United States, the largest member. This matters for our analysis: according to Proposition 3, only sufficiently rent-destructing FTAs have an effect on the sustainability of democracy. We clearly need, therefore, a more precise measure of the level of a country's participation in FTAs than what FTA dummies can offer. A natural candidate, which we use in our main regressions, is the share of imports from FTA members. This variable varies monotonically with the degree of implementation of the agreement and with the importance of the agreement for the country in question. In particular, it is positively correlated with the variable M from our model. Hence, while not perfect, the import share from FTA members is a very useful proxy for the country-level degree of rent destruction engendered by the FTAs a country belongs to.

We also need to take into account the possibility of duration dependence in (27), i.e. the extent to which the conditional hazard of an FTA rises or falls over time. If there is duration dependence, the hazard of enddemo will depend on the duration of the democratic regime. In principle, its effect can be either positive or negative. Domestic democratic capital will capture part of the duration dependence. For the residual duration dependence, we use a polynomial of a time counter that counts the number of years passed since the beginning of the current democratic spell. The order of the polynomial is determined by the best fit in the regressions.[19] Including this duration polynomial, which we denote by DUR, we rewrite our estimating equation as

(28) $\log(P/(1-P)) = \alpha_0 + \alpha_1 FTA_{-1} + \alpha_2 DOM_{-1} + \alpha_3 FOR_{-1} + \alpha_4 X_{-1} + \alpha_5 Z + \alpha_6 DUR + u.$

A remaining concern in (28) is unobserved heterogeneity. It is possible that some countries are more likely to have interrupted democracies due to unobserved variables that are correlated with some right-hand side variables in (28). To deal with this possibility, we run a demo_spell random effects logit specification.[20]

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[19] Using year dummies to account for duration dependence is not an appealing alternative for our analysis, since all the years without a democratic failure would be dropped because the year dummies could perfectly predict those zero outcomes, and we would lose important cross-sectional variation.

[20] Acemoglu et al. (2008) highlight the importance of including country fixed effects when studying the effect of income on democracy. In our case, a fixed effects logit procedure (i.e. conditional logit) would be econometrically possible but inappropriate because most of the democratic spells do not experience democracy

Alternatively, we also use continuous time duration analysis for equation (28), defining the dependent variable as the duration of democracy spells, i.e. the number of years passed since the onset of each democracy spell until it was interrupted or right-censored.[21] This variable is the same as the time counter we use for the duration dependence in the logit specifications. The duration dependence is specified parametrically (Weibull model) or non-parametrically (Cox proportional hazard model). In the Weibull model, the hazard function is $h(t) = \varphi \exp(\beta' X_t) t^{\varphi-1}$, where φ is a shape parameter to be estimated and t is the duration time. In the Cox model, the hazard is $h(t) = h(0) \exp(\beta' X_t)$, where $h(0)$ is the baseline hazard. The coefficients are assumed to be the same regardless of group (demo_spell), but the baseline hazard is allowed to be group-specific.[22]

4.B. Testing H2: Democracy instability and FTA formation

Once we have the predicted Prob(enddemo), we can use it to test our second hypothesis, that the likelihood of democratic failure helps to explain the formation of FTAs. In the analysis we also include the economic, geographical and institutional variables used in the duration regression as controls, except DOM, FOR and the duration dependence terms. Nothing in our theory suggests that these variables should have an independent effect on the change of a country's FTA participation, ΔFTA, in addition to their indirect effects on ΔFTA through Prob(enddemo). This is analogous to the identification assumption of Persson and Tabellini (2009), that democratic capital affects income growth through their effects on the sustainability of democracy only. We also exclude from the second stage ΔFTA regressions the duration dependence terms. Instead, we use year dummies to capture the time effect. In our context, some may argue that the rationale to exclude FOR may not apply, since the level of democracy in a region could have an independent effect on the likelihood that countries in the region will form FTAs. Thus, for robustness we also run a specification where we include DOM and FOR in the ΔFTA regression. Again, in line with our model, we use import shares from FTA partners to measure the intensity of a country's FTA participation.

To test H2, we then run the following specification, where we include also year dummies and country fixed effects:[23]

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failure during our sample period. As a result, the observations for those spells would be dropped in a fixed effects logit regression, eliminating much of the cross-sectional variation in the data.

[21] If in the beginning of our sample (year 1948) a country has a democratic regime, 1948 is assumed as the onset of the democratic spell.

[22] Proportional hazard (PH) refers to the effect of any covariate having a proportional and constant effect that is invariant to when in the process the value of the covariate changes. We test the PH assumption and find no evidence that the model violates it either globally or with respect to each covariate.

[23] Even though much has been written about regionalism, we still know relatively little about what makes governments willing to form FTAs. Consider for example the seminal contribution by Baier and Bergstrand (2004).

(29) $\Delta FTA = \beta_0 + \beta_1 Prob(enddemo)_{-1} + \beta_2 FTA_{-1} + \beta_3 X_{-1} + \beta_4 Z_{-1} + v.$

One may be tempted to estimate equations (28) and (29) together as a simultaneous system: logit for equation (28) and OLS for equation (29). However, this method is not applicable, because Prob(enddemo) is unknown in equation (29).[24] Therefore, we need to estimate the two equations separately. Specifically, we replace Prob(enddemo) in equation (29) with its predicted hazard rate ($\hat{h}$). Since the hazard rate predicted from equation (28) is a function of FTAs, we estimate $\hat{h}$ from the following regression:

(30) $\log(P/(1-P)) = \gamma_0 + \gamma_2 DOM_{-1} + \gamma_3 FOR_{-1} + \gamma_4 X_{-1} + \gamma_5 Z_{-1} + \gamma_6 DUR + e.$

Thus, we do not use the FTA variable in the estimation of $\hat{h}$.

Having estimated $\hat{h}$, we then use it in equation (29). We also include the squared term of $\hat{h}$ to capture possible nonlinearities. Since $\hat{h}$ is a constructed regressor, we adjust our standard errors using bootstrapping methods. Our model implies a positive impact of $\hat{h}$ on FTA formation.

Unlike in our study of H1, here the analysis is not necessarily at the country level. Accordingly, we also employ a discrete-time duration analysis of a large bilateral panel dataset covering years 1960-2007. Each observation in the bilateral data corresponds to two countries (i.e., a dyad). The key independent variables are the estimated hazard rates of the two countries in a dyad, as predicted from equation (30). The dependent variable is a dummy indicating an FTA relationship between two countries. Although the problems related to the heterogeneity of FTAs discussed above remain present, this approach has the advantage of being very conventional, being employed in the large majority of empirical regionalism studies (see Freund and Ornelas 2010).

Notice that the discrete choice regressions often used for binary FTA cross-section data analysis (e.g. Baier and Bergstrand 2004) would be inappropriate for panel data analysis like ours because it requires the dependent variable (an FTA dummy) to be conditionally independent over time.[25] This problem does not arise in our discrete time duration analysis. Following Liu (2008, 2010), we only need to drop all but the first positive outcome of the dependent variable for each dyad over the sample period. Once the repeated "1"s are dropped, the problem of conditional

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Most of the explanatory variables they consider are either geographical, which do not change over time, or "structural," in the sense of changing little over time (e.g. factor endowments). Since we work with a panel, our fixed effects capture all of those fixed/almost fixed factors.

[24] Simply substituting the binary variable enddemo as Prob(enddemo) in equation (29) and running logit for equation (28) would cause logical inconsistency. As summarized in Maddala (1983, p. 118), for logical consistency either α_1 or β_1 in equations (28) and (29) must equal zero, which would make our study irrelevant.

[25] For example, Mexico signed NAFTA with the U.S. and Canada in 1994, and NAFTA remains in place for all the following years, so the independence assumption is obviously violated.

dependence disappears. Note that the "event failure" in this instance is two countries entering into a trade agreement, and a spell is defined as the length of time until two countries form an agreement.

5. DATA

We have a panel with 126 countries over 1948-2007. Countries that have never experienced democracy are dropped because we only consider democratic spells. Online Appendix 1 (http://personal.lse.ac.uk/ornelas/Liu&Ornelas_Appendices.pdf) lists the countries covered in our enddemo duration analysis. More than 200 countries are covered in the construction of our FTA measures, as explained below.

In our empirical analysis, *free trade agreements* cover both free trade areas and customs unions, which we refer to as full-fledged free trade agreements (or simply FTAs, for brevity). We also provide results for partial-scope preferential trade agreements (which we refer to as PTAs), as a test to see whether the mechanism at work is indeed the destruction of rents, which should be significantly less pronounced in PTAs than in FTAs. Data for the agreements come from the WTO's website and from information available elsewhere. Online Appendix 2 lists the agreements in our dataset with their types (FTAs or PTAs) and other information about the data sources. Agreement types are based primarily on whether the agreement is signed according to GATT's Article XXIV (FTAs) or the Enabling Clause (PTAs).[26] Although most agreements are in the FTA category, the import shares of PTAs are nontrivial. As shown on Table 1, the average import share from PTAs in our sample is 0.065, compared to 0.191 for FTAs.

As discussed in the previous section, our preferred measure of FTA participation is a country's imports from FTA partners as a share of its total imports in a given year. We use an analogous definition for PTA participation:

- FTA_impsh: a country's imports from FTA partners as a share of its total imports;
- PTA_impsh: a country's imports from PTA partners as a share of its total imports.

We obtain the import data from the IMF Direction of Trade Statistics. To construct the shares, we carefully consider the dates of the formation of new blocs, of the accession of new members, and of the de-activation of existing blocs.

Our main definition of democracy relies on Polity IV data (available at http://www.systemicpeace.org/polity/polity4.htm). We use the polity2 scores, which range from -

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[26] There are exceptions. For example, MERCOSUR was signed under the Enabling Clause, but is classified as a free trade area (customs union after 1995).

10 to 10, with higher values representing more democratic regimes.[27] Following a large literature, we define a regime as "democratic" if its polity score is strictly positive. In a democratic spell, enddemo is zero as long as a democracy remains uninterrupted and becomes unity when it ends. If a democracy does not end during our sample, enddemo is right-censored and only takes zeros. There are 78 episodes of enddemo in our sample; online Appendix 3 lists them.

For robustness, we also use a different measure of democracy failure from a recent binary classification defining transition to autocracy ("tta") developed by Cheibub et al. (2010, with data available at https://netfiles.uiuc.edu/cheibub/www/DD_page.html). Their measure has the important advantage, relative to alternative measures, of offering information until 2008 for a large number of countries.

The construction of DOM and FOR is also based on polity2 scores. DOM is defined as

$$DOM_{it} = (1 - \delta) \sum_{\tau=0}^{\tau=t-t_0} d_{i,t-\tau} \delta^{\tau} \, ,$$

where δ is a discount factor and $d_{i,t-\tau}$ is a dummy for a strictly positive polity2 score. As Persson and Tabellini (2009), we find that what really matters for democratic stability in DOM is *current* DOM (i.e. the current democratic spell), whereas the portion of DOM due to previous democratic spells is usually insignificant in the regressions. Accordingly, we use current DOM in all of our regressions, so t_0 corresponds to the first year in which $d_{it} = 1$ in the current democratic spell. For the discount factor, we adopt $\delta = .95$; results change little for $\delta \in [.94, .99]$, the range considered by Person and Tabellini (2009). In turn, FOR is defined as

$$FOR_{it} = \sum_{j \neq i} Polity_{jt} \left(1 - \frac{Dist_{ij}}{DEq} \right) / N_t \, ,$$

where $Polity_{jt}$ is country j's polity2 score at t (rescaled to the [0,1] interval), $Dist_{ij}$ is the distance between the capitals of countries i and j, DEq is half the length of the equator, and N_t is the number of independent countries in the world at t.

GDP per capita data come from the World Development Indicators database. Data on wars come from the Correlates of War dataset and includes all wars a country was involved in. Legal origin data are drawn from La Porta et al. (1999).[28] Colonial history variables come from the CIA's World Fact Book. WTO membership data come from the WTO website. Trade openness measures

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[27] Countries enter the sample as they become independent, but only if they have a strictly positive polity2 score, since we study only the risk that democratic countries face of becoming an autocracy.

[28] Because legal origin dummies are mostly insignificant in the enddemo regressions, for simplicity we include only the Socialism legal origin dummy, taking all the other origins together as the default category (UK, France, German and Scandinavian). Results change little regardless of how we treat these legal origin dummies.

are obtained from the Penn World Table 6.3. Table 1 lists the definitions of all the variables used in the main regressions and provides some descriptive statistics. The data used for the bilateral analysis are similar to the data used by Liu (2010), extended to 2007.

6. EMPIRICAL RESULTS

6.A. Does participation in FTAs affect democracy survival?

We study first the impact of lagged FTA participation on the duration of democracy. We start by plotting domestic democratic capital against FTA participation for all observations in our sample, where we identify by a "1" the cases where democracy ends in a country. As Figure 2 shows, democracy is rarely reversed in countries deeply engaged in FTAs.[29] The large majority of cases in which democracy ends happens in countries whose FTA shares are either nil or very close to nil. A high level of domestic democratic capital also appears to help protect democracy, although there are a non-trivial number of cases where democracy fails despite a high level of democratic capital.

Figure 2: Cases of democracy failure ("enddemo" based on Polity scores)
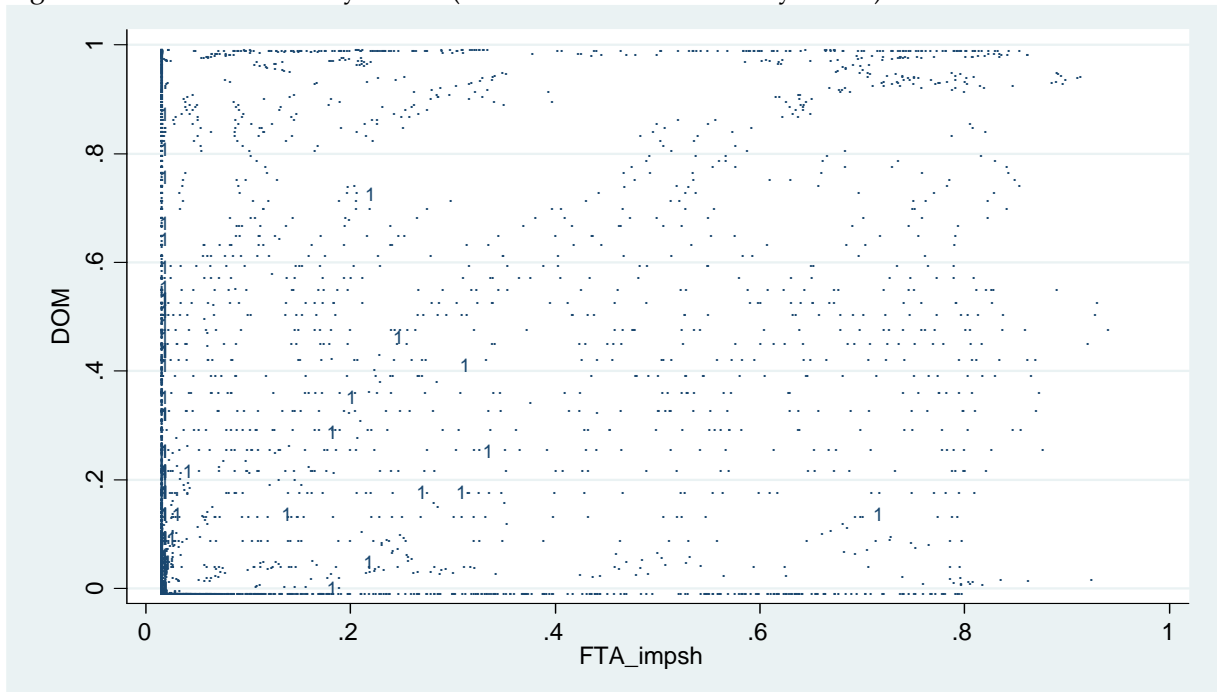
Notes: The "1"s represent the cases where democracies end (enddemo=1); the small dots represent all other cases.

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[29] The only outlier is Cambodia in 1997. That event is coded as a democratic breakdown according to the Polity data, on which Figure 2 is based, although not by Cheibub et al.'s data (2010), possibly because it was a short-lived autocratic experience (the polity2 score returns to positive in 1998). In the online Appendix 4, we show a figure analogous to Figure 2 using Cheibub et al.'s (2010) definition of democratic failure.

We next compare the Kaplan-Meier nonparametric survival curves for countries with and without FTAs. As Figure 3 shows, democracies without FTAs (dotted curve at the bottom) are significantly more likely to fail than those with FTAs (solid curve on the top). A logrank test rejects the null hypothesis that both groups face the same hazard of failure with a p-value of 0.0014. While interesting, this is however only unconditional evidence.

Figure 3: Nonparametric survival curves for countries with and without FTAs
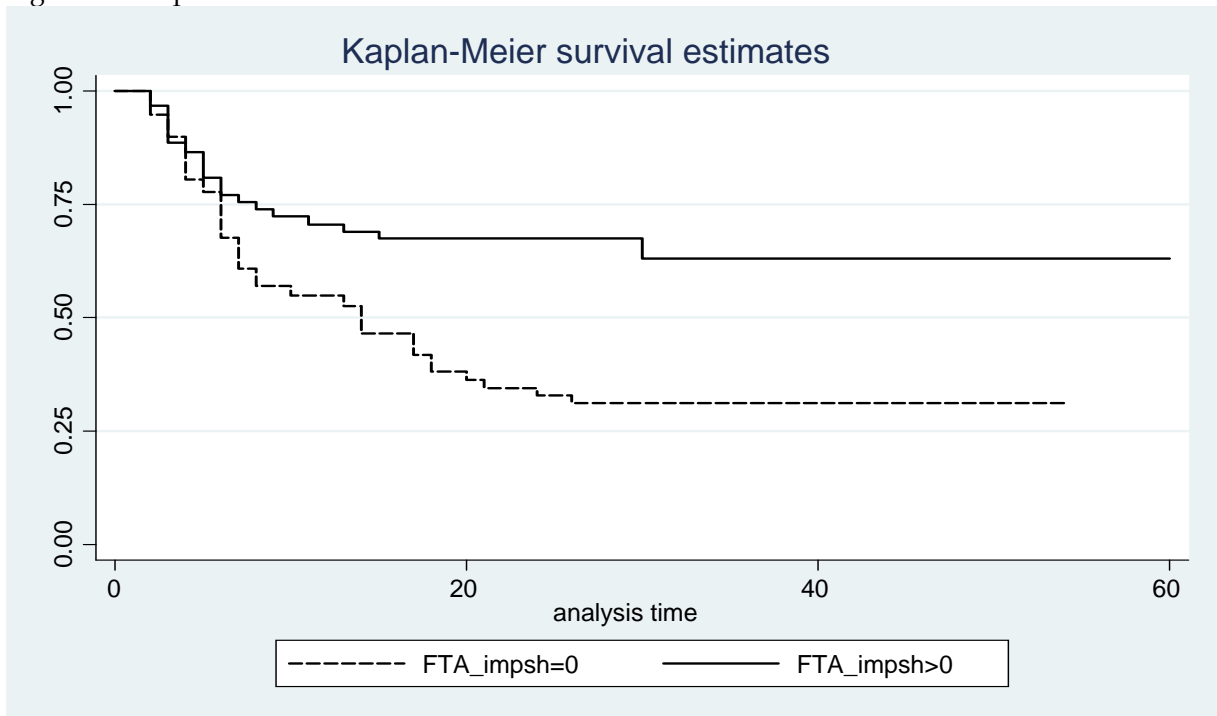
Notes: The curves are based on a sample with 2603 observations used in most of the regressions in Table 2. The curve on the top is the survival curve for countries with positive FTA import shares (i.e., FTA_impsh>0; 1463 observations). The curve at the bottom is the survival curve for countries with zero FTA import share (i.e., FTA_impsh=0; 1140 observations).

Table 2A shows the results from duration analysis for FTAs. We use five different specifications. The logit regression (1) uses only the FTA import share variable. This variable alone explains around 5% of the variation in enddemo, as shown by the Pseudo R2. In regression (2) we add all control variables and the duration dependence terms. It turns out that a second-order polynomial of the time counter produces the best fit of the model. Due to possible unobserved heterogeneity, in regression (3) we use demo_spell random effects. The LR test of the random effects ("rho") is significant at the 10% level, although the changes in the estimated coefficients are overall small. Columns (4) and (5) show results for the continuous time duration models. Column (4) shows the coefficient estimates (not exponentiated) of the Weibull regression, whereas column (5) displays

the coefficients of the PH Cox models. In those models, the dependent variable measures the number of years passed since the onset of a democratic regime.

In all five specifications, the coefficient of the FTA import share is negative and statistically significant, at least at the 10% level. This result supports our first hypothesis that greater participation in FTAs lowers the probability of democratic failure in a country. The other covariates usually have the expected signs. GDP/capita, DOM, FOR and UK colony dummy have a negative and statistically significant impact on enddemo, while the estimated coefficients of most other variables are statistically insignificant in the regressions.

Are these estimates also economically significant?[30] Consider for example the random effects logit regression result in column (3) of Table 2A. It implies that a one percentage point increase in the FTA import share would decrease the odds of enddemo by about 2.86% [i.e., exp(-2.906/100)-1= -2.86%]. The corresponding estimates from the Weibull and PH Cox regressions are 2.35% are 2.13% decreases in the hazard, respectively.[31] These magnitudes are economically nontrivial. For example, consider Mongolia, the only country without any FTA by 2010. According to the random effects logit result, Mongolia's hazard rate in 2005 would drop from 3% to 1% if it had the same FTA import share as Chile (FTA_impsh=0.4 in 2005), or to just 0.3%, had Mongolia the same FTA import share as Mexico (FTA_impsh=0.78 in 2005). Or seeing from another angle, that result implies that, at the average predicted hazard (0.023), a one standard deviation increase in lagged FTA_impsh would reduce the hazard by more than half, to 0.011. This effect is about the same size of the impact of a one standard deviation increase in lagged FOR would have on the hazard.

Table 2B reports estimates when we use Cheibub et al.'s (2010) definition of democratic failure. Duration dependence terms are updated accordingly. Magnitudes of course differ, but results are qualitatively very similar to those from Table 2A, reinforcing the view that more FTA participation tends to increase the longevity of democracies.

Table 2C shows in turn the results for partial-scope PTAs, using both Polity and Cheibub et al.'s democracy data. If the mechanism through which trade agreements help democracies to consolidate is indeed through the destruction of protectionist rents, then we should detect an effect of FTAs on democracy survival but not of PTAs. Indeed, the coefficient of the PTA import share is

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[30] Naturally, the coefficients from different models should be interpreted differently. In the logit model, an exponentiated coefficient provides an estimate for the impact of a one unit change in a covariate on the odds ratio of enddemo, i.e. $\exp(\beta) = [P1/(1-P1)]/[P0/(1-P0)]$, where $P1 = \text{Prob(enddemo}|X1)$, $P0 = \text{Prob(enddemo}|X0)$, and $X0$ and $X1$ represent the different values of X. In the Weibull and PH Cox models, an exponentiated coefficient provides an estimate for the impact of a one-unit change in a covariate on the hazard ratio of enddemo (i.e., on $P1/P0$). If the risk of democracy failure is very small, the odds $P/(1-P)$ and the hazard rate P are similar.

[31] Note that these estimated changes are in percent, not percentage points.

negative but always statistically indistinguishable from zero, confirming that partial, incomplete processes of preferential trade liberalization have no meaningful effect on democracy survival.

It is also possible that FTAs help to sustain democracies not because of their rent destruction effects, but because democratic countries demand democracy from their FTA partners. To test for this alternative mechanism, we create two FTA import share measures based on partner countries' polity2 scores: FTA_impsh_moredemo covers only the FTA partners with more democratic regimes; FTA_impsh_lessdemo covers only the FTA partners with equal or less democratic regimes. In Table 2D we replace our previous FTA_impsh variable with these two new explanatory variables. The dependent variable in regressions (1)-(3) is the enddemo measure based on the Polity scores, while the dependent variable in regressions (4)-(6) is the transition to autocracy "tta" measure from Cheibub et al. (2010). As expected, the statistical significance of the split FTA import share variables decreases relative to the original definition. However, the results show that FTAs with more democratic partners are not substantially more valuable for the sustainability of a country's democracy than FTAs with less democratic partners. Thus, pressure from highly democratic FTA partners may have an effect but cannot be the sole driver of this phenomenon.

6.B. Are unstable democracies more likely to seek participation in FTAs?

We now turn to our second hypothesis. We use the predicted hazard rate from the duration analysis to estimate how democracy instability affects FTA formation. The results from our main specification are reported in the first three columns of Table 3A. The first column shows the enddemo logit regression.[32] As discussed in Section 4, we do not include the FTA variable in this first stage to avoid an endogeneity problem in the second stage. Columns (2) and (3) display the regressions with the predicted hazard, where the dependent variable is the change in the FTA import share from the previous year (ΔFTA). We also include the square of the predicted hazard to allow for possible nonlinear effects. Year dummies are included to capture global trends in the formation of trade agreements. To control for unobserved heterogeneity across countries, country fixed effects are also included in the regression. Because the hazard is predicted from the first stage with sampling errors, we use bootstrapping (500 replications) to adjust the standard errors.

In column (2), the coefficient of the predicted hazard rate is significant at the 5% level, although its quadratic term is not statistically significant. This result supports our theoretical

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[32] The second-stage ΔFTA regressions do not change in any qualitatively important way when we use the other specifications in Table 2A. The same is true if we use Cheibub et al.'s (2010) definition for transition to autocracy as the dependent variable in the first stage.

prediction that unstable democracies tend to form more FTAs than stable democracies. We can also quantify the magnitude of the effect. At the mean value of the hazard (0.023), a one standard deviation increase in the hazard (0.035) would lead to a 1.66 percentage point increase in the FTA import share. Or consider for example the case of Guatemala from 1966 to 1967, when its hazard shot up to 0.062 from 0.006. According to our estimates, this should lead to an increase of 2.65 percentage points in Guatemala's FTA import share (curiously, the actual increase was exactly that).

In column (3), we repeat the analysis from column (2) but include DOM and FOR in the second-stage regression. The purpose of doing this is to check if our results are sensitive to these exclusion variables. The estimated coefficient of the hazard proves to be largely insensitive to those changes.[33]

The last two columns of Table 3A report the results from the analogous exercise for the formation of partial-scope trade agreements, ΔPTAs. The hazard is now indistinguishably different from zero in statistical terms. Thus, political instability has no meaningful effect on the formation of partial-scope trade agreements. This is consistent with the mechanism we develop, where unstable democracies seek to diminish the rents available to those in power by increasing participation in FTAs—but not in PTAs.

6.C. A bilateral analysis of democracy instability and FTA participation

We also run bilateral structural regressions. Each observation is associated with a country dyad. The dependent variable is a dummy variable, equal to one if the two countries have a trade agreement in that year. As discussed earlier, using dummy variables for FTAs makes it impossible to condition the results on the importance of the agreement for the countries involved. On the other hand, this approach has the advantage of paralleling more closely the existing regionalism literature, including all the previous analyses of democracy and FTA formation, which have also followed this approach.

Our key explanatory variables are Hazard_i and Hazard_j, which are the predicted hazards for countries i and j based on the enddemo logit regression in the first column of Table 3A. Other covariates include variables usually controlled for in bilateral FTA analyses: the sum and the absolute difference of the two countries' GDP and GDP/capita in a dyad, the distance between them, a border dummy, a common colony dummy, a military conflict dummy, a political alliance dummy, and the product of the two countries' remoteness, defined as the distance to the rest of the

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[33] We also tried both excluding DOM and the duration dependence terms while keeping FOR in the second stage, and including in the second stage all the variables used in the first stage. In both cases, the results remain virtually unchanged.

world weighted by countries' GDP.[34] We include as well various measures of democracy for each country in a dyad, and some additional variables used by Mansfield, Milner and Rosendorff (2002) and Mansfield, Milner and Pevehouse (2008), such as bilateral trade, WTO membership, and hegemony. See the footnotes of Table 3B for more information on those variables.

The results from the bilateral analysis are reported in Table 3B.[35] The first three columns are for FTAs, where we also include different measures for democracy. Interestingly, the impact of democratic status by itself is unclear. Using the Polity full 21-point score (as in the main specification of Mansfield, Milner and Rosendorff 2002), we find that more democratic countries indeed tend to form more FTAs. But if we use a binary variable based on the Polity score, as we do to estimate Prob(enddemo), then the coefficients of democratic status become statistically insignificant. If we use instead Cheibub et al.'s (2010) definition, the impact of democratic status on FTA formation is again statistically significant, but *negative*. By contrast, in all the regressions the predicted hazard rates for both countries in a dyad have a similar positive and highly significant impact on FTA formation. Most of the other variables have the expected signs as well.

The last three columns consider partial-scope PTAs. Analogously to Table 3A, the hazard rates become statistically indistinguishable from zero in all the regressions, confirming that democracy instability has no effect on the formation of partial-scope trade agreements.

6.D. Robustness

In this section we discuss the robustness of our results in several dimensions. First, does our FTA import share variable capture the changes (deepening) of existing FTAs or the formation of new FTAs? Although the interpretation of the results is similar in both cases, it is useful to disentangle the two effects to check whether the formation of new FTAs matters on its own. To do so, in Table 4 we use, instead of the lagged shares of imports from FTA partners, the share of imports *in 1960* of the FTA partners in the previous year. This measure, therefore, excludes all variation in our main independent variable except the variation that comes from the formation of new FTA links. As Table 4 shows, the magnitude of the FTA coefficients is qualitatively similar to (although larger than) those in Table 2A.

Second, as discussed in the Introduction, several studies relate openness to democracy. To check whether our FTA measure captures more than general openness, we add an openness variable, defined as (imports+exports)/GDP, and a WTO membership dummy as additional

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[34] For more information on these variables and data sources, see Liu (2010).

regressors to our existing enddemo regressions. The results are reported in Table 5, columns (1)-(3), for the random effect logit, Weibull and PH Cox regressions, respectively. Results are quite similar to those from Table 2A, and the two newly added variables are highly insignificant.

Third, it is possible that our results are driven by the rule, in some trade agreements, that members must be democratic. This was a pre-condition for accession of the Central and Eastern European countries to the European Union. Mercosur added a similar clause for all of its members in 1998. For those countries, democracy and FTA participation must therefore be tightly linked and this may have an important effect on our estimations. In columns (4)-(6) of Table 5 we then drop the observations for which such rules apply (i.e. all Mercosur members since 1998 and the Central and Eastern European countries once they entered the European Union). Again, results are very similar to those from Table 2A.

Fourth, in defining a democratic failure by a move in the Polity score from strictly positive to non-positive, we may capture cases where the political change was actually very minor (say a change in the polity2 score from 1 to 0). Many scholars have used this definition, and we also use the binary measure from Cheibub et al. (2010), but it is nevertheless important to check whether such marginal changes in democratic status are driving our results when we use the Polity data. In fact, if our theoretical predictions have bite, including those marginal cases should only dampen our results, driving the estimates of the FTA impact on democracy survival toward zero. In Table 6, columns (1)-(3), we find that this is indeed the case when we do not classify as democracy failure the cases where the polity2 score drops by less than 5 points. The increase in the coefficients is sizeable but not huge (from 15% to 22%, relative to the estimates in Table 2A), which seems sensible given that only 16 cases of enddemo were dropped when we added the new criterion to define enddemo.

Now, to further reinforce our confidence in the political economy explanations of our results, as a falsification exercise we run a regression for end*auto* (i.e. the end of *autocracy* spells) instead of enddemo. There are 85 cases of endauto=1 in our sample, so this is a phenomenon about as common as cases of enddemo=1 (78 in our sample). The results are shown in column (4)-(6) of Table 6. The FTA variable is now highly insignificant. This indicates that FTAs do not help the survival of autocratic political regime, as expected.

We also perform a number of robustness checks in our structural regressions. First, does the hazard of democratic failure actually predict the formation of *new* FTAs, or just the deepening of existing FTAs? To eliminate variation in the dependent variable that is unrelated to the formation of

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[35] Those results are based on pooled data logit regressions with standard errors clustered by dyad. Regressions with dyad random effects, available upon request, produce similar results.

new FTA/PTA links, in Table 7 we repeat the regressions in Table 3A using the measure of FTA and PTA participation that considers 1960 import shares instead of lagged ones. Results from the two tables are overall very similar, confirming that democratic instability indeed helps to predict the formation of new FTAs (but not of new PTAs), as a more direct interpretation of our model suggests.

Second, is it really the expectation of regime change (proxied by the predicted hazard) that induces more FTAs? One alternative is that the change in regime itself causes more FTAs. Another is that the regime has an effect on its own (i.e. being democratic induces more FTAs). Our estimated hazard is surely correlated with both recent changes in political regime and current democracy status. To test whether it is indeed the expectation of regime change that matters, we include in the ΔFTA regression, in addition to the predicted hazard, one of the following variables: (1) *demo*, a dummy indicating the current democracy status (i.e., whether polity2>0); (2) *reg_change*, a dummy indicating whether a country's polity2 score changes signs (from strictly positive to non-positive or vice versa); and (3) *var(Polity)_10yr*, the variance of polity2 scores during the last 10 years, which is used to capture regime stability in the previous 10 years. The results are reported in columns (1)-(3) of Table 8. In all of the three cases, the newly added variable is highly insignificant, while the predicted hazard remains statistically significant. These results corroborate the idea that what really matters for FTA formation is the expectation of a possible of democratic disruption.

Third, it is conceivable that our empirical results may be identifying a more general phenomenon than the model suggests. For example, governments may form more FTAs as a consequence of general political competition within an electoral system, and not specifically because of the threat from autocrats. If the risk of democratic collapse is positively associated with more political competition within a democracy, our finding that the threat of the democratic system induces FTA formation may be driven by regular political competition within a democracy. To test for that, we include a measure of political competition in the ΔFTA regression. We use the variable POLCOMP from Polity IV, which codes the degree of political competition in the country.[36] The results are reported in the last column of Table 8. Again, the newly added variable is statistically insignificant, while the predicted hazard remains statistically significant. This suggests that regular political competition in a country is not an important driver of FTA formation, unlike the expectation of a democratic disruption.

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[36] This variable measures both the regulation of participation and the competitiveness in the political process. According to the Polity IV Dataset User's Manual, POLCOMP reaches its maximum score when "relatively stable and enduring political groups regularly compete for political influence and positions with little use of coercion; ruling groups and coalitions regularly, voluntarily transfer central power to competing groups; and no significant groups, issues, or types of conventional political action are regularly excluded from the political process."

Put together, these robustness checks boost confidence that we are capturing our intended mechanism, rather than the workings of some omitted variable that affects both FTA formation and political regimes in general.

6.E. Endogeneity

A potential problem in our analysis is reverse causality between FTA and Prob(enddemo). Since we do not estimate the two equations jointly, we have to address this issue in each equation.

In our structural estimation, the endogeneity of the hazard is unlikely to be a problem because we use the *predicted* hazard as a function of exogenous variables only, not including the FTA variable. In other words, the predicted hazard in the ΔFTA equation is the exogenous component of Prob(enddemo). This argument is based on the presumption that all of the other variables in the enddemo regression are truly exogenous, in the sense of not being affected by the FTA import share. Although we do not provide a formal test for this, notice that omitting the FTA import share variable causes little biases in the coefficients of the other covariates in the enddemo regression: their coefficients in Table 2A, column (2), and in Table 3A, column (1), are remarkably similar. This reveals that the other covariates in the enddemo regressions are not strongly correlated to FTA import share. The weak correlation between the other covariates and the FTA import share also help to explain why those variables are mostly insignificant in the structural regressions. Finally, in the bilateral structural regressions, the endogeneity problem is further reduced because we drop the repeated "1"s of the FTA dummy. Keeping only the first positive outcome, we eliminate the possibility of feedbacks from FTAs to the predicted hazard of democracy.

In the enddemo regressions, endogeneity of the FTA variable may not be a problem either. If the risk of democratic failure induces greater FTA participation, as our structural regression indicates, this reverse causation will likely lead to an *over*-estimation of the lagged FTA coefficient in the enddemo regression. Without addressing this endogeneity issue, we find a negative effect of FTAs on enddemo. Had we eliminated it, the estimate would be even more negative. In other words, the reverse causality problem biases against the hypothesis that FTAs reduce the risk of democratic failure.

We have also addressed the endogeneity in the enddemo duration regressions formally. Two-stage least squares cannot be used because our logit regression is nonlinear. We cannot use the predicted FTA from a first-step regression in the second-step enddemo regression either. There is no well-defined bivariate distribution in this approach because the two steps follow normal and extreme value distributions, respectively. Instead, we adopt the two-step control-function approach

suggested by Petrin and Train (2010) for logit models. In the first stage, we use "remoteness" (i.e. the distance to the rest of the world weighted by countries' GDP) as an instrument for FTA participation and calculate the residuals. In the second stage, we add to the enddemo regression the first-stage residuals (and possibly its higher order terms) as the "control function." The first-stage residuals are used as an estimate of the variation in FTA participation that affects democracy and is correlated with the error term. Remoteness turns out to be a strong instrument for FTA participation. However, we find that the control function is highly insignificant in the second-stage enddemo regression, implying that endogeneity is not a significant problem for our estimations.[37]

7. CONCLUSION

We study the relationship between a country's participation in free trade agreements and the sustainability of its democracy. We develop a model centered on the destruction of rents caused by FTAs. The model delivers two main results. First, deeper engagement in FTAs increases the longevity of democracies. Second, political instability promotes FTA participation.

Relying on the concept of democratic capital developed by Persson and Tabellini (2009) to estimate countries' hazards out of democracy, we test and confirm our two main predictions in a sample of 126 countries over 60 years. Our results suggest that the rent destruction forces of FTAs constitute an important channel through which our predictions manifest. For example, the predictions hold for "proper," GATT 1947-compatible free trade areas and customs unions, but not for partial-scope agreements based on GATT's Enabling Clause. On the other hand, the impact of FTAs on democracy survival is not greater when the partners are more democratic, so it is not simply a matter of democratic countries demanding democracy from their FTA partners. It is not that general political competition induces FTA formation either; only the uncertainty related to the possibility of major changes in the political regime matters, and only when it involves moving *away* from democracy, not towards democracy.

While all this is "good news" for democratic countries involved in FTAs, we must emphasize that participation in FTAs is, unsurprisingly, no panacea: they can *help* to consolidate democracies, but their reach is limited. Our estimates make this limit clear. Similarly, there are as well many reasons other than democratic instability that also foster participation in FTAs.

Our study provides, in any case, a clear departure from the perspective often taken by economists, who tend to focus exclusively on the strictly economic aspects of the causes and

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[37] These results are available in the online Appendix 5.

consequences of FTAs.[38] Purely economic motives certainly help, but cannot fully explain the intensity of the ongoing outbreak of regionalism. Our work shows that the instability of democracies is another important contributing factor to this trend. Yet much remains to be known about the interplay between trade agreements and democracy. We look forward to future research to further illuminate this relationship.

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Table 1: Descriptive statistics of variables

Variable	Description	Mean	S.D.	Min	Max
enddemo	Dummy indicating the end of a democracy	0.024	0.153	0	1
lFTA_impsh	Lagged import share from FTA partners	0.191	0.268	0	0.925
lPTA_impsh	Lagged import share from PTA partners	0.065	0.128	0	0.646
ΔFTA_impsh	Change in FTA_impsh from previous year	0.011	0.073	-0.451	0.772
ΔPTA_impsh	Change in PTA_impsh from previous year	0.002	0.032	-0.442	0.502
llgdppc	Lagged log(GDP/capita)	7.830	1.471	4.400	10.540
lDOM	Lagged current domestic democratic capital	0.535	0.338	0	0.99997
lFOR	Lagged foreign democratic capital	0.045	0.138	-0.217	0.261
lwar	Lagged war indicator	0.070	0.254	0	1
legal_origin	legal_origin = Socialism	0.120	0.325	0	1
africa	Africa dummy	0.189	0.391	0	1
middleeast	Middle East region dummy	0.033	0.180	0	1
socialist_trans	Socialist transition dummy	0.101	0.301	0	1
Spain_colony	UK colony dummy	0.184	0.388	0	1
UK_colony	Spain colony dummy	0.344	0.475	0	1
duration	Duration of a democracy (# of years passed)	20.211	15.967	1	60
Hazard	Predicted hazard used in structural regressions	0.023	0.035	7.81e-11	0.379

Note: This table is based on a sample with 2603 observations used in most of the regressions in Table 2A, except for Hazard, which is based on the first regression in Table 3A (number of observation = 2625).

Table 2A: Enddemo regression results **using Polity data**, **FTAs**

	(1)	(2)	(3)	(4)	(5)
	logit	logit	xtlogit	Weibull	PH Cox
lFTA_impsh	**-4.312***	**-2.256***	**-2.906****	**-2.379****	**-2.155***
	(1.104)	**(1.194)**	**(1.431)**	**(1.157)**	**(1.103)**
llgdppc		-0.606***	-0.866***	-0.639***	-0.604***
		(0.157)	(0.297)	(0.159)	(0.140)
lDOM		-6.892**	-10.820	-17.260***	-3.983**
		(2.940)	(6.699)	(4.994)	(1.746)
lFOR		-5.031***	-6.234***	-5.815***	-4.869***
		(1.623)	(1.881)	(1.657)	(1.426)
lwar		0.557	0.526	0.319	0.384
		(0.378)	(0.515)	(0.376)	(0.371)
legal_origin		0.049	0.188	0.016	0.021
		(0.888)	(1.081)	(0.863)	(0.809)
africa		0.248	0.370	0.206	0.166
		(0.385)	(0.570)	(0.391)	(0.344)
middleeast		0.502	0.439	0.682	0.573
		(1.035)	(1.377)	(0.953)	(0.913)
socialist_trans		-0.056	-0.043	0.049	-0.046
		(1.092)	(1.213)	(1.058)	(0.999)
Spain_colony		-0.451	-0.375	-0.473	-0.431
		(0.486)	(0.586)	(0.474)	(0.448)
UK_colony		-1.184***	-1.527***	-1.268***	-1.168***
		(0.415)	(0.589)	(0.436)	(0.376)
Duration		0.456***	0.770**		
		(0.143)	(0.380)		
Duration^2		-0.010***	-0.015**		
		(0.003)	(0.006)		
Demo_spell RE			Yes		
rho			0.296*		
Test rho=0 (p-value)			[0.069]		
Pseudo R2	0.048	0.186			0.096
Log Lik	-354.9	-238.5	-237.4	-104.3	-249.7
Observations	3,445	2,603	2,603	2,603	2,603

Notes: Robust standard errors in parentheses, clustered by democracy spells in logit regressions.
*** p<0.01, ** p<0.05, * p<0.1

Table 2B: Enddemo regression results **using Cheibub et al.'s (2010) democracy data**, **FTAs**

	(1)	(2)	(3)	(4)	(5)
	logit	logit	xtlogit	Weibull	PH Cox
lFTA_impsh	**-5.869***	**-3.478**	**-3.536**	**-3.347***	**-2.658***
	(1.313)	**(1.722)**	**(2.192)**	**(1.727)**	**(1.603)**
llgdppc		-0.350*	-0.354*	-0.590**	-0.451**
		(0.210)	(0.203)	(0.233)	(0.210)
lDOM		-2.425*	-2.460	-3.820***	-2.150
		(1.398)	(1.522)	(1.224)	(1.530)
lFOR		-5.362***	-5.379***	-6.387***	-5.665***
		(1.765)	(1.740)	(2.195)	(2.060)
lwar		0.281	0.285	0.042	0.034
		(0.459)	(0.559)	(0.422)	(0.518)
legal_origin			-20.313	-16.120***	-46.274
			(30,884)	(0.962)	(0.000)
africa		1.437**	1.451**	1.736**	1.308**
		(0.566)	(0.585)	(0.693)	(0.575)
middleeast			-19.060	-13.403***	-42.883
			(21,934)	(1.216)	(0.000)
socialist_trans			1.087	2.050**	1.670
			(34,408)	(0.890)	(0.000)
Spain_colony		0.577	0.581	0.610	0.187
		(0.515)	(0.475)	(0.618)	(0.546)
UK_colony		-0.866*	-0.886	-1.118**	-0.979*
		(0.509)	(0.544)	(0.566)	(0.551)
Duration		0.146**	0.151*		
		(0.062)	(0.086)		
Duration^2		-0.003**	-0.003*		
		(0.001)	(0.002)		
Demo_spell RE			Yes		
rho			0.015		
Test rho=0 (p-value)			[0.453]		
Pseudo R2	0.063	0.182			0.183
Log Lik	-295.7	-164.7	-164.7	-61.08	-107.0
Observations	3,727	1,886	2,252	2,151	2,151

Notes: Robust standard errors in parentheses, clustered by democracy spells in logit regressions.
*** p<0.01, ** p<0.05, * p<0.1

Table 2C: Enddemo regression results, **partial-scope PTAs**

	Enddemo based on Polity			"tta" based on Cheibub et al.		
	(1)	(2)	(3)	(4)	(5)	(6)
	xtlogit	Weibull	PH Cox	xtlogit	Weibull	PH Cox
lPTA_impsh	**-0.342**	**-1.055**	**-0.446**	**-0.330**	**2.095**	**2.106**
	(1.589)	**(1.623)**	**(1.495)**	**(1.527)**	**(1.771)**	**(1.557)**
llgdppc	-0.853***	-0.655***	-0.624***	-0.400**	-0.664***	-0.488**
	(0.293)	(0.159)	(0.139)	(0.198)	(0.244)	(0.214)
lDOM	-10.423	-17.368***	-4.017**	-2.821*	-3.949***	-2.487
	(6.597)	(4.935)	(1.816)	(1.496)	(1.206)	(1.536)
lFOR	-6.630***	-5.798***	-5.110***	-6.142***	-8.287***	-7.607***
	(2.021)	(1.643)	(1.405)	(1.761)	(2.216)	(2.052)
lwar	0.464	0.270	0.328	0.170	-0.103	-0.055
	(0.503)	(0.379)	(0.379)	(0.551)	(0.400)	(0.493)
legal_origin	-0.302	-0.410	-0.284	-25.233	-15.980***	-45.587
	(1.058)	(0.750)	(0.709)	(414,798)	(1.029)	(0.000)
africa	0.348	0.174	0.161	1.509**	1.913***	1.613**
	(0.562)	(0.413)	(0.363)	(0.589)	(0.715)	(0.633)
middleeast	0.708	1.048	0.813	-23.539	-13.763***	-42.976
	(1.353)	(1.032)	(0.992)	(240,468)	(1.236)	(0.000)
socialist_trans	-0.162	-0.190	-0.198	0.796	0.964	0.807
	(1.185)	(0.921)	(0.887)	(442,323)	(0.837)	(0.000)
Spain_colony	-0.270	-0.340	-0.311	0.740	0.808	0.358
	(0.560)	(0.484)	(0.460)	(0.463)	(0.613)	(0.541)
UK_colony	-1.393**	-1.143***	-1.055***	-0.831	-1.136**	-1.084**
	(0.584)	(0.420)	(0.365)	(0.517)	(0.574)	(0.543)
Duration	0.711*			0.150**		
	(0.373)			(0.072)		
Duration^2	-0.014**			-0.003*		
	(0.006)			(0.001)		
Demo_spell RE	Yes			Yes		
rho	0.259			0.000		
Test rho=0 (p-value)	[0.114]			[0.498]		
Pseudo R2			0.095			0.181
Log Lik	-240.0	-106.7	-251.9	-166.6	-62.19	-107.4
Observations	2,603	2,603	2,603	2,252	2,151	2,151

Notes: The dependent variable in regressions (1)-(3) is the enddemo measure based on the Polity Scores. The dependent variable in regressions (4)-(6) is the transition to autocracy "tta" measure from Cheibub et al. (2010). Robust standard errors in parentheses, clustered by democracy spells in logit regressions. *** p<0.01, ** p<0.05, * p<0.1

Table 2D: Enddemo regression results, **more democratic FTAs vs. less democratic FTAs**

	Enddemo based on Polity			"tta" based on Cheibub et al.		
	(1)	(2)	(3)	(4)	(5)	(6)
	xtlogit	Weibull	PH Cox	xtlogit	Weibull	PH Cox
lFTA_impsh_moredemo	**-2.921**	**-2.270**	**-1.902**	**-6.547**	**-4.946****	**-2.674**
	(2.244)	**(1.559)**	**(1.549)**	**(7.000)**	**(2.263)**	**(2.300)**
lFTA_impsh_lessdemo	**-2.862**	**-2.425***	**-2.282***	**-3.094**	**-2.913**	**-2.763**
	(1.819)	**(1.441)**	**(1.335)**	**(2.338)**	**(2.010)**	**(1.937)**
llgdppc	-0.863***	-0.639***	-0.606***	-0.352*	-0.585**	-0.450**
	(0.297)	(0.162)	(0.142)	(0.205)	(0.232)	(0.211)
lDOM	-10.797	-17.252***	-3.971**	-2.545	-3.892***	-2.140
	(6.692)	(4.994)	(1.757)	(1.548)	(1.249)	(1.520)
lFOR	-6.242***	-5.830***	-4.886***	-5.315***	-6.405***	-5.660***
	(1.880)	(1.673)	(1.439)	(1.744)	(2.198)	(2.076)
lwar	0.526	0.320	0.385	0.301	0.058	0.035
	(0.515)	(0.375)	(0.370)	(0.563)	(0.424)	(0.519)
legal_origin	0.168	-0.003	0.006	-19.821	-16.104***	-46.276
	(1.078)	(0.858)	(0.806)	(24,105)	(0.966)	(0.000)
africa	0.369	0.205	0.165	1.451**	1.749**	1.308**
	(0.569)	(0.391)	(0.344)	(0.590)	(0.701)	(0.575)
middleeast	0.439	0.684	0.575	-17.912	-13.394***	-42.888
	(1.375)	(0.955)	(0.914)	(12,354)	(1.215)	(0.000)
socialist_trans	-0.022	0.063	-0.041	0.752	2.167**	1.676
	(1.211)	(1.055)	(0.995)	(28,316)	(0.875)	(0.000)
Spain_colony	-0.375	-0.473	-0.434	0.610	0.629	0.183
	(0.585)	(0.474)	(0.448)	(0.483)	(0.624)	(0.544)
UK_colony	-1.523***	-1.270***	-1.174***	-0.870	-1.109**	-0.981*
	(0.590)	(0.442)	(0.379)	(0.547)	(0.565)	(0.557)
Duration	0.768**			0.156*		
	(0.379)			(0.088)		
Duration^2	-0.015**			-0.003*		
	(0.006)			(0.002)		
Demo_spell RE	Yes			Yes		
rho	0.295*			0.021		
Test rho=0 (p-value)	[0.07]			[0.435]		
Pseudo R2			0.096			0.184
Log Lik	-237.5	-104.4	-249.7	-164.5	-60.94	-107.0
Observations	2,603	2,603	2,603	2,252	2,151	2,151

Notes: lFTA_impsh_moredemo covers only the FTA partners with more democratic regimes based on Polity scores. lFTA_impsh_lessdemo covers only the FTA partners with less or equally democratic regimes based on Polity scores. The dependent variable in regressions (1)-(3) is the enddemo measure based on the Polity Scores. The dependent variable in regressions (4)-(6) is the transition to autocracy "tta" measure from Cheibub et al. (2010). Robust standard errors in parentheses, clustered by democracy spells in logit regressions. *** p<0.01, ** p<0.05, * p<0.1.

Table 3A: **Structural ΔFTA and ΔPTA regression results**

	enddemo	ΔFTA_impsh		ΔPTA_impsh	
	(1)	(2)	(3)	(4)	(5)
Hazard		**0.474****	**0.508****	**-0.069**	**-0.080**
		(0.227)	**(0.233)**	**(0.115)**	**(0.136)**
Hazard^2		-1.051	-1.055	-0.153	-0.134
		(1.068)	(1.128)	(0.538)	(0.560)
lFTA_impsh		-0.145***	-0.155***		
		(0.024)	(0.025)		
lPTA_impsh				-0.092***	-0.095***
				(0.025)	(0.026)
llgdppc	-0.624***	0.008	0.006	-0.003	-0.002
	(0.153)	(0.013)	(0.012)	(0.007)	(0.006)
lDOM	-7.039**		-0.001		0.001
	(3.113)		(0.018)		(0.012)
lFOR	-5.550***		0.247**		-0.046
	(1.601)		(0.117)		(0.050)
lwar	0.533	-0.005	-0.006	0.004	0.004
	(0.370)	(0.007)	(0.007)	(0.005)	(0.005)
legal_origin	-0.131				
	(0.767)				
africa	0.300				
	(0.390)				
middleeast	0.682				
	(1.059)				
socialist_trans	-0.350				
	(0.946)				
UK_colony	-1.130***				
	(0.415)				
Spain_colony	-0.329				
	(0.488)				
Duration	0.452***				
	(0.151)				
Duration^2	-0.010***				
	(0.003)				
remoteness		-0.697	-1.255	-0.121	-0.019
		(0.879)	(0.897)	(0.368)	(0.414)
Year Dummies		Yes	Yes	Yes	Yes
Country FE		Yes	Yes	Yes	Yes
Within R-squared		0.162	0.168	0.134	0.136
Observations	2,625	2,603	2,603	2,603	2,603

Notes: Hazard is the predicted hazard based on the enddemo logit regression in the first column. Standard errors, in parentheses, are clustered by democracy spells in the logit regression in column (1). Standard errors in the second stage (columns (2)-(5)) are corrected by bootstrapping (500 replications). *** p<0.01, ** p<0.05, * p<0.1

Table 3B: **Bilateral structural ΔFTA and ΔPTA** duration regression results (1960-2007)

	FTAs			PTAs		
	(1)	(2)	(3)	(4)	(5)	(6)
Hazard_i	**8.041*****	**7.746*****	**6.306****	-0.219	-1.082	0.366
	(3.001)	**(2.867)**	**(3.013)**	(1.867)	(1.827)	(1.840)
Hazard_j	**8.147*****	**7.686*****	**6.360****	-0.092	-0.912	0.530
	(3.000)	**(2.870)**	**(2.999)**	(1.897)	(1.861)	(1.862)
Polity_i	**0.063****			-0.038		
	(0.024)			(0.025)		
Polity_j	**0.065*****			-0.039		
	(0.024)			(0.025)		
Demo_i		0.189			-1.120***	
		(0.426)			(0.274)	
Demo_j		0.190			-1.112***	
		(0.426)			(0.277)	
demo2_i			-0.822***			0.153
			(0.121)			(0.165)
demo2_j			-0.815***			0.136
			(0.121)			(0.166)
ldist	-1.428***	-1.425***	-1.467***	-0.440***	-0.458***	-0.449***
	(0.073)	(0.074)	(0.072)	(0.121)	(0.120)	(0.121)
ltrade	0.014	0.017	0.023*	0.059***	0.061***	0.059***
	(0.013)	(0.013)	(0.013)	(0.016)	(0.016)	(0.016)
gdpsum	0.098***	0.081***	0.068***	0.215***	0.219***	0.213***
	(0.026)	(0.025)	(0.025)	(0.035)	(0.035)	(0.035)
dgdp	-0.164***	-0.163***	-0.168***	-0.323***	-0.334***	-0.330***
	(0.025)	(0.025)	(0.025)	(0.042)	(0.042)	(0.041)
gdppcsum	0.252***	0.319***	0.362***	-0.555***	-0.580***	-0.581***
	(0.041)	(0.039)	(0.039)	(0.049)	(0.047)	(0.046)
dgdppc	-0.304***	-0.304***	-0.308***	-0.235***	-0.262***	-0.257***
	(0.037)	(0.037)	(0.037)	(0.067)	(0.064)	(0.066)
hegemony	-37.057***	-37.458***	-37.262***	25.924***	26.993***	27.683***
	(5.899)	(5.906)	(5.929)	(5.360)	(5.499)	(5.345)
Observations	145,414	145,414	145,274	142,932	142,932	142,792
Pseudo R2	0.288	0.287	0.293	0.259	0.264	0.258
Log Lik	-4063	-4071	-4031	-1492	-1482	-1494

Notes: *Hazard_i* and *Hazard_j* are the predicted hazards of countries i & j in a dyad based on the enddemo logit regression in the first column of Table 3A. *polity_i* and *polity_j* are the Polity scores of i & j in dyad. *demo_i* and *demo_j* are the democracy dummies for i & j based on Polity scores. *demo2_i* and *demo2_j* are the democracy dummies for i & j based on Cheibub et al.'s (2010) measures. *ldist* is the logarithm of the great circle distance. *ltrade* is the logarithm of the total trade between i & j in a given year. *gdpsum* & *dgdp* are the sum and the absolute difference of the GDPs of the two countries in a dyad. *gdppcsum* & *dgdppc* are the sum and the absolute difference of the GDP/capita of the two countries in a dyad. *hegemony* is the percentage of global trade accounted for by the country that conducts the greatest amount of commerce in a given year. The following covariates are also included in the regressions but not listed to save space. *border* is a land contingency dummy. *evercol* equals one if the two countries in a dyad have ever had colonial relationship. *comcol* equals one if the two countries in a dyad have ever shared the same colonizer. *hostility* is the average hostility level during our sample period. *alliance* is a political alliance dummy. *bothWTO* and *oneWTO* measure how many countries in a dyad are GATT/WTO members. *remoteness* is the product of the two countries' remoteness as defined in the text. Duration dependence is captured by a polynomial of the duration of a democracy up to fourth order. For more detailed information on variable definitions and data sources, please refer to Liu (2010). Robust standard errors in parentheses, clustered by country dyad. *** p<0.01, ** p<0.05, * p<0.1.

Table 4: Robustness checks, enddemo regressions using **import shares in 1960**

	(1)	(2)	(3)	(4)	(5)
	logit	logit	xtlogit	Weibull	PH Cox
lFTA_impsh60	**-7.588***	**-3.466**	**-4.357*	**-3.127**	**-3.361**
	(2.288)	**(1.559)**	**(2.494)**	**(1.364)**	**(1.412)**
llgdppc		-0.536***	-0.710**	-0.564***	-0.550***
		(0.175)	(0.282)	(0.179)	(0.162)
lDOM		-6.721***	-9.416	-16.865***	-4.320**
		(2.529)	(5.999)	(5.069)	(1.781)
lFOR		-5.501***	-6.388***	-6.106***	-5.202***
		(1.809)	(1.817)	(1.857)	(1.613)
lwar		0.352	0.310	0.094	0.209
		(0.383)	(0.516)	(0.386)	(0.372)
legal_origin		-0.069	-0.122	-0.168	-0.172
		(0.834)	(1.016)	(0.807)	(0.758)
africa		0.429	0.579	0.379	0.313
		(0.447)	(0.584)	(0.458)	(0.404)
middleeast		0.357	0.330	0.521	0.466
		(1.098)	(1.283)	(1.031)	(0.969)
socialist_trans			-17.489	-12.909***	-43.302
			(10,142)	(0.988)	(0.000)
Spain_colony		-0.471	-0.457	-0.466	-0.462
		(0.490)	(0.548)	(0.484)	(0.455)
UK_colony		-1.162***	-1.459**	-1.190***	-1.142***
		(0.428)	(0.573)	(0.450)	(0.387)
Duration		0.458***	0.684**		
		(0.130)	(0.343)		
Duration^2		-0.010***	-0.014**		
		(0.003)	(0.006)		
Demo_spell RE			Yes		
rho			0.215		
Test rho=0 (p-value)			[0.116]		
Pseudo R2	0.056	0.192			0.0991
Log Lik	-358.6	-208.5	-207.8	-88.09	-209.7
Observations	3,141	2,231	2,296	2,296	2,296

Notes: Robust standard errors in parentheses, clustered by democracy spells in logit regressions.
*** p<0.01, ** p<0.05, * p<0.1

Table 5: Robustness checks, enddemo regressions with **other controls and dropping observations**

	Add WTO & Openness			Drop Some EU & MERCOSUR		
	(1)	(2)	(3)	(4)	(5)	(6)
	xtlogit	Weibull	PH Cox	xtlogit	Weibull	PH Cox
lFTA_impsh	**-2.590***	**-1.833***	**-1.799***	**-2.786***	**-2.326****	**-2.065***
	(1.514)	**(1.107)**	**(1.092)**	**(1.434)**	**(1.157)**	**(1.098)**
llgdppc	-0.850***	-0.558***	-0.560***	-0.858***	-0.634***	-0.596***
	(0.325)	(0.171)	(0.150)	(0.298)	(0.159)	(0.141)
lDOM	-11.662	-18.053***	-4.320**	-11.031	-17.199***	-4.079**
	(7.093)	(4.983)	(1.815)	(6.782)	(4.980)	(1.764)
lFOR	-5.815***	-5.335***	-4.561***	-6.162***	-5.781***	-4.811***
	(2.065)	(1.722)	(1.523)	(1.881)	(1.660)	(1.432)
lwar	0.293	0.095	0.216	0.527	0.319	0.386
	(0.578)	(0.394)	(0.385)	(0.516)	(0.376)	(0.371)
legal_origin	0.238	0.236	0.091	0.158	0.008	0.006
	(1.147)	(0.843)	(0.809)	(1.086)	(0.861)	(0.806)
africa	0.405	0.310	0.204	0.374	0.207	0.168
	(0.606)	(0.420)	(0.360)	(0.573)	(0.390)	(0.343)
middleeast	0.279	0.563	0.467	0.413	0.672	0.552
	(1.471)	(0.911)	(0.887)	(1.382)	(0.954)	(0.917)
socialist_trans	-0.465	-0.513	-0.465	-0.033	0.048	-0.040
	(1.339)	(1.119)	(1.086)	(1.217)	(1.053)	(0.990)
Spain_colony	-0.376	-0.500	-0.441	-0.373	-0.472	-0.433
	(0.630)	(0.543)	(0.485)	(0.589)	(0.475)	(0.449)
UK_colony	-1.388**	-1.066**	-1.043**	-1.523***	-1.263***	-1.162***
	(0.653)	(0.472)	(0.417)	(0.590)	(0.435)	(0.375)
Lagged Openness	**-0.005**	**-0.008**	**-0.004**			
	(0.007)	**(0.007)**	**(0.007)**			
WTO Membership	**-0.182**	**-0.169**	**-0.130**			
	(0.433)	**(0.333)**	**(0.280)**			
Duration	0.835**			0.782**		
	(0.409)			(0.385)		
Duration^2	-0.016**			-0.015**		
	(0.007)			(0.006)		
Demo_spell RE	Yes			Yes		
rho	0.337*			0.300*		
Test rho=0 [p-value]	[0.057]			[0.067]		
Log Lik	-230.96	-99.94	-239.9	-237.1	-104.2	-249.5
Observations	2,589	2,589	2,589	2,525	2,525	2,525

Notes: Robust standard errors in parentheses, clustered by democracy spells. *** p<0.01, ** p<0.05, * p<0.1
Regressions (1)-(3) use two additional variables: WTO membership dummy and overall Openness.
Regressions (4)-(6) drop the following EU & MERCOSUR members: (a) Czech Rep., Estonia, Cyprus, Latvia, Lithuania, Hungary, Malta, Poland, Slovenia and Slovakia from 2004 onward; (b) Bulgaria and Romania from 2007 onward; (c) Argentina, Brazil, Paraguay, and Uruguay from 1998 onward.

Table 6: Robustness checks, enddemo regressions with **stricter threshold and endauto regressions**

	Only Enddemo where Δpolity2≥5			End of Autocracy (Endauto)		
	(1)	(2)	(3)	(4)	(5)	(6)
	xtlogit	Weibull	PH Cox	xtlogit	Weibull	PH Cox
lFTA_impsh	**-3.360****	**-2.838***	**-2.630***	**-1.213**	**-0.727**	**-0.673**
	(1.646)	**(1.499)**	**(1.430)**	**(3.540)**	**(0.762)**	**(0.763)**
llgdppc	-0.839***	-0.614***	-0.593***	-2.406***	-0.139	-0.129
	(0.317)	(0.167)	(0.148)	(0.807)	(0.109)	(0.113)
lDOM	-11.026	-15.617***	-4.277**	1.625	3.463***	2.789***
	(7.226)	(5.100)	(2.005)	(3.353)	(1.081)	(0.962)
lFOR	-6.507***	-6.231***	-5.121***	-12.065***	3.296***	2.994***
	(2.123)	(1.789)	(1.522)	(3.490)	(0.936)	(1.091)
lwar	0.036	-0.015	0.046	0.340	0.488	0.442
	(0.630)	(0.433)	(0.468)	(0.938)	(0.323)	(0.322)
legal_origin	0.568	0.288	0.248	-6.989**	-0.183	-0.216
	(1.142)	(0.929)	(0.867)	(3.238)	(0.595)	(0.584)
africa	0.188	0.202	0.106	-7.051***	-1.241***	-1.220***
	(0.637)	(0.431)	(0.381)	(1.823)	(0.324)	(0.324)
middleeast	0.668	0.868	0.758	-15.666***	-2.541***	-2.535***
	(1.439)	(0.999)	(0.919)	(5.128)	(0.937)	(0.897)
socialist_trans	-0.627	-0.266	-0.374	5.580	-0.043	-0.014
	(1.334)	(1.219)	(1.133)	(3.547)	(0.650)	(0.629)
Spain_colony	-0.523	-0.544	-0.510	1.236	-0.176	-0.098
	(0.645)	(0.532)	(0.509)	(1.869)	(0.365)	(0.376)
UK_colony	-1.841***	-1.552***	-1.417***	1.887	0.169	0.292
	(0.688)	(0.536)	(0.457)	(1.393)	(0.318)	(0.316)
Duration	0.765*			0.305***		
	(0.403)			(0.115)		
Duration^2	-0.014**			-0.001		
	(0.006)			(0.004)		
Demo_spell RE	Yes			Yes		
rho	0.330*			0.978***		
Test rho=0 [p-value]	[0.069]			[0.000]		
Log Lik	-197.7	-92.86	-191.1	-224.8	-129.8	-281.2
Observations	2,603	2,603	2,603	2,435	2,253	2,253

Notes: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1
Regressions (1)-(3) consider only the cases of enddemo where the polity2 score moves from strictly positive to non-positive *and* drops by at least 5 points in a year. This implies that the following 16 cases, previously classified as enddemo=1, become enddemo=0: Azerbaijan (1993), Benin (1963), Comoros (1995), Cote D Ivoire (2002), Cuba (1952), Ecuador (1961), Guatemala (1974), Guyana (1978), Haiti (2000), Indonesia (1950), Kenya (1966), Sierra Leone (1997), Sudan (1970), Thailand (1991), Uganda (1985), Zambia (1968).
Regressions (4)-(6) refer to *endauto* regressions, where endauto=1 if the polity2 score moves from strictly negative to non-negative.

Table 7: Robustness checks, structural ΔFTA and ΔPTA regression using **import shares in 1960**

	ΔFTA_impsh60		ΔPTA_impsh60	
	(1)	(2)	(3)	(4)
Hazard	**0.414***	**0.438****	**0.012**	**0.043**
	(0.216)	**(0.194)**	**(0.100)**	**(0.110)**
Hazard^2	-0.776	-0.675	-0.067	-0.210
	(0.968)	(0.836)	(0.506)	(0.537)
lFTA_impsh60	-0.102***	-0.123***		
	(0.025)	(0.036)		
lPTA_impsh60			-0.091**	-0.092**
			(0.040)	(0.039)
llgdppc	0.020	0.017	-0.009	-0.009
	(0.013)	(0.015)	(0.014)	(0.014)
lDOM		-0.008		0.006
		(0.015)		(0.008)
lFOR		0.344**		-0.050
		(0.142)		(0.063)
lwar	-0.006	-0.008	0.001	0.001
	(0.004)	(0.004)	(0.003)	(0.003)
remoteness	-0.220	-0.983	-0.509	-0.404
	(0.633)	(0.791)	(0.442)	(0.450)
Year Dummies	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes
Within R-squared	0.081	0.099	0.067	0.070
Observations	2,296	2,296	2,296	2,296

Notes: Hazard is the predicted hazard based on the enddemo logit regression in the first column in Table 3A. Standard errors are corrected by bootstrapping (500 replications). *** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table 8: Robustness checks, structural ΔFTA regression with **additional controls**

	(1)	(2)	(3)	(4)
	ΔFTA_impsh	ΔFTA_impsh	ΔFTA_impsh	ΔFTA_impsh
Hazard	**0.473****	**0.467****	**0.504****	**0.495***
	(0.231)	**(0.231)**	**(0.249)**	**(0.258)**
Hazard^2	-1.058	-0.986	-1.163	-1.102
	(1.091)	(1.057)	(1.386)	(1.125)
lFTA_impsh	-0.145***	-0.145***	-0.146***	-0.151***
	(0.024)	(0.025)	(0.026)	(0.026)
llgdppc	0.008	0.008	0.008	0.009
	(0.013)	(0.013)	(0.012)	(0.013)
lwar	-0.005	-0.005	-0.005	-0.003
	(0.007)	(0.007)	(0.007)	(0.007)
remoteness	-0.695	-0.696	-0.722	-0.830
	(0.864)	(0.915)	(0.911)	(0.924)
demo_pt	**-0.002**			
	(0.018)			
lreg_change		**-0.008**		
		(0.009)		
var(Polity)_10yr			**-0.000**	
			(0.000)	
lpolcomp				**0.002**
				(0.002)
Within R-squared	0.124	0.124	0.124	0.130
Observations	2,603	2,603	2,603	2,541

Notes: Hazard is the predicted hazard based on the enddemo logit regression in the first column in Table 3A. Standard errors are corrected by bootstrapping (500 replications). *** p<0.01, ** p<0.05, * p<0.1. *demp_pt* is a dummy indicating the current democracy status (i.e., polity>0). *lreg_change* is a dummy indicating if a country's polity score changes sign (from positive to negative or vice versa), lagged by one year. *var(Polity)_10yr* is the variance of polity scores during the last 10 years. *lpolcomp* measures the degree of general political competition in a country, as defined in Polity IV, lagged by one year.