

# The Politics of Preferential Trade Liberalization in Authoritarian Countries

## Abstract

While autocracies constitute a third of all signatories of preferential trade agreements (PTAs), very little research has explained why some autocrats join PTAs while others do not. We argue that this variation reflects the leader's degree of vulnerability to elite-led coups during leadership change, i.e. whether a leader enters power legally or extralegally. New extralegal leaders are more vulnerable than new legal leaders, which encourages extralegal leaders to use PTAs to both build support from exporters and pressure disloyal importers. We test our hypotheses using a dyadic dataset of 120 autocracies from 1960 to 2014. Our results show that extralegal leaders sign more and deeper PTAs than legal leaders. Moreover, we find that extralegal leaders with a high risk of coups are more likely to form deep PTAs than extralegal leaders with a low risk of coups. In line with our argument, we also provide evidence that extralegal leaders sign trade agreements that are likely to be enforced. Our paper has implications for the political economy of trade and for development studies.

## Introduction

Why are some authoritarian regimes more likely to cooperate on international trade policy than others? Previous studies focus mainly on the democracy/autocracy divide and on institutional differences among democratic regimes, finding that democratic regimes are more likely to implement free-trade policies and to form trade agreements than autocratic regimes (Mansfield, Milner, and Rosendorff 2002; Milner and Kubota 2005; Hollyer and Rosendorff 2012). The basic mechanism boils down to electoral accountability: political leaders subject to electoral accountability liberalize trade to appease the median voter rather than cater to vested interests through protectionism. Other studies explore how different democratic institutions impact the influence of interest groups on trade policies. These studies find that proportional representation, a strong party system, and low access points for lobbying insulate the executive power from interest groups, thereby reducing protectionism (Rogowski 1987; Ehrlich 2007).

While previous studies have greatly enhanced our understanding of the politics of trade policy, few studies account for the variation in trade policy among autocracies (see Hankla and Kuthy (2013) for an important exception). This is somewhat surprising given the recent body of literature on autocratic institutions developed by scholars working in comparative politics. For instance, Gandhi (2008a) argues that authoritarian regimes are motivated to create or empower institutions (e.g. parliaments) that allow for limited policy-making ability. Other studies argue that autocratic institutions reduce the threat of collective action if elite power-sharing arrangements are infringed (Wright 2008; Svobik 2009; Gehlbach and Keefer 2011). Such different institutional arrangements impact the protection of property rights (Gehlbach and Keefer 2011), increase domestic investment (Wright 2008), and bolster economic growth (Gandhi and Lust-Okar 2009). Strikingly, trade policy has been largely ignored.

This paper takes a first step toward analyzing trade policy in autocratic regimes. Our paper focuses on a specific type of trade liberalization: preferential trade agreements (henceforth,

PTAs).<sup>1</sup> By narrowing our analysis to PTAs, we put forward a theory (and test it empirically) that explains why some autocratic leaders have incentives to institutionalize trade liberalization. We argue that leaders who enter office by extralegal means (e.g., a coup) have credibility problems: promises made to their elite supporters are less credible than those made by leaders who negotiate their way into power. Lack of credibility threatens elite safety in the future and encourages them to plot against the dictator. Thus, extralegal leaders are more vulnerable to elite-led coups. Implementing preferential trade liberalization reduces leader vulnerability by building elite cooperation in two ways: (1) provide market access for exporters and (2) engender loyalty from importers through trade exemption clauses. In this manner, extralegal leaders use trade agreements to consolidate support among their elites. However, once extralegal leaders have consolidated power, incentives to further liberalize disappear.

We test this argument with a dyadic dataset that includes 120 autocracies from 1960 to 2014. Our empirical results can explain the level of liberalization commitments in virtually all PTAs signed by autocratic regimes since World War II. Our empirical analysis uses both a dichotomous measure of PTA formation and a continuous measure of preferential liberalization to test both the presence and absence of a PTA as well as the level of commitment once a PTA is formed. Our results show that extralegal leaders are more likely to sign PTAs with more extensive liberalization commitments and stricter enforcement provisions than legal leaders. However, this effect is short-lived and only holds in the first fifteen years in which an extralegal leader is in power. Importantly, our findings indicate that extralegal leaders with a high risk of coups are much more likely to form deep PTAs than extralegal leaders with a low risk of coups. We also find that extralegal leaders prefer to implement preferential trade liberalization with northern countries rather than with southern countries. Finally, we refute the alternative hypothesis that extralegal leaders commit to international treaties to boost their international reputation. Indeed, extralegal leaders are *not* more likely to sign other types of international treaties, e.g. human rights treaties.

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<sup>1</sup>PTAs are international arrangements under which each member grants special market access to all the other members' products (Bhagwati and Panagariya 1999).

The somewhat counter-intuitive conclusion is that autocratic leaders who prefer high tariffs actually end up committing to preferential liberalization through international treaties. While this effect is short-lived, PTAs, once signed, are there for good. Therefore, the liberalization commitments included in these PTAs that extralegal leaders sign early in their tenure are long-lasting and affect trade policies in autocratic regimes independently of their leaders' fates. Assuming that preferential liberalization erodes the rents of those groups favoring the status-quo, such long-lasting trade policy effects reconcile our findings with those from previous studies documenting robust correlations between PTAs and democracies and between PTAs and democratic consolidation (Mansfield, Milner, and Rosendorff 2002; Manger 2014).

The paper proceeds as follows. The first part of the paper provides the theoretical background, which explains why extralegal dictators have incentives to implement trade liberalization through PTAs. The second part describes the data and empirical strategy. Part three reports the main results, and part four explores the mechanisms highlighted by our theory. In part five, we subject our results to a large number of robustness checks. The last section concludes.

## **Leadership Change and International Trade Agreements**

A fundamental characteristic of autocratic politics is the relationship between leadership survival and succession (Brownlee 2007). At the heart of this relationship lies a credibility problem during leadership change: new autocratic leaders cannot promise that the privileges and benefits shared with their elites from the previous leader will be maintained when these leaders consolidate their rule in the future (Magaloni 2008). The creation of legislatures (Gandhi 2008*b*) and parties (Geddes 1994; Magaloni and Kricheli 2010) ameliorates this problem by imposing constraints on a leader's power. However, the degree to which institutional checks affect the leader will depend on the manner in which a leader entered power (Svolik 2009).

The type of autocratic leadership change, a process that we call the "mode of the entry", pro-

foundly affects an autocrat's credibility with her elite supporters. We argue that there are two ways that autocrats can enter power: legally, according to the autocracy's established rules of succession, or extralegally, circumventing the rules through a palace revolt or coup. New legal leaders have more credibility because they are generally regime insiders: they come from the royal family in monarchies, the party leadership in dominant-party regimes, the officer corps in military regimes, and so on. Regime insiders have a history of working with other members of the elite. This history makes these leaders' preferences and loyalties known, which fosters trust and allows legal leaders to make credible commitments. For example, dynastic succession allows elites from the previous leader to enjoy the same privileges under the new leader (Tullock 1987). As a result, new legal leaders have greater support by elite supporters from the previous leader. The system of primogeniture rule or succession by the eldest male heir in monarchies exemplifies how legal leadership change promotes ruler-elite stability (Kokkonen and Skrondal 2014). In sum, the insider status of new legal leaders generate a stable post-transition political environment.

In contrast, new extralegal leaders epitomize the political outsider: they enter power by challenging the rules of succession precisely because they could not do so under the established regime. Their loyalties and preferences are more uncertain, making ruling elites worry that they may break promises and conduct purges. According to Bove and Rivera (2015), when supporting coalition elites perceive that the leader's preferences are uncertain or even unpredictable, these elites begin to fear for their own safety and are more liable to plot against the dictator. Drawing on this insight, we argue that extralegal transitions with its lack of continuity and uncertainty make supporting coalition elites fearful for their future safety. As such, these elites have incentives to launch coups against the leader. This argument parallels a general argument by Brownlee (2007) that leadership change caused by coups, revolutions, or palace revolts often lead to violent conflict among elites in the post-transition period.

Figure 1 about here

Empirical evidence of the relationship between mode of entry and insider status is displayed

in Figure 1. Here, the vertical axis in Figure 1 shows the proportion of legal and extralegal autocratic leaders who are coded as affiliated with the previous regime (Svolik 2012). We can see that roughly two-thirds of legal leaders are insiders, as compared to only one-third of extralegal leaders, and this difference is statistically significant. From this, we can see that legal leaders overwhelmingly enter into power following the rules of succession from the previous regime but this rarely occurs for extralegal leaders.

As an illustration of the distinction between legal and extralegal leaders, consider the Gnassingbé's of Togo. Eyadéma Gnassingbé seized power by a coup in 1967 and managed to survive at least three assassination attempts, two of which came in the first ten years of his rule (Glickman 1992). In contrast, his son, Faure Gnassingbé who succeeded his father in dynastic fashion enjoyed the full support of his father's supporters: as the *New York Times* (Polgreen 2005) reported,

[after the death of] Gnassingbé Eyadéma, Africa's longest serving ruler, the military quickly sealed Togo's borders and declared the son president. Lawmakers in Lomé, the capital, fell into line acting on Sunday to change a constitutional requirement for new elections.

While his father's entry into power involved fighting off assassination attempts from his elite supporters, Faure's ascension into power was welcomed by existing elites. The violent challenges that Eyadéma Gnassingbé experienced contrasted sharply with his son's experience, a narrative consistent with the difference between the two leaders' mode of entry.

Extending the mode of entry logic to trade policy is straightforward. Legal leaders without credibility problems are less vulnerable to elite-led coups, which affords the leader the freedom to select trade policy that maximizes government revenues. As long as elites can trust the new leader to share in the benefits that they enjoyed from the previous leader, high barriers to trade are the natural policy choice for autocracies (Hankla and Kuthy 2013; Milner and Kubota 2005). Thus, legal leaders have little incentive to liberalize trade much less institutionalize such liberalization through trade agreements.

However, this logic does not apply to extralegal leaders who lack credibility with their elite supporters. The lack of history between such leaders and their elite supporters makes it more difficult for these leaders to building stable political support coalitions. As such, extralegal leaders particularly need credible policy instruments. We argue that international trade agreements are such an instrument for extralegal leaders.

Trade agreements in contrast to unilateral liberalization provide larger benefits to exporters by offering market access in the form of enhanced protection. In general, trade agreements expand markets for exporter goods by providing higher prices and greater profits (Grossman and Helpman 1995). However, a common effect of preferential trade agreements is a “trade diversion” effect whereby preferential access to a country’s protected market can increase exporter profits by members within the trade agreement but adversely hurt producers of the same good for non-members (Aghion, Antrás, and Helpman 2007). For this reason, trade agreements are particularly profitable for export elites, and thus, PTAs offer leaders a policy instrument that is more beneficial for building exporter support than unilateral domestic policies.

To take one paradoxical example, consider the formation of the EC-Algeria Association Agreement signed in 1969 between Algeria and the European Community. Algerian leader Boumédiène’s rule involved massive expansion of the state and nationalization of key industries such as oil (Quandt 1969). The roots of Boumédiène’s sudden desire to liberalize trade can be traced to his entry into power by a bloodless coup in 1965 and the subsequent internal violent post-transition politics that characterized the early years of his rule. Unsurprisingly, a key provision in the EC-Algeria agreement was the imposition of zero rates on two of Algeria’s largest exports, textiles and refined petroleum products (Lawless and Findlay 1984). Since the European market is a customs union, such agreements would naturally worsen the terms of trade for these zero-rate sectors to all non-members of the agreement (Winters 1997). Although Boumédiène personally did not have liberal economic tendencies, his early struggles to consolidate power motivated him to seek the enhanced protection offered by the EC-Algeria PTA to curry favor with exporters.

As another example, consider Indonesia's involvement with the regional trade agreement, the Association of Southeast Asian Nations (ASEAN) in 1971. A few years earlier, General Suharto came into power by a coup in 1966 by deposing President Sukarno. One of Suharto's key pillars of support came from the Chinese *cukongs* or business elites. They provided the capital and financial acumen to support Suharto's New Order (Robison 1986). To cement this relationship, Suharto used ASEAN's preferential tariff rates for agricultural and commodity products for its members to entice several prominent Chinese *cukongs* who had large stakes in raw commodities such as rubber and timber (Chua 2008). For example, the rubber industry has been one of Indonesia's major agricultural exports since the 1940's, and the foundation of the Indonesian rubber industry happens to be Chinese capital (Thomas and Panglaykim 1976, 159). ASEAN thus provided Suharto with a credible policy to obtain cooperation from Chinese business elites that had exclusive monopolies in these commodity markets. While the opaque nature of autocratic politics makes it difficult to draw strong conclusions, these brief examples show how the diversion-enhancing qualities of trade agreements can entice leaders to favor trade agreements if only to improve their survival prospects.

A second advantage from trade agreements is the commodity price protection given to exporters in developing countries. Until recently, many North-South trade agreements contained an export stabilization scheme that helped to prevent market fluctuations from hurting the price of exports for developing countries in the trade agreement. If the price of a particular export commodity fell below a minimum price threshold, then the exporter would be compensated through some type of disbursement process (Gruhn 1976). For example, many agreements between the European Community and African, Caribbean, and Pacific (ACP) countries were designed to remedy the harmful effects that market volatility would impose on ACP export earnings (Orbie 2007). By protecting them against market fluctuations, export elites have strong incentives to support leaders who push for such agreements.

Indeed, these stabilization schemes even enticed the most anti-liberal of leaders. One notorious example of anti-capitalist turned temporary free-trader is Benin's Mathieu Kérékou. Three



years after coming into power by a military coup in 1972, he advocated a Marxist-Leninist position for the state but also signed the Lomé Convention to join the European Community. Not only did Benin receive preferential market access to the European market, but it also obtained a compensation fund scheme that would compensate Benin's cotton exports if its earnings fell below a minimum threshold (Gruhn 1976).

While trade agreements provide obvious benefits to export elites, they can even induce support from elites in the import-competing sector. Here, autocrats can use trade agreements as a divide-and-rule tactic among import elites. In democracies, politically sensitive sectors obtain exemptions in trade agreements to make the conclusion of such agreements more feasible (Maggi and Rodriguez-Clare 1998). Grossman and Helpman (1995) explain, "Exemptions allow the government to capture the support of some potential losers, while at the same time winning the favor of exporters...who would benefit from the agreement (684)." Applying this logic, autocrats can use exemption provisions to credibly build support with a portion of import elites. The trade agreement serves as a credible commitment to import elites in the excluded sector. Both the external costs (international reputation) and the internal costs (loss of support from export elites) make the trade agreement doubly binding and more credible than any domestic policy to share rents or unilateral trade policy to protect importers.

Consider again Suharto's willingness to join ASEAN in 1971. While he certainly needed the support of the Chinese *cukongs*, his first and major pillar of support came from the military, whose support he had difficulty initially obtaining. Indeed, early in his reign, Suharto was merely a "first among equals" with other military officers and had to foster trust among his fellow officers (Aspinall 2005). He attempted to gain the support of many military officers by granting bureaucratic positions to them. As many as twelve former military commanders occupied top posts in his twenty-three-member cabinet. However, Suharto's personalization of power continued to raise suspicions among other military officers (Lee 2015). No amount of promises could curtail some members of the military from threatening Suharto's rule, especially those military commanders that hailed from Java, the main island where the government and

two-thirds of its population reside (Wanandi 2012). The trade profile for Java heavily favored imports: for example, export shares in Java averaged around 14% per year from 1950 to 1965 and barely reached 18% in the 1970's (Booth 1998). Given the heavy reliance on imports, even the most modest of trade liberalization would entail high adjustment costs to Javanese military commanders tied with the businesses in Java (Robison 1986).

By willing to enter into a trade agreement, Suharto would thus be antagonizing the military, which had substantial stakes in many of the extremely uncompetitive import-competing industries (Pepinsky 2009). Trade liberalization would adversely affect the import sector (Tin 1981) and reduce the benefits obtained by Indonesian military officers tied with those industries (Robison 1986). To remedy these adjustment costs, ASEAN included a number of exemption provisions that allowed Indonesian manufacturing to receive a certain degree of protection (e.g., imported goods must contain 60 percent local content) (Tin 1981, 5). These exemptions did not apply to every industry, and Suharto could selectively decide how to reward those industries with supporters loyal to him. Hence, Suharto could use ASEAN to reward loyal import elites and punish disloyal import elites.

As a final advantage, trade agreements can directly increase the existing resources that leaders obtain from exports of cash crops, agricultural crops that are grown for profit rather than subsistence. This argument extends the oil wealth and regime consolidation argument discussed by Wright, Frantz, and Geddes (2013). Their study finds that autocratic regimes with oil wealth can use the rents from oil to gain the military's support by offering higher wages, better equipment, and other benefits. This reduces the likelihood that these military officers will participate in coup attempts against the regime. Applying this logic to cash crops more broadly, we argue that vulnerable, extralegal leaders can use trade agreements to increase the profits derived from cash crops and use these revenues to co-opt the military. Since trade agreements require concessions in the import-competing sector, the benefits from additional revenues versus the costs of adjustment by importers is not so clear for legal leaders. However, for extralegal leaders with credibility problems, the benefits of higher rents from cash-crop

exports far outweighs the additional loss of support from import-competing elites.

Idi Amin and his participation in the Lomé I Convention captures this idea. After coming into power in 1971 by a coup, Amin nationalized over fifty industries (many with EC origins) and yet was a strong advocate for participation in the Lomé Convention to increase Uganda's coffee exports (Orbie 2007). Since coffee was the primary source of foreign capital, government revenues generated from increased coffee exports would help Amin consolidate his rule by providing higher wages and other additional privileges to his soldiers (Nurnberger 2003). This example as well as the previous illustrations highlight the ability of trade agreements to address the credibility and concomitant vulnerability to elite-led challenges that extralegal leaders face.

To recap, our argument proceeds in two steps. First, new extralegal leaders due to their lack of credibility are more vulnerable to elite-led coups and revolts. Second, this vulnerability forces extralegal leaders to use trade agreements to build elite support and consolidate their rule. This argument leads to our first hypothesis:

**H1:** Extralegal leaders sign more PTAs than legal leaders.

Thus far, our discussion highlighted the myriad ways in which PTAs enable extralegal leaders to co-opt export and import elites. To credibly gain elite support, this argument relies on an implicit assumption that these agreements have to include sufficiently large commitments to shift away from the status quo. In other words, for our argument to be valid, the trade agreement must be sufficiently deep to obtain elite cooperation. The depth of the agreement matters as trivial increases in the exchange of goods neither compensate export elites nor sufficiently protect loyal import elites. For example, leaders could decide to sign “shallow” trade agreements, which do not improve market access, do not include market-friendly policies, e.g. eliminating behind-the-border barriers, and are essentially agreements on paper only (Downs, Locke, and Barsoom 1996). Since such agreements are akin to “cheap talk” that is neither beneficial for elites not particularly costly for dictators, extralegal leaders seeking to gain elite

support would need to sign trade agreements with larger commitments than legal leaders. This leads to our second hypothesis:

**H2:** Extralegal leaders sign PTAs with greater depth than legal leaders.

This distinction between legal and extralegal leaders, however, should not persist forever. Since mode of entry is an event rather than a more permanent characteristic such as leader preferences (Colgan 2013), then over time, extralegal leaders can build their credibility with elite supporters and eventually establish a stable political support coalition. Figure 2 illustrates this point by showing the relationship between mode of entry and the risk of a coup attempt. The vertical axis shows the smoothed hazard rate of a coup attempt, while the horizontal axis displays the number of years that a leader has been in power. The solid and dashed lines are the hazard rates for legal and extralegal leaders, respectively, while the shaded areas show the 95 percent confidence intervals. Here, legal leaders are significantly less threatened by coup attempts than extralegal ones for roughly their first ten years in office. After ten years, the coup risk is indistinguishable between legal and extralegal leaders.

Figure 2 about here

This figure indicates that the mode of entry only affects a new leaders' credibility and subsequent vulnerability to elite-led coups in their initial years in power. Indeed, early in their tenure, extralegal leaders are unusually vulnerable. During their later years, they are no different from their legal counterparts and thus their trade policies and propensity to form PTAs should converge over time, leading to our final hypothesis:

**H3:** The propensity for new extralegal leaders to sign more and deeper PTAs should diminish over time.

## Research Design

In this section we test our hypotheses using a reduced form approach. We first present our data and then describe our empirical strategy. We explain the formation of up to 307 PTAs signed by 5,828 dyads of countries between 1960 and 2014. The data come from Desta (Dür, Baccini, and Elsig 2014).<sup>2</sup> We rely on two different operationalizations of preferential liberalization in the main analysis. First, we use a dummy for PTA as our dependent variable. We consider this specification as our baseline model, which facilitates the comparison with previous studies that also rely on a dichotomous operationalization of PTAs. We label this variable *PTA*.<sup>3</sup> The problem with this operationalization is that there is a great deal of heterogeneity among PTAs and that some shallow PTAs, especially between developing countries, are only valid on paper. Importantly for our argument, a dichotomous operationalization of PTAs is at risk of lumping together agreements that create the commitment device needed by extralegal leaders with agreements that do not create any credible commitments.

To account for the heterogeneity among PTAs and to test our second hypothesis, we rely on an alternative specification of our outcome variable: a continuous variable measuring the level of market access produced by PTAs. We label this variable *Depth* and the data come from Desta (Dür, Baccini, and Elsig 2014). This indicator is built on 48 dummies that capture the inclusion of market friendly provisions in the design of a PTA. These provisions remove behind-the-door barriers, which enhance competition in liberalizing markets. For example, our variable captures whether a PTA has a chapter regulating investment or service liberalization and, if so, the specific provisions included (e.g. the presence of a national treatment clause or of an enforcement mechanism to protect investment). Since a large number of these 48 dummies are highly correlated, we generate a single variable using latent trait analysis to avoid overestimating PTAs with many commitments.<sup>4</sup>

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<sup>2</sup>The data are available at <http://www.designoftradeagreements.org/>.

<sup>3</sup>Figure A2 in the appendix shows the hazard rate of forming a PTA for legal and extralegal leaders.

<sup>4</sup>Latent trait analysis is similar to factor analysis. While factor analysis relies on a Pearson correlation, latent trait analysis is suitable for binary data. Figure A3 has the provisions included in *Depth*. See Dür, Baccini, and

The main independent variable, *Extralegal Leader*, is a dummy variable that scores one if an autocratic leader enters power irregularly and the leader *was not* part of the previous regime. Indeed, a scope condition of our theory is that extralegal leaders are regime outsiders. Moreover, since our theory argues that leaders sign PTAs to secure their rule, incentives to form PTAs should fade away as the length of the leader’s tenure increases. Thus, in one model specification we interact *Extralegal Leaders* with the number of years in which the leader has been in power (labeled *Tenure*). For *Extralegal Leader* and *Tenure*, the data come from Goemans, Gleditsch, and Chiozza (2009), whereas data on affiliation with the previous regime come from Svolic (2012). Besides the type of autocratic leader, several alternative causal mechanisms could drive participation in PTAs. Therefore, we add a set of control variables to avoid overestimating the effect of the main explanatory variable. Since we have directed dyads, monadic variables appear twice on the right-hand side of our equation for both country *i* and country *j*. All covariates are lagged by one year to mitigate post-treatment bias.

First, we include several ‘gravity model’ variables: Contiguity, (log of) Distance, (log of) GDP, (log of) GDPpc, GDP growth, and (log of) Trade. Second, we add a variable capturing the type of regime of country *j*. Third, we include a dummy that scores one if country *i* is a GATT/WTO member. These control variables are commonly included on the right hand-side of empirical models predicting the formation of PTAs (Mansfield, Milner, and Rosendorff 2002). Finally, we include variables capturing the type of autocracy, i.e., a party-based dictatorship, a military regime, a monarchy, or a personalistic regime. Indeed, it might be the case that autocracies with extralegal leaders are less institutionalized than autocracies with legal leaders, which in turn might affect trade policy. We use monarchy as the reference category, and so it does not appear on the right hand-side of our models. Table A1 in the appendix reports the descriptive statistics and source of all the variables used in our models.

We test our hypothesis with two main models. The unit of analysis for both model specifications is a directed dyad in which country *i* is *always* an autocratic regime, but country *j*

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Elsig (2014) for details on its operationalization. The kernel density distribution in the appendix (Figures A4) shows that there is a great deal of variation among PTAs and that the large majority of PTAs are quite shallow.

can be either autocratic or democratic. Specifically, we drop from the dataset, countries  $i$  that have a Polity IV score greater than five.<sup>5</sup> We choose this design since our theory applies only to autocratic leaders, who can form PTAs with either democracies or dictatorships. Our dataset is unbalanced with 120 country  $i$ 's and 199  $j$ 's, although we lose many observations due to missing values. Standard errors are clustered at the dyadic level. When the dependent variable is binary, we use a Cox Model, which is particularly appropriate to handle repeated spells (some dyads sign more than a PTA during our time span) as well as left- and right-censoring (Box-Steffensmeier and Jones 2004). For our continuous outcome variables, zeros in the variable may imply both the absence of PTAs or very shallow PTAs, i.e. *Depth* equal to zero. To remedy this, we estimate Tobit regressions using the following baseline equation:

$$Depth_{ij,t} = \beta_0 + \beta_1 Extralegal Leader_{i,t-1} + \beta_2 X_{ij,t-1} + \beta_3 Z_{i,t-1} + \beta_4 W_{j,t-1} + \theta_t + \epsilon_{ij,t}, \quad (1)$$

where *Depth* is the level of depth of a PTA signed by country  $i$  and country  $j$  at time  $t$ . *Depth* captures the level of depth of a PTA from the year of signature onwards. If the same dyad signs more than one PTA, which is all but uncommon, the scores for depth of the new PTA replace the scores of the old one.  $\beta_0$  is a constant, whereas  $\beta_1$ ,  $\beta_2$ ,  $\beta_3$ , and  $\beta_4$  are the coefficients. The key coefficient of interest is  $\beta_1$ , which we expect to be positive.  $X_{ij,t-1}$  is a vector of dyadic control variables,  $Z_{i,t-1}$  and  $Z_{j,t-1}$  are vectors of monadic control variables related to respectively country  $i$  and country  $j$ , and  $\theta_t$  are year fixed effects. Finally,  $\epsilon_{ij,t}$  is the error term.

In our main model specification, we are unable to include country fixed effects, since for several countries they correlate perfectly with *Extra Legal Leader*. That would leave us with limited within-country variation to explain. However, to account for the fact that autocracies are heterogeneous, we implement a robustness check in which we include country fixed-effects and rely on OLS estimates. Our main results survive this test.

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<sup>5</sup>Results are similar if use a dummy for democracy based on the coding rule by Cheibub, Gandhi, and Vreeland (2010).

The second model is an error correction model (ECM), which distinguishes between the short-term and long-term effects of *Extralegal Leader* on *Depth*. Moreover, since the ECM relies on first-differences, it accounts better for temporal dependence. Its specification is:

$$\begin{aligned} \Delta Depth_{ij,t} = & \beta_0 + \beta_1 \Delta Extralegal Leader_{i,t} + \beta_2 Extralegal Leader_{i,t-1} + \beta_3 \Delta X_{ij,t} + \beta_4 X_{ij,t-1} \\ & + \beta_5 \Delta Z_{i,t} + \beta_6 Z_{i,t-1} + \beta_7 \Delta W_{j,t} + \beta_8 W_{j,t-1} + \beta_9 Depth_{ij,t-1} + \epsilon_{ij,t}, \end{aligned} \quad (2)$$

where  $\beta_1$  captures the short-term effect and  $\frac{\beta_2}{\beta_9}$  captures the long-term effect (De Boef and Keele 2008). Since our first differences are at the dyadic level, we are able to include country  $i$  fixed effects, the coefficients of which turn out to be statistically significant.

## Empirical Results

Table 1 presents the baseline and extended models. *Extralegal Leader* is always positive and statistically significant at the conventional level across all models. Specifically, extralegal leaders are more likely to sign PTAs of any type. Moreover, extralegal leaders are more likely to form deeper PTAs. In other words, extralegal leaders have both an effect on the extensive (i.e. signing any type of PTAs) and intensive (i.e. signing comprehensive PTAs) margins. Our main explanatory variable remains statistically significant when we include dummies for the type of autocracy. Thus, *Extralegal Leader* does not proxy for institutional features of dictatorship. Taken together, these results confirm our main hypothesis: how dictators enter into power affects their decisions to commit to deeper preferential liberalization as well as stringent enforcement mechanisms. The control variables, which are statistically significant, usually have the expected sign in line with previous studies. Since the results for the control variables are similar in all the estimations, we omit them from subsequent tables.

Next, we turn our attention to the magnitude of our results. First, extralegal leaders are up to 14 percent more likely to form PTAs than legal leaders are. Moreover, we find that extralegal



leaders, *ceteris paribus*, form PTAs that are (up to) 26 percent deeper than PTAs signed by legal leaders. Thus, not only is our treatment statistically significant across all models, but its impact is quite substantial. Furthermore, we note that extralegal leaders formed 83 PTAs, which account for 27% of the total number of PTAs signed by autocracies according to Desta (Dür, Baccini, and Elsig 2014). Some of these PTAs involve several countries and cover a healthy amount of trade flows. Thus, although democracies tend to sign more PTAs than autocracies and extralegal leaders are less likely to sign PTAs than legal leaders, our study still explains the formation of an important number of PTAs signed after World War II.

Let us now explore the timing of PTA formation. Our argument predicts that extralegal leaders have incentives to form deep PTAs only at the beginning of their tenure when their grip on power is shaky. As leaders consolidate their rule, incentives to form PTAs in general, and deep PTAs in particular, should fade away. Table 2 reports two model specifications that test this proposition by exploring the timing of PTAs. The first two models show the interaction between *Extralegal Leader* and *Tenure* with respectively *PTA* and *Depth* as outcome variables (Models 5 and 6). The coefficient of the interaction term is negative, as expected. Figure 3 shows that *Extralegal Leader* are more likely to form PTAs including deep commitments when their tenure is less than 15 years. After (roughly) 15 years, this effect is not statistically significant and actually becomes negative.<sup>6</sup> This result validates the logic of our theory.

A 15-year window might seem a long period, given that authoritarian leaders only require a few years to secure their power. This relatively long window might be explained by the fact that informal and formal negotiations to sign PTAs last several years. Therefore, PTA signature might only materialize relatively late when leaders have already consolidated their hold on office. More importantly, we note that trade agreements tend to empower exporters and to weaken import-competing industries (Ornelas 2005a). As a result, trade liberalization becomes easier after a country is a member of several PTAs.<sup>7</sup> This might explain why extralegal leaders keep signing trade agreements even after their power is relatively secured. Incidentally,

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<sup>6</sup>The results are similar if we use a logarithmic transformation of *Tenure*.

<sup>7</sup>For a formal model on the “rent destruction” effect of trade agreements, see (Ornelas 2005b).

we note that the 15-year window is roughly in line with Figure 2's length of coup risk difference between extralegal and legal leaders.

Finally, the results for our second model specification, i.e. the ECM, are reported in Table 2 (Model 7). In line with our theory, *Extralegal Leader* is positive and statistically significant only in the short term, which is captured by the first difference of *Extralegal Leader*, i.e.  $\Delta$ *Extralegal Leader*. Conversely, the long-term effect is not statistically significant and it remains positive only for *Depth*. The long-term effect is given by the ratio between *Extralegal Leader (lagged)* and *PTA Depth (lagged)*, and the standard error of the long-term multiplier is estimated using Bewley's transformation (Bewley 1979). In sum, our results indicate that extralegal leaders are more likely to form PTAs with deeper commitments than legal leaders. However, this effect is only significant in the short term.

Table 1, Table 2, and Figure 3 about here

## Exploring the Mechanisms

Our main results show a significant and substantive effect of *Extralegal Leader* on the probability of forming PTAs in general, and deep PTAs in particular. Below we explore the main mechanisms highlighted by our theory to further corroborate our findings.

### Coup, Extralegal Leader, and PTAs

The most important test concerns the mechanism linking mode of entry and the probability of facing a coup. Specifically, our argument is that extralegal leaders face a higher probability of coup than legal leaders because extralegal leaders are regime outsiders and are less credible. However, not all countries have the same structural risk of coups (Belkin and Schofer 2003). Thus, we expect that the probability that extralegal leaders form deep PTAs increases with their coup risk.

To test this mechanism we interact *Extralegal Leaders* with a variable capturing the probability of a coup. This variable, labeled *Coup Risk*, is built by Belkin and Schofer (2003) and its coverage is between 1960 and 2000. Simply put, *Coup Risk* is the predicted values of a probit model estimating the probability that each country  $i$  experiences a coup. On the right hand-side Belkin and Schofer (2003) use a number of indicators such as the ratio of paramilitary to military, the size of the military, previous number of attempted coups, and etc.<sup>8</sup> The correlation between *Extralegal Leaders* and *Coup Risk* is 0.2.

Results are reported in Table 2 (Model 8). The sign of the interaction term is positive and statistically significant as expected. To ease the interpretation of the interaction term, we plot the marginal effect of *Extralegal Leaders* on the probability of forming deep PTAs for different values of *Coup Risk*. Figure 4 shows that extralegal leaders are more likely to form deep PTAs than legal leaders only for large values of *Coup Risk*. Specifically, the interaction term becomes significant in the upper quartile of *Coup Risk*. This is a central result of our paper: incentives for extralegal leaders to form deep PTAs are a function of the risk of facing a coup.

Figure 4 about here

### **Exporters, Extralegal Leader, and PTAs**

Another claim of our theory is that extralegal leaders form deep PTAs to obtain the support of exporters. Here, extralegal leaders as regime outsiders must rely on deep PTAs to sufficiently compensate elites in order to gain their support. Incentives to rely on exporters to stay in power should be particularly high when countries are open to trade and have a sizeable exporting sector. In particular, we expect that the probability of extralegal leaders to form deep PTAs increases as countries become more open to trade. Following the convention in the literature, we use  $\frac{Trade}{GDP}$  to capture trade openness. We then interact *Trade Openness* with *Extralegal leaders*. The correlation between *Trade Openness* and *Extralegal leaders* is -0.1.

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<sup>8</sup>For related studies, see (Böhmeit and Pilster 2015; Brown, Fariss, and McMahon 2016).

Results are reported in Table 2 (Model 9). The sign of the interaction term is positive and statistically significant as expected. To facilitate the interpretation of the interaction term we rely again on a graph. Figure 5 shows that extralegal leaders are more likely to form deep PTAs than legal leaders only for large values of *Trade Openness*. Specifically, the interaction term becomes significant in the upper quartile of *Trade Openness*. This test shows that there is a link between the economic structure of a country and extralegal leaders' incentives to form deep PTAs in order to gain the support of the export constituency.

Figure 5 about here

### **PTAs as a Commitment Device**

An important claim of our theory is that PTAs act as a commitment device. Given the distrust faced by extralegal leaders, PTAs are a credible commitment if and only if relevant actors (e.g. exporters and trade partners) perceive that the agreements can be enforced and constrain extralegal leader behaviour. Absent enforcement devices, extralegal leaders would hardly obtain the support of exporters to remain in power. While providing a precise analysis of the credible commitment argument is empirically quite challenging, we perform a series of tests that all point in the same direction: extralegal leaders tend to form enforceable PTAs.

First, we use a third dependent variable capturing another dimension of the PTA design, which is closely related to our argument about credible commitment: enforcement. The justification for looking at this outcome variable is that if extralegal leaders defect from agreements with strong enforcement mechanisms, they face reputation costs and other forms of sanctions. The reputation and financial costs make reneging on the agreement costly for extralegal leaders (Allee and Elsig 2015; Baccini and Urpelainen 2014). Moreover, the external costs imposed by agreements with strong provisions also enable extralegal leaders to provide a costly signal to their elite supporters. In short, enforcement provisions should mitigate the lack of credibility faced by extralegal leaders both domestically (*vis-à-vis* exporters) and internationally (*vis-à-vis* trade partners).

To operationalize enforcement we rely on an index measuring the strength of dispute settlement mechanisms for all PTAs in our sample. The index is based on six components: 1) the extent to which dispute settlement authority is delegated to a third-party, legal body; 2) the ability of a complainant state to choose the dispute settlement venue; 3) the method by which the chairman of any judicial panel is selected; 4) whether the DSM in a given treaty specifies any time limits for the dispute settlement process; 5) the extent to which post-award sanctions can be used to effectively implement awards; 6) whether the dispute settlement provision applies broadly to all areas covered by the agreement or only to some areas. These six components are standardized on a 0-1 scale, resulting in an indicator ranging from 0-6.<sup>9</sup> Data come from Allee and Elsig (2015). We label our first variable *Enforcement*.<sup>10</sup> Results in Table 3 (Models 10 and 11) indicate that extralegal leaders are more likely to form PTAs with stricter enforcement mechanisms than legal leaders.

Table 3 about here

Second, we show that extralegal leaders strategically pick trade partners that maximize the probability of enforcing PTAs. We offer three pieces of evidence. First, extralegal leaders are less likely to form PTAs with other extralegal leaders (Table 3, Model 12). If extralegal leaders lack credibility in the eyes of domestic constituencies, forming PTAs with other extralegal leaders would undermine their effort to use trade agreements as a commitment device. Second, we find that extralegal leaders are more likely to form PTAs with democracies than with autocracies (Table 3, Model 13). This result is in line with the argument and the empirical evidence that democracies tend to enforce international treaties more than autocracies do (Leeds 1999). Thus, incentives to cooperate with democratic regimes are high for extralegal leaders who are in need to credible commitments.

Third, we find that extralegal leaders are more likely to form PTAs with North countries than with South countries (Models 14 and 15). There are two explanations for this finding. Since

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<sup>9</sup>See Allee and Elsig (2015) for details on the operationalization of this dependent variable.

<sup>10</sup>The kernel density distribution in the appendix (Figure A5) shows that there is a lot of variation among PTAs also with respect to the enforcement dimension.

North countries are more likely to enforce PTAs than South countries due to power asymmetry and monitoring capacity (Baccini and Urpelainen 2014), this result confirms that extralegal leaders make an effort to form enforceable agreements. In addition, since our theory claims that extralegal leaders use PTAs to gain market access in foreign markets, we expect that such leaders form North-South PTAs more than South-South PTAs. North-South PTAs arise in a comparative advantage setting in which firms in southern countries are more competitive in the production of labor-abundant products than firms in northern countries. If this is the case, trade liberalization with northern countries should remunerate both capital owners and workers in export-oriented labor-abundant sectors (Kono 2008).

Finally, we assess whether PTAs formed by extralegal leaders increase trade flows. Increasing trade flows would provide evidence that PTAs are not only signed but also enforced. In other words, it would show that PTAs are *de facto* and not only *de jure* devices to lock in trade liberalization. Given the emphasis of our model on the credible commitment argument, this constitutes an important piece of evidence. We run a standard gravity model with (the log of) exports between country  $i$  and  $j$  as the dependent variable. *PTA*, *Depth*, and *Enforcement* are the main explanatory variables. Moreover, we include export-year, import-year, and dyad fixed effects as this is becoming state-of-the-art in this literature. Thus, we are unable to control for any time-varying and time-invariant monadic variables and for any time-invariant dyadic variables. However, we do include a dummy for joint membership of GATT/WTO. In running the gravity model, we limit the sample to extralegal leaders, since our theory is agnostic about PTAs signed by legal leaders. We find that exports increase significantly after the formation of PTAs, deep PTAs, and PTAs with strict enforcement mechanisms (see Table 4). In sum, this test provides evidence that PTAs help extralegal leaders to increase exports, remunerating export-oriented constituencies.

Table 4 about here

## Robustness Checks

We implement many robustness checks to further validate our findings. Here, we discuss the key findings, whereas we report tables and the details of the analyses in the online appendix. First, we implement a placebo test to rule out the competing hypothesis that extralegal leaders sign international treaties to boost their international reputations. We do not find evidence that extralegal leaders are more likely to sign human rights treaties (see Table A2, Model A1). Second, we show that our main results hold even if we use year of negotiation instead of year of signature (see Table A2, Model A2). Third, we re-run our main model including a variable capturing oil rents to better control for rentier states. The data on oil rents are from the WDI (2012). Our main results still hold and Oil Rents is not statistically significant (see Table A2, Model A3). Fourth, we run OLS regressions with country and dyad fixed effects. Even in this case, our main results are unchanged (see Models A4 and A5 in Table A2). However, *Extralegal Leader* has limited within-country variation once we include country fixed effects.

Finally, signing a PTA is a decision by (at least) two countries. Therefore, the dyad-year unit of analysis appears to be the right decision to control for important dyadic variables, e.g. distance. However, a skeptical reader might argue that we are inflating the outcome variable in the case of plurilateral PTAs. To address this concern, we replicate our analysis at the (authoritarian) country-year level. The results are shown in Table A3 in the online appendix. Here, it is enough to say that our main results are unchanged, though *Extralegal leader* loses significance in Model A6. Our dyadic results show that extralegal leaders are very careful in choosing their trade partners, e.g. forming deep PTAs with democratic countries and North countries. Thus, it makes sense that the monadic analysis produces somewhat weaker results than the dyadic analysis since, with the former, we are unable to account for trade partner characteristics.

## Conclusion

While some scholars have recently shown interest in the international political economy of autocracies (Hankla and Kuthy 2013; Milner and Kubota 2005), we still lack knowledge on why autocracies institutionalize trade. Our paper has put forward a simple theory to answer this question: extralegal leader changes induce autocrats to institutionalize preferential trade liberalization as a means of securing power. This mechanism, supported by empirical evidence, helps explain why some dictators are more liberal than others.

These results have three important implications. First, our finding on the relationship between extralegal leader transitions and preferential trade agreements could shed light on when autocrats are most vulnerable to pressure. Extralegal entries thus have implications for policy-makers seeking to change the behavior of autocrats. Our results suggest that the international community can promote democratization efforts by engaging with autocrats in PTAs, which vulnerable autocrats are motivated to enter into even if such agreements will increase the likelihood of competitive politics emerging in the long run.

Second, our results have implications for a broader set of political-economic outcomes. While we focus on PTAs, our argument could be extended to a number of other policy domains, such as macroeconomic management and compliance. For example, our theory suggests that extralegal leaders should be more inclined to support a fixed exchange rate system, which is preferred by export sectors.

Third, our argument and empirical findings touch on a plethora of recent studies concerning the political economy of authoritarian countries. Many of these papers highlight the importance of coup susceptibility for economic performance (Besley and Kudamatsu 2008), military intervention (Svolik 2013), and economic transparency to the public (Hollyer, Rosendorff, and Vreeland Forthcoming) in autocracies. Our findings suggest that autocratic leader vulnerability to coups, like democratic leader vulnerability to elections, may also potentially generate good policies.



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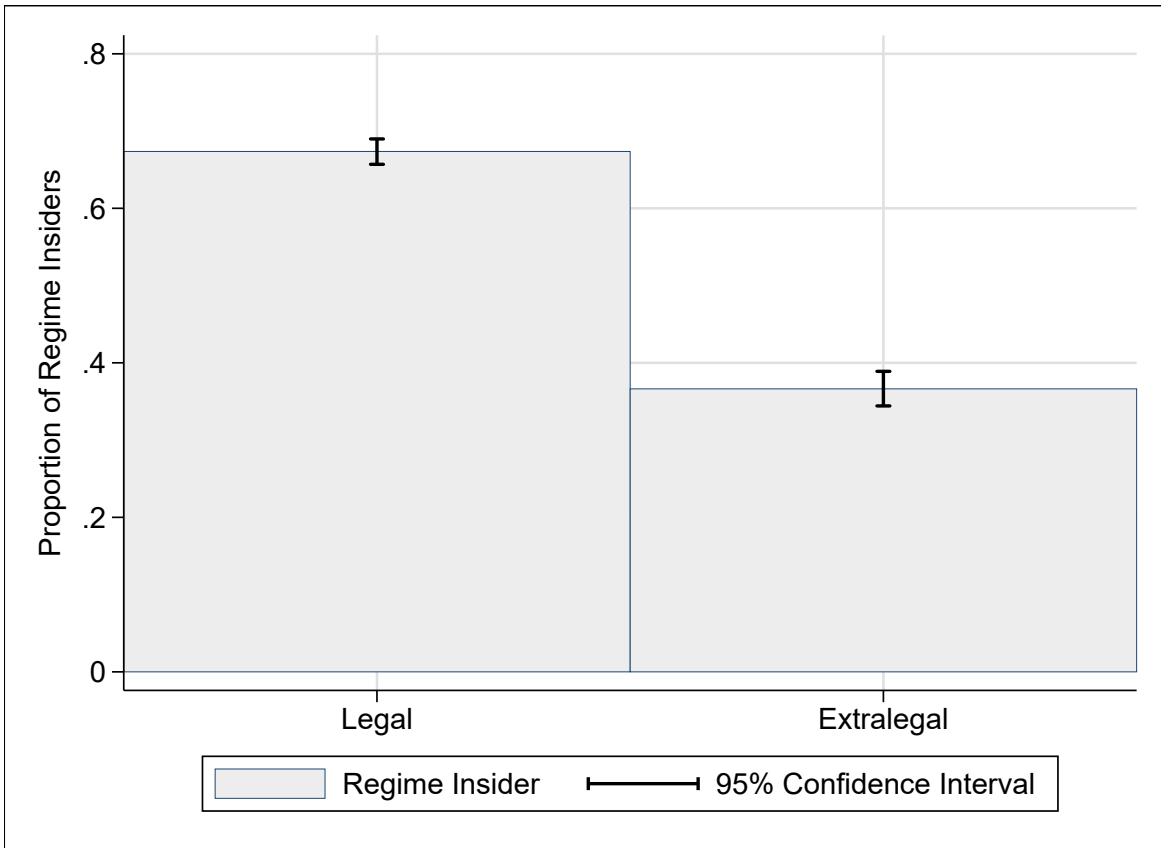
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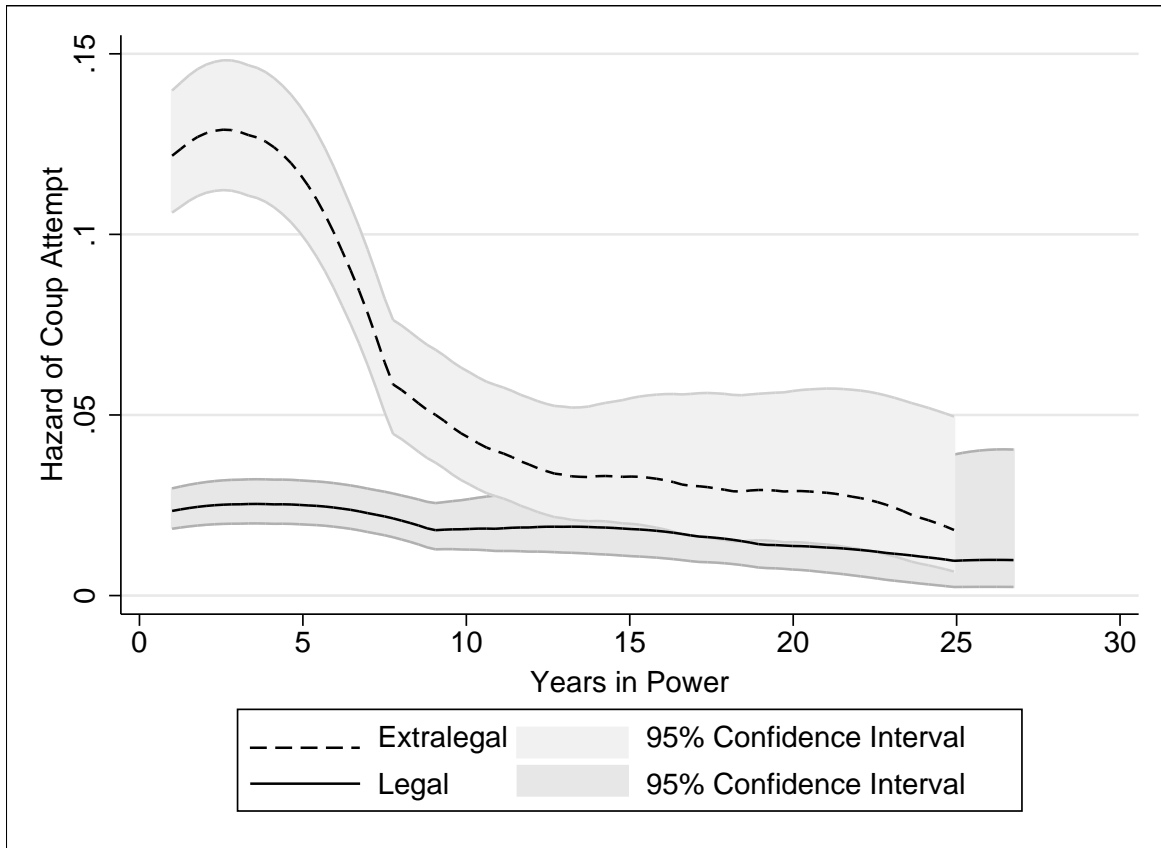
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Figure 1: Legal leader vs. extralegal leader: affiliation with the previous regime



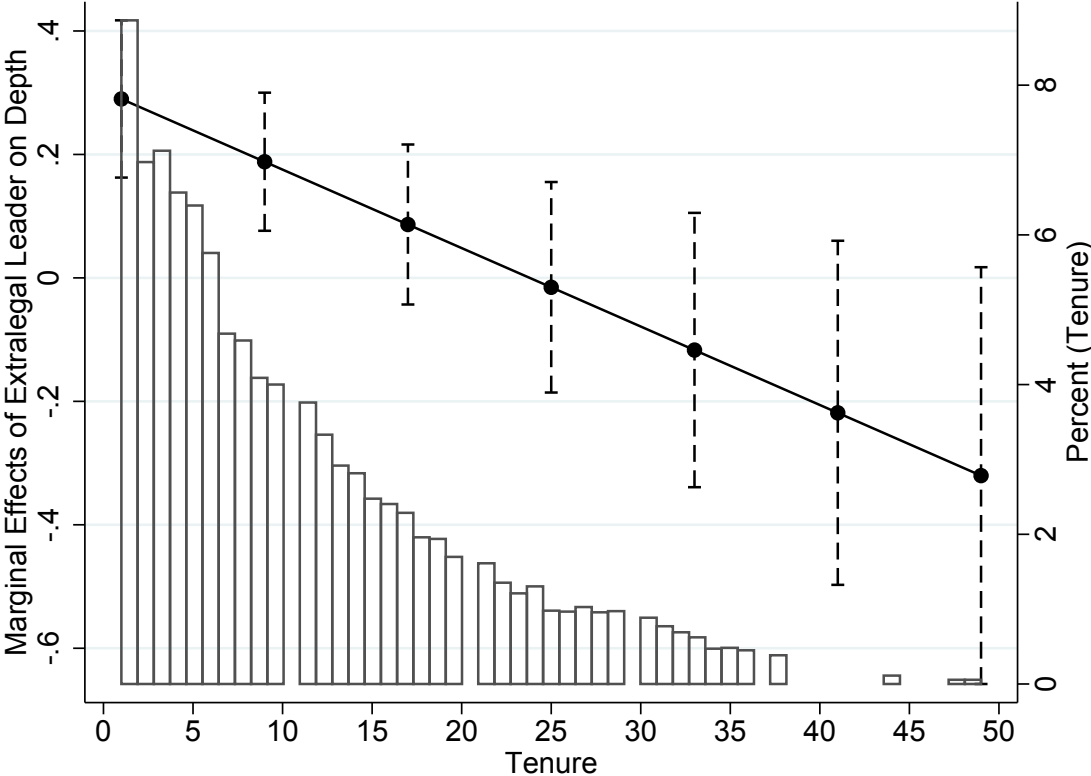
Note: Data on affiliation with the previous regime come from Svobik (2012). Sample: 120 autocracies, 1948-2010.

Figure 2: Legal leader vs. extralegal leader: hazard of coup attempts



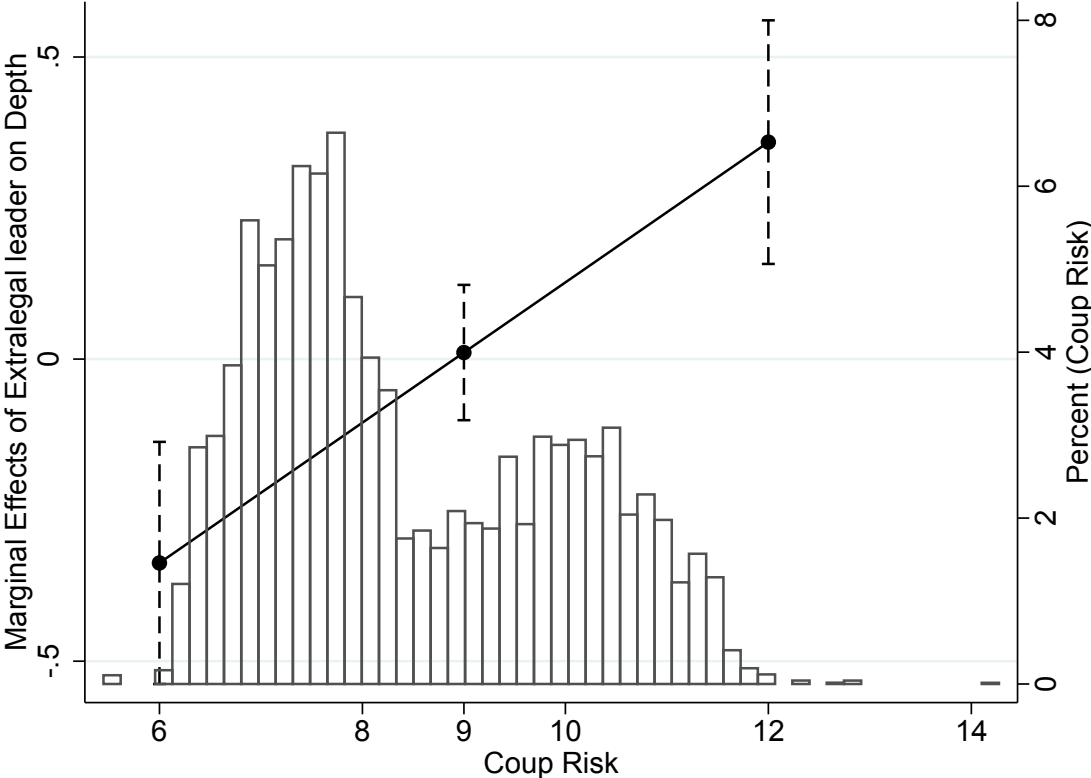
Note: Data on coups come from Powell (2012). Sample: 120 autocracies, 1948-2010.

Figure 3: PTA Depth: marginal effect of extralegal leader conditional on years in power(Tenure).



Note: Data on tenure come from Goemans, Gleditsch, and Chiozza (2009). Sample: 120 autocracies, 1948-2010.

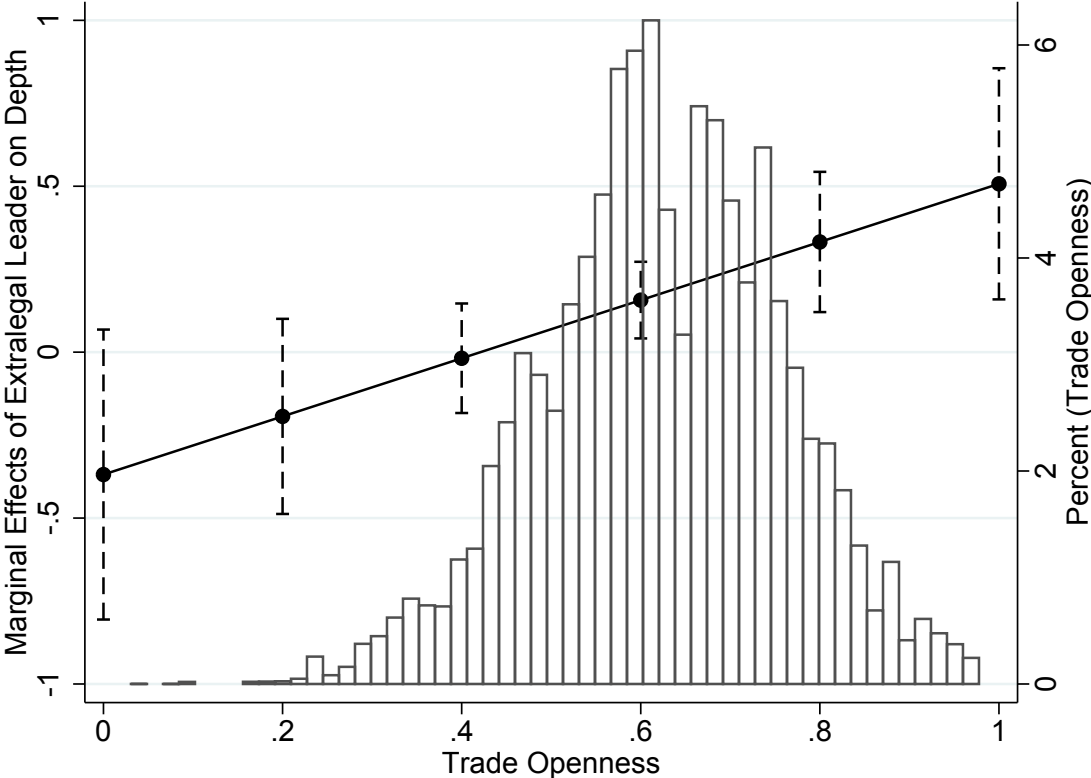
Figure 4: PTA Depth: marginal effect of extralegal leader conditional on hazard of coup attempts (Coup proof).



Note: Data on coups come from Powell (2012). Sample: 120 autocracies, 1960-2000.



Figure 5: PTA Depth: marginal effect of extralegal leader conditional on trade openness (Trade openness).



Note: Data on trade openness come from the WDI – GDP – and DOTS (2010) and Gleditsch (2002) – trade. Sample: 120 autocracies, 1948-2010.

Table 1: Main results.

VARIABLES	(1)	(2)	(3)	(4)
	Pr(PTA=1) Cox Model	Pr(PTA=1) Cox Model	Depth Tobit Model	Depth Tobit Model
<b>Extralegal leader</b>	<b>0.138***</b> <b>(0.033)</b>	<b>0.082**</b> <b>(0.037)</b>	<b>0.261***</b> <b>(0.068)</b>	<b>0.168**</b> <b>(0.069)</b>
ln(Distance)	-0.654*** (0.017)	-0.601*** (0.020)	-1.253*** (0.036)	-1.363*** (0.045)
ln(Export)	0.102*** (0.011)	0.115*** (0.012)	0.257*** (0.019)	0.292*** (0.021)
ln(GDP) - country A	-0.152*** (0.011)	-0.012 (0.016)	-0.517*** (0.022)	-0.325*** (0.032)
ln(GDP) - country B	0.078*** (0.008)	0.055*** (0.012)	0.273*** (0.018)	-0.020 (0.024)
GATT/TO		0.504*** (0.034)		0.972*** (0.066)
ln(GDPpc) - country A		-0.245*** (0.020)		-0.435*** (0.049)
ln(GDPpc) - country B		0.009 (0.015)		0.302*** (0.030)
ln(GDP Growth) - country A		-0.017*** (0.002)		-0.001 (0.002)
ln(GDP Growth) - country B		-0.018*** (0.002)		-0.009*** (0.002)
Conflict		-0.430 (0.355)		0.653 (0.452)
Regime - country A		-0.052*** (0.004)		
Regime - country B		-0.010*** (0.002)		0.055*** (0.005)
Party regime - country A		0.273*** (0.035)		1.140*** (0.156)
Military regime - country A		-0.115** (0.046)		0.735*** (0.171)
Personalistic regime - country A				0.745*** (0.161)
Constant			13.136*** (0.639)	15.877*** (0.775)
Sigma			2.246*** (0.029)	1.874*** (0.029)
Year fixed effects	NO	NO	YES	YES
Observations	347,310	231,300	347,310	231,504
R-squared				
Pseudo R-squared			0.171	0.245

Robust standard errors in parentheses \*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1

Table 2: Short-term vs. long-term effect and mechanisms.

VARIABLES	(5) Pr(PTA=1) Cox Model	(6) Depth Tobit Model	(7) Depth ECM	(8) Depth Tobit Model	(9) Depth Tobit Model
Extralegal leader	0.210*** (0.049)	<b>0.303***</b> <b>(0.080)</b>	0.0003 (0.000)	-1.034*** (0.311)	-0.369 (0.266)
ΔExtralegal leader			<b>0.006***</b> <b>(0.002)</b>		
Coup Proof				-0.065** (0.026)	
Extralegal leader*Coup Proof				<b>0.116***</b> <b>(0.034)</b>	
Tenure	0.003* (0.002)	0.013*** (0.003)			
Extralegal leader*Tenure	<b>-0.007*</b> <b>(0.004)</b>	<b>-0.013***</b> <b>(0.005)</b>			
Trade openness					-1.579*** (0.487)
Extralegal leader*Trade openness					<b>0.876*</b> <b>(0.457)</b>
Depth (lagged)			-0.003*** (0.001)		
Long-term multiplier			<b>0.083</b> <b>(0.157)</b>		
Constant		15.727*** (0.783)	0.075*** (0.005)	17.334*** (0.919)	15.496*** (0.806)
Sigma		1.870*** (0.029)		1.725*** (0.029)	1.872*** (0.029)
Observations	347,310	231,504	218,488	177,362	231,504
Full Model	NO	YES	YES	YES	YES
Year fixed effects	YES	YES	NO	YES	YES
R-squared			0.008		
Pseudo R-squared		0.246		0.268	0.246

Robust standard errors in parentheses \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 3: PTAs as a Commitment Device.

VARIABLES	(10)	(11)	(12)	(13)	(14)	(15)
	Enforcement Tobit Model	Enforcement Tobit Model	Depth Tobit Model	Depth Tobit Model	Depth Tobit Model -- NS PTAs	Depth Tobit Model -- SS PTAs
Extralegal leader	<b>0.544***</b> (0.062)	<b>0.308***</b> (0.068)		-0.012 (0.080)	<b>0.283***</b> (0.031)	<b>-0.208***</b> (0.020)
Both extralegal leader			<b>-0.470***</b> (0.119)			
Regime - country B				0.045*** (0.005)		
Extralegal leader*Regime - country B				<b>0.041***</b> (0.010)		
Constant	13.170*** (0.610)	10.530*** (0.706)	16.034*** (0.774)	15.967*** (0.775)	-11.450*** (0.047)	-1.011*** (0.029)
Sigma	2.830*** (0.027)	2.491*** (0.028)	1.873*** (0.029)	1.870*** (0.029)	2.302*** (0.018)	1.964*** (0.011)
Observations	347,310	231,504	231,504	231,504	231,504	231,504
Pseudo R-squared	0.116	0.166	0.246	0.246	0.500	0.323
Full Model	NO	YES	YES	YES	YES	YES
Year fixed effects	YES	YES	YES	YES	YES	YES

Robust standard errors in parentheses \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 4: Gravity model.

VARIABLES	(16) ln(Exports) OLS	(17) ln(Exports) OLS	(18) ln(Exports) OLS
<b>PTA</b>	<b>0.227***</b> <b>(0.013)</b>		
<b>Depth</b>		<b>0.091***</b> <b>(0.014)</b>	
<b>Enforcement</b>			<b>0.065***</b> <b>(0.006)</b>
GATT/WTO	0.021* (0.016)	0.028* (0.016)	0.028* (0.016)
Country A-year fixed effects	YES	YES	YES
Country B-year effects	YES	YES	YES
Dyad effects	YES	YES	YES
Observations	119,851	119,851	119,851
R-squared	0.848	0.847	0.848
rmse	0.578	0.579	0.579

Standard errors in parentheses \*\*\* p<0.01, \*\* p<0.05, \* p<0.1