

COOPERATIVE AUTOCRACIES:  
LEADER SURVIVAL, CREDITWORTHINESS AND  
BILATERAL INVESTMENT TREATIES\*

Eric Arias<sup>†</sup>      James R. Hollyer<sup>‡</sup>      B. Peter Rosendorff<sup>§</sup>

First draft: August 21, 2014

This version: May 14, 2016

**Abstract**

The accumulation of capital is essential for economic development, but investors face risk when committing their capital to productive use. Bilateral Investment Treaties (BITs) help developing country leaders commit to limit their expropriation. Democratic states with functional domestic courts, strong reputations and transparency in policymaking all make commitments to protect foreign investment more credible. Autocratic countries, where the domestic rule of law, or the independence of the courts cannot be relied upon suffer from a weak reputation for protection of foreign investment. It is these countries and leaders that have the most to gain from signing BITs. Survival models show that BITs enhance leader survival by more in autocracies relative to democracies, and that institutionalized autocratic leaders have less to gain in terms of survival from BITs signing than do personalistic dictators. Using credit-worthiness scores and event-studies, we also show that BIT signing improves leader survival via improving the domestic investment climate.

---

\*Thanks to Lex Peel for research assistance and Leonardo Baccini for sharing his data. Thanks to participants at APSA, IPES, PEIO, and at workshops at New York University and University of Mannheim for comments and suggestions.

<sup>†</sup>Department of Politics, New York University. eric.arias@nyu.edu

<sup>‡</sup>Department of Political Science, University of Minnesota. jhollyer@umn.edu

<sup>§</sup>Department of Politics, New York University. peter.rosendorff@nyu.edu (Corresponding Author)

Although much is known about the determinants of international economic agreements, the fact that nondemocracies are more cooperative than democracies in the international investment regime remains a puzzle. For instance, up until 2010, autocrats have been, on average, the target of less than 1 investment treaty claims, while democracies averaged almost 3 arbitrations. Countries like Qatar, Swaziland or Belarus have never been taken to court, while countries like India, Mexico, and Canada have been the target of arbitration 9, 19 and 15 times respectively. Similarly, while the international investment regime has become a controversial issue –including withdrawals from the investment regime’s central tribunal or revision of treaties– with diverse countries such as Brazil and Australia voicing their concerns ([Pelc 2016](#)), autocracies have been largely absent from these controversies. These facts highlight the notion that autocratic leaders commit to the economic policies attached to the international investment regime more happily than their counterparts in democratic countries. Indeed, this pattern goes against the conventional wisdom that democracies are the regimes more cooperative in the international arena ([Mansfield, Milner, and Rosendorff 2002](#), [Martin 2000](#)).

In this paper, we investigate the political economy of international investment agreements and explain why and how Bilateral Investment Treaties (BITs) benefit autocratic leaders to a greater degree than they do democratic ones. We begin with the premise that the accumulation of capital is essential for economic development, but investors face risk when committing their capital to productive use. Fixed capital is susceptible to expropriation, and income and profit run the chance of excessive or punitive taxation by rapacious governments, eager to bolster private bank accounts, fiscal revenue or campaign funds. Investors (especially international investors) are less likely to commit their capital to a host country in the absence of reliable and predictable protections against expropriation. While in many countries (mainly democracies) the presence of several institutions – e.g., domestic courts, strong reputations and transparency in policymaking– all make commitments to protect foreign investment credible, in many others where these institutions are absent or simply cannot be relied upon (more often autocracies) the regime suffers from a weak reputation for the protection of foreign investment.

Nonetheless, many autocratic regimes have been extremely successful in attracting large amounts

of foreign investments. Over the last 25 years, FDI net inflows/GDP has averaged 4.07% in autocracies and 4.08% in democracies. We investigate why (and how) autocratic regimes commit themselves to limit their expropriation –and hence attract investment– grounding the explanation in domestic politics. Bilateral Investment Treaties (BITs) enhance foreign direct investment directly, and the investment climate more generally, which lengthens autocratic leader survival.

BITs credibly commit host governments to minimizing arbitrary and capricious policy shifts, punitive tax rates, and outright expropriation, as well as provide clear limits on policy-choices, and predictable procedures for policy changes. Not only do rules governing property rights and tax treatment get adopted, but violations of those rules have consequences at the international level - enhancing the credibility of the government to limit discretionary and arbitrary changes in policy, and thereby improving the investment climate

BITs are legal instruments signed between states that take on the force of international law, and govern the rights and obligations of states that host foreign capital within their jurisdictions. In ratifying a BIT, a state incorporates the terms of the treaty as part of its legal system ([Salacuse and Sullivan 2005](#)). To varying degrees, BITs provide a compelling mechanism to credibly import a set of institutions that commit a state not to expropriate, over-regulate, over-tax, or otherwise excessively interfere in the market, and endangers the signatories with “swift, substantial compensation” in the instance of violation.

BITs, therefore, can be effective in attracting investment into states that otherwise are unable to commit to restrain the “grabbing hand.”<sup>1</sup> The increased availability of investment and an improved investment climate has, we argue, a greater impact on leaders whose survival depends on a smaller coalition of support – autocratic leaders. We argue that it is these countries and leaders that have the most to gain from signing BITs. As such, we argue here that the benefit of signing BITs is accrued to a greater degree by autocratic leaders.

We present a formal model of the interaction between a leader and a foreign firm. The leader is motivated by a desire for survival in office and trades off electoral gains from protecting investment

---

<sup>1</sup>Many states find it difficult, if not impossible, to build and maintain reputations and institutions and to entrench crucial institutions in the fabric of the polity and the economy. Barriers to the formation and entrenchment may be political or historical in origin. See, for example, [Acemoglu, Johnson, and Robinson \(2001\)](#) or [Fernandez and Rodrik \(1991\)](#).

with losses in the rents foregone associated with capital taxation/expropriation. More investment leads to more employment and domestic economic activity which has electoral benefits which accrue to the leader in office. But more investment also inspires more extraction and expropriation. As the risk of expropriation rises, foreign firms are less inclined to invest absent improved property rights protections. The investment climate is improved when a polity with poor property rights protections signs a BIT; the effect of BITs on the investment climate is much more modest in polities with stronger domestic property rights regimes. Consequently, the probability of leadership survival increases in BITs signing, but that this benefit is greater for autocratic leaders, and this operates via improvements in the investment climate.

We extend this logic to explore the variations in the effects of BIT signing on leader survival within autocracies. Autocracies vary in their institutional environment and the sources of political support. Monarchies rely on narrow family networks; military leaders on (broader) military juntas; and civilian dictators on larger sets of elites. Those autocrats with larger bases of support generally have better institutions and property rights protections, and hence will see smaller gains from BIT signings; those autocrats that rely on narrow inner-circles for survival (and have poorer domestic property rights protections) are the least credible and experience the greatest benefit from BITs in terms of survival.

We offer a number of empirical tests of the model predictions. We find substantial empirical evidence that BITs enhance leader survival, and by more in autocracies than democracies and by more in personalistic rather than populist autocracies. We also show that the effect is via improvements in the investment climate. BITs are shown to improve creditworthiness (using a variety of subjective and behavioral measures) as well as to increase bond prices (explored with daily prices in an event study analysis), but only in autocratic regimes.

Broadly, this article contributes to at least two types of literatures. First, it adds to the scholarly work on the political economy of BITs and investment (e.g., [Milner 2014](#), [Elkins, Guzman, and Simmons 2006](#), [Tobin and Busch 2010](#)). The question of what explains the pattern of accession to BITs has engaged scholars since the emergence of BITs as a central force in the international legal environment governing transborder capital flows, and a variety of explanations have emerged. Our

paper highlights an explanation that is grounded in domestic politics, particularly on how BITs mainly benefit autocratic leaders. Second, it contributes to the more general literature that investigates the drivers of international political economy more broadly. In particular, why do countries sign international agreements, and how do these international institutions shape domestic politics? While many approaches focus on the international level – international treaties are focal points for coordinating the behavior of states in environments where there are gains from cooperation—following much recent work (e.g., [Baccini and Urpelainen 2014, 2015](#), [Mansfield and Milner 2012](#), [Mansfield, Milner, and Rosendorff 2000, 2002](#)), we focus here on the how international agreements are signed by leaders to help solve domestic political problems. By so doing, we join the burgeoning literature that seeks to understand how these international agreements are fundamentally determined by the political problems faced by leaders at home, and critically, have substantive domestic implications ([Smith and Vreeland 2006](#), [Hollyer and Rosendorff 2011, 2012a](#)).

## 1 Theoretical Motivation

Following [North and Weingast \(1989\)](#), the central dilemma for any leader is to credibly commit to limiting the coercive power of the state. The incentive to extract resources from investors, or to renege on commitments to repay loans may be large, especially when there are no penalties for doing so. Weak institutions, such as low party institutionalization or absence of multiple candidates in single-party legislative elections, fail to provide the venues to check the power of the leader ([Gehlbach and Keefer 2011, 2012](#)) or other insider actors ([Jensen, Malesky, and Weymouth 2014](#)), hence discouraging investment.<sup>2</sup> Moreover, institutional structures that fail to adequately reign in the extractive power of the state have a tendency to continue to survive, making internal institutional change of the type [North and Weingast \(1989\)](#) describe, difficult or unlikely ([Acemoglu, Johnson, and Robinson 2001](#)). Leaders however, often have more autonomy or discretion when it comes to international agreements. International agreements often incorporate, build or establish a set of rules, norms and behaviors that are considered acceptable, and those that are considered

---

<sup>2</sup>In contrast, strong democratic institutions are associated with higher levels of investment ([Jensen 2003](#), [Li and Resnick 2003](#)).

non-compliant. These agreements regulate international interactions – they generate focal points, coordinate expectations, eliminate or reduce incomplete information, offer commitment devices etc. By signing such an international agreement, the leader effectively imports the institutions that can enhance development; these institutions are adopted, having jumped the internal barriers that prevented their emergence domestically.

Bilateral investment treaties (BITs) are legal instruments signed between states that take on the force of international law, and govern the rights and obligations of states that host foreign capital within their jurisdictions. To varying degrees, BITs provide a compelling mechanism to credibly import a set of institutions that enhance the credibility of the government to limit discretionary and arbitrary changes in policy, and thereby encourage higher levels of investment .

We take as our premise that leaders choose policy (and policy instruments) in order to enhance their survival in office (Bueno De Mesquita et al. 2004). Leaders also (often) have private incentives to expropriate assets and extract revenue from productive activity; this of course reduces the willingness of domestic and foreign capital owners to invest in the first place, and harms economic growth and development. Survival in office is enhanced by economic development and wealth creation that accrues to the leader’s core supporters. In democracies, leader survival is associated with *aggregate* economic growth and development affecting the wellbeing of large mass of society, and hence institutions emerge within democratic polities that protect private investment and reduce the risk of expropriation.

The more accountable is the policymaker to a broad electorate, and the more the economy relies on foreign capital for the employment of domestic labor (as is the case in most developing countries), the more important is a reputation for protection rather than expropriation of foreign capital. Workers in a capital poor democracy apply electoral pressure to their leaders to encourage foreign capital to invest domestically, thereby increasing their marginal product and hence their wage. The more accountable is the leader to the voters, most of whom are workers in developing states, the greater that political pressure is likely to be to protect foreign capital. Hence democracy (or at least polities with larger “winning coalitions” (Bueno De Mesquita et al. 2004)) reduces the likelihood of unfair “takings” – reassuring capital owners that domestic labor will punish leaders

at election time if they expropriate excessively.<sup>3</sup>

Democratic states are also associated with institutions conducive to a hospitable investment climate, such as a functioning judiciary protecting the rule of law, and a well-behaved, less corrupt and functioning bureaucracy. Therefore, democratic leaders –requiring neither improved reputations nor improved institutional legitimacy– should find the benefits of importing added property rights institutions via a BITs small, if any at all.

Autocratic leaders find an alternative solution to a similar dilemma. The desire for economic performance (that can be used to reward political supporters) runs up against the private benefits of expropriatory takings. Autocrats however, have far fewer domestic institutional constraints that limit the reach of the grabbing hand.<sup>4</sup> The leaders with the most to gain in terms of credibility, and hence a substantially improved investment climate will be those leaders in institution-poor environments, and most in need of importing the institutions associated with a BIT. Autocratic leaders, therefore are more likely to see their survival enhanced by the signing of a BIT.

## 1.1 The Economic and Political Consequences of BITs

Bilateral Investment Treaties enhance a leader’s commitment to protecting property rights of foreign investors. They guarantee a high standard of treatment, offer legal protection under international law, provide access to international dispute resolution, and limit the policy shifts that governments can undertake. BITs offer *precision of obligations* along a variety of dimensions crucial to lowering the transactions costs of foreign investment: they require a well-defined standard of treatment, the free transfer of funds and repatriation of capital and profits, transparency of national laws, equal treatment across investors, compensation for war and other civil disturbances. Most significantly, they offer dispute-settlement provisions that permit both investor and state standing (Simmons 2014). The innovation that has given the BITs their bite is that both investor-state and state-state disputes can be brought before an international tribunal for adjudication. Such bodies include the

---

<sup>3</sup>This is especially true of political elites more accountable to workers or to the owners of capital that is complementary to FDI. See Pinto and Pinto (2008), Pinto (2013). There is one potential caveat: new democracies sometimes have trouble making credible commitments. See Keefer and Vlaicu (2008).

<sup>4</sup>Autocratic leaders might have carte b;ache to create domestic institutions that limit the grabbing hand. Such gambits are rarely credible however, for the power to create rules comes with the power to rewrite them.

World Bank Group's International Center for the Settlement of International Disputes (ICSID), or the International Chamber of Commerce (ICC). The United Nations Commission on International Trade Law (UNCITRAL) has a framework document that can govern arbitrations but does not operate an arbitration institution. The basis in international law for the enforcement of arbitral decisions is provided by the 1958 New York Convention on the Recognition and Enforcement of Foreign Arbitral Awards. Aside from BITs, there are other instruments of international law that have some of these investment-protecting features, such as Trade and Investment Framework Agreements, Investment Guarantee Agreements, protections embedded in Preferential Trade Agreements, Friendship, Navigation and Commerce treaties and others ([UNCTAD 2000](#)).

There is an emerging consensus that FDI is enhanced by the presence of BITs. Early studies suggested BITs had little effect on FDI (e.g. [Vandevelde, Aranda, and Zimmy 1998](#)). [Tobin and Rose-Ackerman \(2005\)](#) confirmed the overall negative finding, studying US FDI flows to developing countries. [Salacuse and Sullivan \(2005\)](#) find that US BITs do increase FDI inflows (subsequently modified by [Haftel \(2010\)](#)); while [Gallagher and Birch \(2006\)](#) find the opposite result. [Büthe and Milner \(2009\)](#) look at non-OECD countries' inflows of FDI as a percentage of GDP, and find a positive correlation with the number of BITs that are signed. Recently, [Jandhyala, Henisz, and Mansfield \(2011\)](#) have a comprehensive study in which they find that BITs do increase FDI when the BIT is between a lesser developed and more developed pair, rather than between two poor or two rich countries. Other papers further assess such correlations and analyze the extent to which they might be causal. Using a two stage instrumental variable approach, [Kerner \(2009\)](#) shows that BITs to enhance FDI flows. [Rosendorff and Shin \(2012\)](#) use an alternative instrument, and also show that BITs do indeed enhance FDI. In a follow-up piece, they show that since it is those polities that are less transparent and less democratic that sign BITs more frequently, they are the ones who experience the largest improvement in FDI flows ([Rosendorff and Shin 2015](#)). As a result, autocratic leaders have more to gain from BITs, as the FDI they attract is largely attributable to them.

If BITs are good for FDI for autocracies, it seems natural to explore whether BITs enhance leader survival in autocracies more than they do in democratic states, and more so, try to better



understand the underlying mechanisms. To precisely do so, next, we present our theory and put it at test below.

## 2 Theory

We consider a game between a home firm that exports capital  $k$  to a host. The firm then employs labor  $l$  in host state and produces  $x$  abroad according to a fixed proportions production function,  $x = x(k, l) = \min\{k, l\}$ . The firm then brings the  $x$  it produced back home, and uses  $x$  as an input into the production of  $y$ . It produces  $y$  at home according to a Cobb-Douglass production function,  $y = \frac{1}{2}(\ln s + \ln x)$  where  $s$  might be thought of as skilled labor or human capital only available at home, specific to the firm and in inelastic supply at price  $\sigma$ . The firm is a price taker, and we assume the world price of  $k$  is given and fixed,  $\kappa$ . That is capital that is exported to the host is employable on world markets at the world price. Labor in the host country is supplied inelastically; units of labor are chosen such that the wage  $w = 1$ . Let the world price of  $y$  be 1.

The host government applies a tax  $t$  on every unit of capital that is employed. We model this in the “iceberg” form. That is for every  $k$  units of capital that is shipped to the host country, only  $(1 - t)k$  are available for production. The firm must still pay the cost  $\kappa$  for each unit of capital it ships.

### 2.1 Profit of firms

Profit for the firm is  $\Pi = \frac{1}{2} \ln s + \frac{1}{2} \ln(\min\{(1 - t)k, l\}) - \kappa k - l - \sigma s$ . Note that the firm must still pay the rental rate on the capital that is taxed away and no longer available for production. The higher is the tax on capital, the less capital is available for production, and therefore the less labor the firm will employ.

### 2.2 Government payoffs

The host country has no other production, and no domestic capital owners. Then given a wage  $w = 1$  and labor employment  $l$ , we define social welfare as  $wl = l$ . The probability of reelection

$P$  is a function of social welfare  $l$ . To keep things simple we let  $P$  be uniformly distributed on  $[0, P]$ . That is  $P(l) = \frac{l}{P}$  for  $l > 0$ . Then  $P'(l) = \frac{1}{P}$ .

Moreover there is some exogenous benefit to holding office,  $R$ ; we can think of this as the present value of the future streams of potential takings of rents.

In addition to the electoral returns from improving social welfare, the host government receives private benefits from taxing capital,  $tk$ . Government utility then is  $G = P(awl)R + tk$ .

This political support function is analogous to government's objectives in similar political economy models of trade and investment in which the government has an incentive to raise revenue or political support from a particular policy action, be it a tariff that protects a domestic industry, and raises revenue, or as in this case, taxing imported capital.<sup>5</sup> This policy choice of course comes at some cost to social welfare or national income - in the trade case, the tariff reduces social welfare in a small open economy, and this has political costs; in the investment case, a higher tax on imported capital reduces the amount of domestic labor employed, and hence reduces social welfare, national income, and the attendant political support.

The national income term is weighted by  $a$ . We assume that  $a$  is private information - the host government knows  $a$ , but home firm does not. We denote the home firm's prior cdf over  $a$  as  $\alpha(\cdot; d)$ , with  $\alpha' > 0$ . High draws of  $a$  mean that the political influence exerted by the social welfare concerns is large relative to the political benefits of tax revenues. The cdf of  $a$  is parameterized by the variable  $d$ , intended to capture the regime type of the country. A country with a higher value of  $d$  is "more democratic" or more "accountable" to social welfare concerns and this implies that on average, the probability that  $a$  is large (a larger weight on social welfare) is higher. We model this by assuming that  $\alpha_d < 0$ .<sup>6</sup> More democratic states mean that the draw of higher value  $a$ 's is more likely than in less democratic states.

---

<sup>5</sup>See, for example [Grossman and Helpman \(1994\)](#), or [Rosendorff \(1996\)](#).

<sup>6</sup>Or more precisely, for  $d' > d$ ,  $\alpha(a; d') \leq \alpha(a; d)$  with strict inequality at some  $a$ . That is, we assume first-order stochastic dominance in  $d$ .

### 2.3 Investor Protection

The general form of investor protection is a “promise” by the host government not to tax the home firm at any rate higher than  $p \in (0, 1)$ . If the host country breaks its promise and applies a tax rate larger than  $p$ , the home firm appeals to the relevant domestic institutions for arbitration. The domestic institutions rule in favor of the investing firm with probability  $\pi \in [0, 1]$ , in which case the host government will be required to, and will, reimburse the home firm for the excess takings. That is, the credibility or the strength of the domestic property rights institutions is captured by  $\pi = \Pr(\text{win}|\text{violation})$ , which is exogenous. If a state behaves arbitrarily and capriciously by raising the tax rate  $t$  above that which is commonly expected or considered appropriate  $p$ , there is some probability  $\pi$  that the domestic institutions will reverse the capricious behavior and enforce a tax rate of  $t$  rather than  $p$ . We assume no problem of enforcement of an institutional finding.<sup>7</sup>

### 2.4 The Game with Investor Protection

The sequence of moves is as follows:

1. Nature reveals the value of  $a$  to the host government. This is private to the host.
2. The home firm chooses  $k$ .
3. The host government chooses  $t$ .
4. If  $t \leq p$ , home firm employs local labor, production occurs and game ends.
5. If  $t > p$ , then foreign, host government is taken to court. Nature determines the outcome of the case with  $\Pr(\text{win}|\text{violation}) = \pi$ . If plaintiff wins, the tax rate reverts to  $p$ ; if not, the tax rate that is applied is  $t$ . The home firm then employs local labor  $l$ , production occurs and game ends.

---

<sup>7</sup>Alternatively may consider  $\pi$  as the combined probability of both violation finding, and compliance by the host state with the ruling.

## 2.5 Firm's investment decision

Notice that the firm makes its investment decision (how much capital and labor to employ in the host country) before it knows what the government is going to do, with respect to the tax rate. Assume for the moment that the firm knows what the tax rate  $t$  will be, and takes that as given. From standard microeconomic principles, the firm's cost function is  $C(\kappa, x) = x \left( \frac{\kappa}{(1-t)} + 1 \right)$ . Then the contingent demand for capital and labor in this fixed proportions production function is, by Shepard's lemma,

$$\begin{aligned}\tilde{k} &= \frac{x}{(1-t)} \\ \tilde{l} &= x\end{aligned}$$

where  $x$  is any given level of output. We also know that  $\tilde{l} = \tilde{k}(1-t)$ . These demand functions are contingent - this is the amount of capital and labor need to produce a given output  $x$ . If the tax rate goes up, the firm must ship more capital since taxes are reducing the amount of capital that can be put into production.

We can now write a complete specification for the host government's utility taking into account the contingent demand functions, the institutional rules and the probability the state is overruled if it expropriates:

$$G(t; a) = \begin{cases} P(a\tilde{k}(1-t))R + tk & \text{if } t \leq p \\ (1-\pi) \left[ P(a\tilde{k}(1-t))R + t\tilde{k} \right] + \pi \left[ P(a\tilde{k}(1-p))R + p\tilde{k} \right] & \text{if } t > p \end{cases}$$

In the case where the host sets a tax rate below the promised threshold, the government receives the electoral benefit associated with social welfare and any takings. If, on the other hand, the applied tax is higher than promised,  $t > p$ , with probability  $\pi$  government will be restricted to a tax rate of  $p$ , and with probability  $1 - \pi$ , the state gets away with the punitive tax,  $t$ .

The state observes  $\tilde{k}$  and must make a determination about how much to tax. The first lemma

establishes that the optimal tax rate will depend on the realized value of the random variable  $a$ .

**Lemma 1.** *The firm's optimal tax rate strategy is*

$$\tilde{t} = \begin{cases} 0 & \text{if } a > \frac{P}{R} \\ 1 & \text{otherwise} \end{cases}$$

If nature draws a type of host leader that puts large amounts of weight on social welfare,  $a > \frac{P}{R}$ , then the marginal electoral returns of building social welfare are larger than the marginal benefits of takings. Hence the government acts to maximize social welfare by setting a tax rate of zero, and putting all the capital that was shipped to work, employing more domestic labor. If, on the other hand, the leader cares little for social welfare ( $a$  is low), then the marginal benefit of takings exceeds the marginal electoral benefit of social welfare enhancement, and the government expropriates entirely, and sets  $t = 1$ .<sup>8</sup>

Given this behavior by the host government, the firm knows that *ex ante* with probability  $(1 - \alpha(\frac{P}{R}))$  the government sets  $t = 0$  and with probability  $\alpha(\frac{P}{R})$ , the government sets  $t = 1$ . The expected profit of the firm is then

$$E\Pi = \left(1 - \alpha\left(\frac{P}{R}\right)\right) \left[\frac{1}{2} \ln s + \frac{1}{2} \ln x - \kappa x - x - \sigma s\right] + \alpha\left(\frac{P}{R}\right) \left[(1 - \pi)[- \kappa x] + \pi\left[\frac{1}{2} \ln s + \frac{1}{2} \ln x(1 - p) - \kappa x - x - \sigma s\right]\right] \quad (1)$$

**Proposition 1.** *The equilibrium to the domestic protection game is  $\tilde{t} = \begin{cases} 1 & \text{if } a \leq \frac{P}{R} \\ 0 & \text{if } a > \frac{P}{R} \end{cases}$  and*

$$\tilde{x} = \frac{1}{2} \frac{1 - \alpha + \pi \alpha}{(\kappa + (1 - \alpha + \pi \alpha))} \text{ where } \alpha = \alpha\left(\frac{P}{R}; d\right).$$

All proofs can be found in the Appendix. The government observes its private shock  $a$ . If  $a$  is low enough, the government has little weight on the worker's welfare in its payoff function, and

---

<sup>8</sup>By adding more convexity to the government's payoff function we might have sought an interior solution, in which the tax rate doesn't end up at the corners. This structure keeps things very simple, however.

instead chooses to expropriate. It sets the tax rate at 1, above its promise of  $p$ . If instead, the political benefits of public welfare are large enough ( $a$  large), the government forgoes the benefits of expropriation for the public benefit of social welfare.

Notice that while  $\pi$  is the exogenous probability of property rights enforcement after expropriation,  $\psi(\pi, d) \equiv 1 - \alpha(\frac{P}{R}; d) + \pi\alpha(\frac{P}{R}; d)$  (which appears in the numerator and denominator of  $\tilde{x}$ ) is the effective, equilibrium ex ante probability that property rights will be enforced. That is after taking account of government's incentive to expropriate. For the purposes of the home firm, this is the statistic that matters most: it tells them the likelihood that, in equilibrium, their investment will be protected. This statistic is a function of both the credibility of the domestic property rights environment  $\pi$  and the regime variable,  $d$ . We shall call  $\psi(\pi, d)$  the *investment climate* (Rosendorff and Shin 2012).

### 3 Strengthening the Investment Climate

We now have a precise definition of the “investment climate” that emerges from the equilibrium behavior of firm and the state:  $\psi(\pi, d) = 1 - \alpha(\frac{P}{R}; d) + \pi\alpha(\frac{P}{R}; d)$ . It is somewhat trivial to see that as the strength of the property rights enhancing institutions rises ( $\pi$  rises) so does the the investment climate. Slightly more subtle is the effect of democracy. An increase in  $d$  makes a larger value of  $a$  more likely. The probability that  $a$  is small falls with  $d$ , that is (by assumption)  $\alpha_d < 0$ . This leads to the next Lemmas:

**Lemma 2.** *The investment climate rises with improvements in credibility. That is  $\psi_\pi = \frac{\partial\psi}{\partial\pi} > 0$ .*

**Lemma 3.** *The investment climate improves with democracy. That is  $\psi_d = \frac{\partial\psi}{\partial d} > 0$ .*

#### 3.1 A Bilateral Investment Treaty Enhances the Investment Climate

BITs signed between the host and home governments have some or all of the following characteristics:

1. BITs usually require fair and equitable treatment, most favored nation treatment (a commitment not to tax foreign investment at rates higher than firms from any other country) and

national treatment (a commitment not to tax foreign investment at rates larger than applied to domestic firms).

2. The treaties permit resort to international arbitration in the instance of any dispute. Investment dispute settlement is available, via impartial international arbitrators, and we assume that international arbitration is legally binding in that a finding by the arbitrator of a violation requires compliance or compensation.<sup>9</sup>

We assume that as before, the maximal tax rate (treated as given by national treatment or most favored nation treatment) is  $p$ . We assume that with a BIT, the probability of a finding by the (now international) arbitrator in the instance of a violation is  $\pi^{BIT} > \pi$ . That is  $\Pr(win|violation) = \pi^{BIT}$ , which is exogenous. If the plaintiff wins, the plaintiff pays the national treatment tax rate,  $p$  and not the violation tax rate  $t$ . We interpret the stronger credibility of the international arbitrator as a substitute for a less reliable, credible or transparent domestic investment climate.

We view signing a BIT as an exogenous increase of the credibility of the investment rights regime, a rise in  $\pi$ . We know from Lemma 2 that a rise in credibility improves the investment climate.

**Corollary 1.** *BITs improve the investment climate.*

Moreover the effect of signing a BIT of the investment climate is greater for less accountable polities. This occurs exactly for reasons we have laid out – at larger values of  $d$ , the drawn value of  $a$  is more likely to be below the threshold  $P/R$ ; hence further rises in  $\pi$  will have smaller effects on the investment climate.

**Proposition 2.** *BITs improve the investment climate by more in less accountable polities:  $\frac{\partial \psi \pi}{\partial d} < 0$ .*

Our primary concern is the affect of a BIT on *leader survival* and its differential effects across regime types.

---

<sup>9</sup>Note that we do not require the enforceability of the international arbitrator’s rulings to be perfect. All that we require is that these rulings are more credible than the rulings of domestic court, and hence more likely to be followed.

## 4 Leader survival

Signing a BIT improves the investment climate, which has the effect of lowering the applied tax rate in expectation. This in turn enhances the willingness of foreign firms to invest in the host country. The lower tax rate, combined with the increased investment leads to more domestic employment of labor and higher social welfare, which in turn enhances the probability of leader survival.

**Proposition 3.** *Leader survival is enhanced by BIT signing. That is  $\frac{dEPr\{survival\}}{d\pi} > 0$ .*

We now explore the effect of regime type on the degree to which leader survival is improved by bit signing. We simplify further by assuming that  $\alpha \sim U[0, d]$ . The next proposition establishes that as long as the BIT has credibility that is large enough then for some values of  $d$ , the effect of BITs on leader survival falls as democracy increases. For  $d$  large enough, the investment climate is already very good. Further increases in the investment climate via signing a BIT has less of an effect than if the domestic institutions are weaker to start with.

**Proposition 4.** *For BITs that have sufficiently strong enforcement regimes ( $\pi^{BIT} > \frac{1}{3}$ ), for  $d \approx P/R$ , leader survival is enhanced by BIT signing by more in less accountable polities. That is  $\lim_{d \rightarrow \frac{P}{R}} \frac{\partial}{\partial d} \frac{dEPr\{survival\}}{d\pi} < 0$*

The more accountable is the state to social welfare, the less a leader has to gain (in terms of survival probabilities) from strengthening the credibility of the investment court.

As a leader becomes more responsive to broader societal needs, it is more likely that the host government will emphasize social welfare rather than personal gain, and hence offer a low tax rate. Expecting this, foreign investors send more capital, further enhancing the survival probability. There is little added gain from strengthened investor protections – they are less likely to be needed. If instead, the state is less accountable, the risk of expropriation is higher. Hence the need for more investor protections, and hence the greater effect of a stronger (international) court on capital flows, and leader survival.

### 4.1 Hypotheses

We operationalize Propositions 3 and 4 by using the counts of BITs signed by a particular leader.



**Hypothesis 1** (Regime Type: Autocracies vs. Democracies). *The probability with which leaders survive in office is rising in the number of BITs signed, and this effect will be greater among autocratic leaders than among democratic leaders.*

Empirically we can also make use of the observed variation across types of autocratic regimes. Different autocratic regimes face varying constraints and incentives, thus influencing foreign economic policies (Steinberg and Malhota 2014). Indeed, the institutional environment and economic uncertainty vary with the identity of the leader and its inner circle: monarchies rely on family and kin networks; military leaders rely on military juntas; and civilian dictators rely on elites within the regime party (Cheibub, Gandhi, and Vreeland 2010).

We have argued above that democracies, by virtue of the larger and more dispersed support coalition, are more likely to see property rights protected – for aggregate economic wellbeing is enhanced by capital formation, and aggregate economic performance rewards democratic incumbents. There is also variation in the size of the underlying support coalition across autocratic types. As a further robustness test of our argument, we explore whether those autocrats with larger bases of support will see smaller gains from BIT signings; those autocrats that rely on narrow inner circles for survival are the least credible and may experience the greatest benefit from BITs in terms of survival.

To operationalize the size of a leader’s support coalition in autocracies we follow the categorization in (Cheibub, Gandhi, and Vreeland 2010). Civilian dictators, often relying on populist (if not democratic) support, are characterized by a larger core of supporters, and we predict that among autocratic types, the survival benefits of BITs is smallest for these civilian, institutionalized dictators. In contrast, monarchies are characterized by small inner circles and core support bases; there are few constraints to expropriation. Survival however relies on the continued and repeated care and feeding of the core support base, and expropriation cuts off the resources necessary to reward those supporters (investment dries up). These autocratic variants are in the direst need of credible commitments to protect property rights; monarchies, we predict, have the most to gain in terms of survival by signing BITs.

Military juntas are an autocratic form that lie somewhere between monarchies and civilian

dictators on the scale of underlying support coalition size. We predict, therefore, that the effect on survival of BIT signing by military regimes lies somewhere between that of the personalistic monarchies and the institutionalized civilian dictators.

**Hypothesis 2** (Regime Type: Across Autocratic Types). *The effect on leader survival of BIT signing will be greater among more personalistic autocratic leaders than among more institutionalized autocratic leaders.*

Our third hypothesis is a consequence of Proposition 2: the effect of BITs on the investment climate is contingent on the regime type.

**Hypothesis 3** (BITs and the Investment Climate). *The improvement of the investment climate on BIT signing is larger for less accountable polities.*

The next sections explore the empirical effect regime type has on the link between BIT signings and both leader survival creditworthiness.

## 5 Empirics: BITs and Leader Survival – Autocracies and Democracies

We test the hypothesis that BIT signing influences leader survival, and that this effect is conditioned by regime type. A cursory examination of the data offers some initial confidence in the claim. Autocratic leaders in developing countries sign many BITs: Hamad bin Isa Al Khalifa (Bahrain) signed 28, Qatar’s Al Thani signed 49, and Belarus’ Lukashenko signed 50. Democratic leaders in similar parts of the world at similar stages of development, such as Israel’s Rabin (10) and Netanyahu (6), or Cypres’ Clerides (11) or Bulgaria’s Kostov (18) signed many fewer. Given that we aim to isolate the behavior of a given leader, we focus on BITs signed as they show a clear attribution of responsibility to such executive decision.

For a systematic analysis, we rely on survival (event history) analysis complemented by propensity score matching techniques. Evidence based on the survival of developing countries’ leaders in office from 1960 to 2013 strongly supports our arguments.

Then we explore an instrumental variables approach to deal with the endogeneity of BIT signing, and once again show that controlling for selection, autocratic leaders experience a greater effect on survival with BITs than do democratic leaders.

## 5.1 Data

Leader survival data is drawn from the Archigos database (Goemans, Gleditsch, and Chioza 2009). We use the readily available Version 2.9, which contains information until 2004. However, limiting the data to the period covered by Archigos 2.9 would exclude 514 BITs signed since 2004.<sup>10</sup> To address this issue we update the Archigos data through December 31, 2013. Thus, the unit of analysis we use is the leader-year over the 1960-2013 period. Our theory presumes a developing country eager to have access to foreign capital; hence we restrict our sample to non-OECD countries, but include BITs signed with any partner.<sup>11</sup> We observe 143 countries with 1179 leaders, and once we incorporate our set of covariates, our full sample is comprised of 132 countries and 921 leaders. Since the data are both left and right censored we adjust for censoring in our estimates. Thus, leaders who were in office prior to 1960 are only considered to be at risk from January 1, 1960 onwards.

Our main regressor of interest is the log of the number of BITs signed by a given leader. We construct this measure by collecting BIT signing data from the United Nations Conference on Trade and Development (UNCTAD) for all countries between January 1, 1960 and June 1, 2013.<sup>12</sup>

We recode these data so the observation is the leader-year.<sup>13</sup> We then construct a count measure (*BITs signed*) of the number of BITs signed between the time a given leader takes office and year  $t$ . In our analyses below, we apply a logarithmic transformation:  $\log(\text{BITnumber} + 1)$ . The use of the logarithm reflects the view that the effect of BITs on strengthening the credibility of the

---

<sup>10</sup>BITs signed as of June 1, 2013, according to UNCTAD.

<sup>11</sup>Restricting the partners to be OECD members only does not change the results.

<sup>12</sup>Source: [http://unctad.org/en/Pages/DIAE/International%20Investment%20Agreements%20\(IIA\)/Country-specific-Lists-of-BITs.aspx](http://unctad.org/en/Pages/DIAE/International%20Investment%20Agreements%20(IIA)/Country-specific-Lists-of-BITs.aspx)

<sup>13</sup>In some instances, BIT accession is contemporaneous with a change in leaders. Take for instance the change of power in Croatia from Zlatko Tomcic to Stipe Mesic on February 18th, 2000. That day, two BITs were officially signed; one with Thailand and one with Zimbabwe. In these cases, we allocate signings to the new incumbent – in this particular case, to Mesic.

property-protection regime is subject to diminishing marginal returns.<sup>14</sup>

Our measure of democracy is taken from the Polity IV index (2013 version) (Marshall, Gurr, and Jaggers 2013). We use the cumulative polity score (*Polity2*), which consists of a subjective index that captures the regime authority spectrum on a 21-point scale ranging from -10 (hereditary monarchy) to +10 (consolidated democracy). To test the conditional nature of the effect of BIT signing postulated above, we interact this value with the log number of BITs signed under a given leader.

We incorporate a battery of economic variables as controls. We include values of the log of per capita GDP in constant 2005 US dollars, the percentage growth rate in real GDP, the log of total population size, the log of aid inflows, all of which are drawn from the World Development Indicators (WDI) hosted by the World Bank. Given the relevance of natural resources, we use data compiled by Ross (2013) and control for the natural logarithm of the oil and gas production in constant 2009 US dollars. Finally, it is important to take into account how other international economic treaties influence leader survival (Hollyer and Rosendorff 2012b). We make use of data collected by Dür, Baccini, and Elsig (2014). To avoid overlap with our BIT measure, we control for the logarithm of the number of PTAs without investment clauses that go into operation between the time a given leader takes office and year  $t$ .<sup>15</sup> Finally, we also control for the total number of BITs signed by the country, up to the previous leader.<sup>16</sup>

Below, we put our hypothesis to the test by using two alternative approaches. First, we estimate a Cox frailty proportional hazards model. However, results are open to criticism due to selection bias concerns. We attempt to ameliorate this concern by processing the full data so to make use of propensity score matching where we match signer- with non-signer-leaders. All specifications provide strong support for our claims.

---

<sup>14</sup>Using the absolute number instead of taking the log yields almost identical results.

<sup>15</sup>Tobin and Busch (2010) show that a BIT between two states leads to a PTA between the same states; but that if the developing country has many BITs, especially with other wealthy states, any pair of states is less likely to sign a PTA. Bütthe and Milner (2014) also explore the links between PTAs and BITs, and Pelc and Urpelainen (2015) compares their key design elements.

<sup>16</sup>A list of summary statistics is provided in the Appendix (Table A1).

## 5.2 Cox Frailty Model Estimates

To analyze our hypotheses, we first estimate a Cox proportional hazards model. The hazard rate,  $h(t)$  represents the conditional probability of having an event at time  $t$ , conditional on having survived up to that time. In particular, the event we model is the removal of a given leader from office. The hazard rate of leader  $l$  from country  $c$  is a function of a baseline hazard function  $h_0(t)$  and observed covariates,  $\mathbf{X}_{l,c} : h_{l,c}(t) = h_0(t)e^{\mathbf{X}_{l,c}\beta + \epsilon_{l,c}}$ . Here, the baseline hazard function is estimated non-parametrically using the observed time of regime failure.<sup>17</sup> The Cox model allows flexibility in this estimation by not constraining  $h_0(t)$  to take any particular functional form. Observed covariates operate multiplicatively on  $h_0(t)$ , shifting the expected risk of leader removal proportionally up or down depending on the value of  $\beta$ . For instance, positive coefficient values imply that an increase in the given covariate is associated with an upwards shift in the hazard function,  $h(t)$  – i.e., an increase in the risk of being removed from office.

In our estimates, we adjust for the shared frailty faced by regimes from a given country. This assumes that survival times of regimes from the same country are correlated. This modeling choice holds that some regimes are more prone to failure than others. This accounts for variations in electoral institutions, party systems, culture or other country-specific factors that are likely to be correlated with leader survival. We therefore estimate the following model:

$$h_{l,c}(t) = h_0(t)e^{\mathbf{X}_{l,c}\beta + \theta_c + \epsilon_{l,c}} \quad (2)$$

where  $\theta_c$  is a country-specific frailty parameter drawn from a log-Gamma distribution with mean zero. This is equivalent to estimating model with country-specific random effects in a more standard time-series-cross-section framework (Box-Steffensmeier and Jones 2004). Evidence from likelihood-ratio tests against models without shared frailties strongly indicates that shared frailties should be included in the specifications.

Results are reported as Models 1 and 2 in Table 1.

While the basic Cox frailty model makes no assumption about the shape of the baseline hazard

---

<sup>17</sup>This can be read as an estimate of the rate of event occurrence when all the covariates are zero. That is, the baseline hazard reflects how the rate of event occurrence changes with time only.

Table 1: **Cox Proportional Hazards Estimates: Leader Survival**

	(1)	(2)	(3)	(4)
BITs signed (leader tenure) (Ln)	-0.21*** (0.04)	-0.34*** (0.06)	-0.29*** (0.08)	-0.47*** (0.10)
Polity2	0.04*** (0.01)	0.03*** (0.01)	-0.00 (0.01)	-0.01 (0.01)
BITs signed $\times$ Polity2	0.03*** (0.01)	0.04*** (0.01)	0.04*** (0.01)	0.04*** (0.01)
GDPpc (Ln)		0.04 (0.06)		0.08 (0.07)
Growth (% of GDP)		-0.04*** (0.01)		-0.04*** (0.01)
Trade (% of GDP)		-0.00 (0.00)		-0.00 (0.00)
Population (Ln)		0.08 (0.06)		0.06 (0.06)
Oil and Gas Prod. (Ln)		-0.00 (0.01)		-0.00 (0.01)
PTAs signed (leader tenure)		0.07 (0.11)		0.05 (0.11)
Foreign Aid (Ln)		-0.03 (0.04)		-0.02 (0.04)
BITs signed (country, $l - 1$ ) (Ln)		-0.04 (0.04)		-0.00 (0.04)
Time-varying regressors				
BITs signed (leader tenure) (Ln)			0.00 (0.01)	0.01** (0.01)
Polity2			0.01*** (0.00)	0.01*** (0.00)
BITs signed $\times$ Polity2			-0.00 (0.00)	0.00 (0.00)
Observations	7145	5083	7145	5083
Countries	143	132	143	132
# of subjects	1179	921	1179	921
# of failures	1028	776	1028	776
Frailty parameter	0.19	0.24	0.26	0.29

Standard errors in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

function  $h_0(t)$  it does assume that hazard rates are proportional across units, i.e. that changes in covariate values shift the hazard function up or down, but do not affect its shape. We test these assumptions by using Grambsch-Therneau and Harrell’s rho tests. Both the global Grambsch-Therneau global test and some of the covariate specific Harrell’s rho tests lead us to reject the null hypothesis of no relationship between the residuals and time. In particular, the evidence suggests that the effect of both the log number of BITs signed and Polity change over time. Because of this, we condition their effect on time (Box-Steffensmeier and Zorn 2001). We do so by interacting them with the number of years in office – i.e., survival time. Results are displayed as Models 3 and 4 in Table 1.

The evidence follows our expectations. Signing BITs is associated with a lower risk of being removed from office. Examination of the time-varying regressors in Models 3 and 4 suggests that this effect declines over a leader’s tenure. The effect of each additional BIT signed is smaller the longer a leader is in office.

The main piece of evidence is the interaction effect between BIT signing and democracy. Our argument posits that the relationship between BITs and leader survival is stronger in autocracies than in democracies. That is, we expect the interaction effect to be positive.<sup>18</sup> Evidence from all models support our claims. To aid interpretation, we estimated hazard rates at different values of our variables of interest, and show them graphically in Figure A1. To further facilitate interpretation, we estimate the substantive effect of signing a BIT while in office and how it varies by regime type, examining the percentage change in the hazard of leader failure.<sup>19</sup> Figure 1 illustrates the estimated percentage change in the hazard (where the solid black lines represent the 95% confidence intervals around the estimated percent change (dotted line) in the hazard rate). It demonstrates

---

<sup>18</sup>The dependent variable is leader failure. So a positive coefficient on the interaction term means that failure falls as polity falls for a given number of BITs, and the reduction in failure is enhanced as the number of BITs rises.

<sup>19</sup>In particular, we estimate the effect of signing the first BIT in the leader’s tenure –i.e., from 0 to 1. We rely on simulations of 10,000 draws of the beta and variance-covariance matrices, and calculate the percentage change in the hazard as follows:

$$\% \Delta h(t) = \frac{\exp(\beta X_2) - \exp(\beta X_1)}{\exp(\beta X_1)} \times 100 \quad (3)$$

where  $X_1$  is the value of the variable before the change (0) and  $X_2$  is the value after the change (1). Since we use the natural logarithm of the number of BITs signed, this number is actually 2.7182818 in our estimation.

that the results are substantively meaningful. As expected, the change in hazard rates is larger and highly statistically significant for the most autocratic states, estimated at -87% [95 C.I.: -94 – -77%]. In contrast, this benefit diminishes and becomes statistically indistinguishable from zero as democracy increases.<sup>20</sup>

## 6 Authoritarian Regime Types

We now test Hypothesis 2, that the effect of BIT signing on leader survival is moderated by the *type* of the autocratic regime. Classification of autocratic regimes as monarchic, military, or civilian is taken from the Democracy and Dictatorship (DD) dataset compiled by [Cheibub, Gandhi, and Vreeland \(2010\)](#). As before, we rely on survival analysis complemented by propensity score matching techniques. The results strongly support our arguments.

### 6.1 Cox Frailty Model Estimates

To analyze our hypotheses about different autocratic regime types, we re-estimate a Cox proportional hazards model from the previous section, but replace the *Polity2* variable with the *Monarchy*, *Military Regime*, and *Civilian Dictatorship* indicators. Moreover, we include the interaction of each one of these indicators with our BITs variable. Democratic regimes represent the baseline category. Results are reported in [Table 2](#).

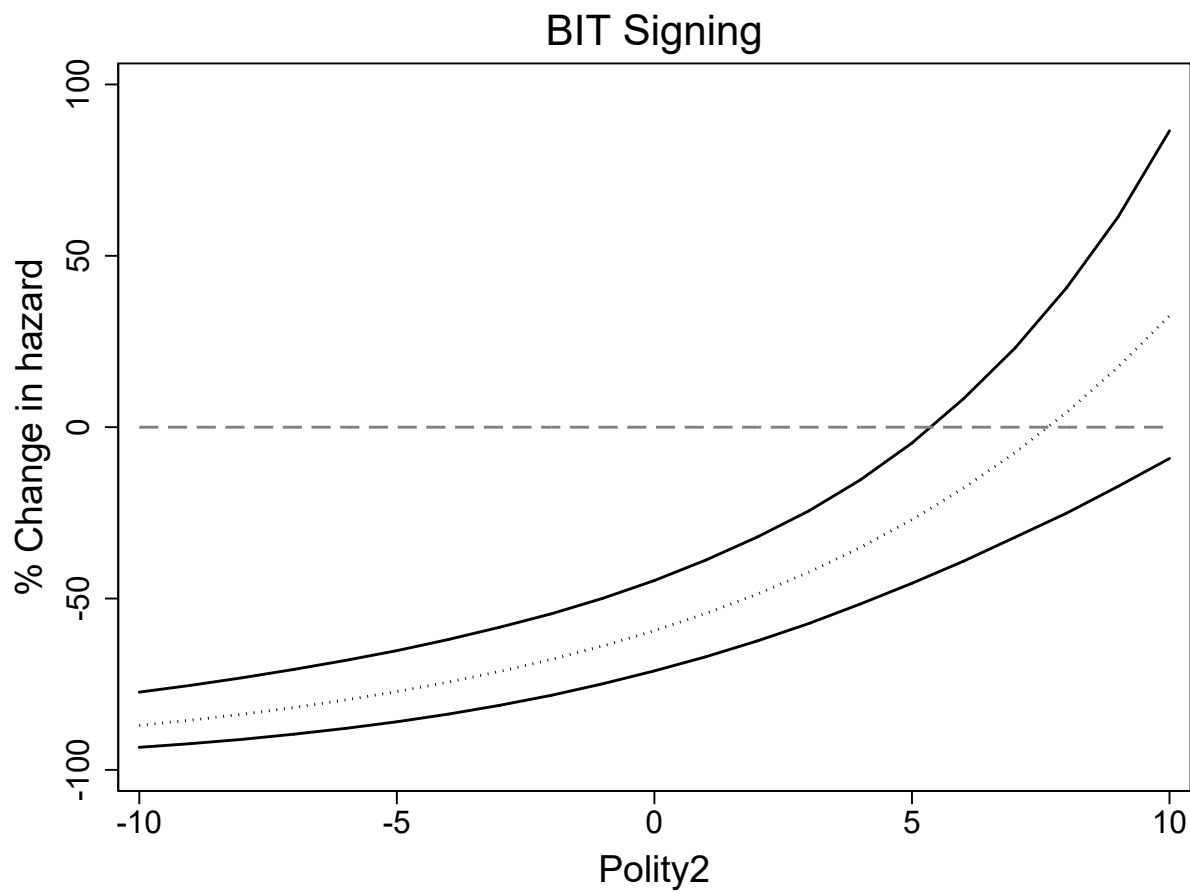
The evidence follows our expectations. Signing BITs has no statistically significant effects on leader survival for democratic leaders. In contrast, as the interaction terms show, BITs are associated with a lower risk of being removed from office for autocratic leaders, and the estimates are as expected, that is, the more paternalistic regimes – the monarchies – experience the largest effects.

---

<sup>20</sup>Table [A2](#) in the Appendix displays the values for each point of *Polity2* score.



Figure 1: % Change in Hazard



*Note:* Solid lines represent the 95% confidence intervals around the simulated estimates (dotted line).

Table 2: **Cox Proportional Hazards Estimates: Leader Survival Across Autocracies**

	(1)	(2)	(3)	(4)
BITs signed (leader tenure) (Ln)	0.08 (0.05)	-0.01 (0.06)	0.20** (0.09)	0.05 (0.11)
Civilian dictatorship	-0.58*** (0.12)	-0.60*** (0.15)	0.37** (0.15)	0.51*** (0.19)
Military regime	-0.10 (0.11)	-0.01 (0.12)	0.84*** (0.13)	0.84*** (0.15)
Monarchy	-1.00*** (0.22)	-0.87*** (0.29)	0.16 (0.29)	0.31 (0.37)
BITs × Civ. Dictatorship	-0.33*** (0.10)	-0.31*** (0.11)	-0.44*** (0.15)	-0.41** (0.17)
BITs × Military Regime	-0.37*** (0.12)	-0.41*** (0.13)	-0.45** (0.18)	-0.40* (0.20)
BITs × Monarchy	-0.41** (0.20)	-0.73*** (0.28)	-1.09** (0.45)	-5.21** (2.20)
GDPpc (Ln)		0.14** (0.06)		0.16** (0.07)
Growth (% of GDP)		-0.04*** (0.01)		-0.04*** (0.01)
Trade (% of GDP)		-0.00 (0.00)		-0.00 (0.00)
Population (Ln)		0.07 (0.06)		0.03 (0.06)
Oil and Gas Prod. (Ln)		-0.01 (0.01)		-0.01 (0.01)
PTAs signed (leader tenure)		0.10 (0.11)		0.09 (0.12)
Foreign Aid (Ln)		0.01 (0.04)		0.01 (0.04)
BITs signed (country, $l-1$ ) (Ln)		-0.00 (0.04)		0.05 (0.04)
Time-varying regressors				
BITs signed (leader tenure) (Ln)			-0.05*** (0.01)	-0.04*** (0.02)
Civilian Dictatorship			-0.26*** (0.02)	-0.29*** (0.03)
Military Regime			-0.28*** (0.02)	-0.26*** (0.03)
Monarchy			-0.27*** (0.03)	-0.26*** (0.04)
BITs × Civ. Dictatorship			0.06*** (0.02)	0.07*** (0.02)
BITs × Military Regime			0.07*** (0.02)	0.05*** (0.02)
BITs × Monarchy			0.08*** (0.02)	0.19*** (0.06)
Observations	6547	4830	6547	4830
Countries	143	134	143	134
# of subjects	1115	905	1115	905
# of failures	968	758	968	758
Frailty parameter	0.19	0.26	0.24	0.29

Standard errors in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

## 7 Robustness

It is important to highlight that we have assessed the robustness of the results presented thus far to a variety of robustness tests, namely analyzing the sensitivity of the sample and estimation, pre-processing via matching, as well as using a selection equation.

From the point of view of survival analyses, we made sure that our findings are not driven by particular cases of removal. As such, when conducting our analyses (i) removing leaders who died in office from natural causes, (ii) removing leaders who were in office less than 1 year, or (iii) removing leaders who were in office less than 2 years, our results remain unchanged. In a similar vein, to confirm the robustness to the estimation method, we also implemented a parametric Weibull model where we model the ancillary shape parameter as a function of democracy (i.e., *Polity2*), obtaining the same results (see Table A3).

We also made sure that the results are not driven by imbalances in observables by pre-processing the data via matching, following the approaches taken by [Simmons and Hopkins \(2005\)](#) and [Hollyer and Rosendorff \(2012b\)](#). We obtain the same results –if anything, we are able to retrieve more precise estimates– and show them in the Appendix (see Tables A4 and A6).

However, if selection into BITs takes place on unobservables, our matching estimates will be biased and endogeneity might be addressed through the use of instrumental variables or Heckman-type models. However, as it is well established in the IR literature, using instrumental variables to empirically address the selection into international treaties and organization so to understand their effect is a challenging task ([von Stein 2005](#)). Here, for the model to be identified, one would need an instrument that influences the likelihood of signing BITs but in no other way affects leader survival. While we do not claim to use an instrument that perfectly satisfies this condition, for completeness we do present evidence relying on this method in order to show that our results still hold.

Some scholars have recently proposed that membership in certain international institutions can be instrumented by the relations a given state has with other institutions. In particular, the UNESCO has been subject to this test when analyzing economic outcomes. [Gray \(2009\)](#) uses the number of UNESCO World Heritage sites to model the effects of EU accession on spreads

on government bonds. [Rosendorff and Shin \(2012\)](#) use the cumulative number of non-economic UNESCO conventions the leader is party to model BIT accession and analyze FDI inflows. Building upon the latter, we use UNESCO Conventions to put at test our theory of how BITs influence leader survival. The UNESCO reports the list of conventions each state is party to and their date of signing and ratification. These include, for instance, The Protocol to the Convention for the Protection of Cultural Property in the Event of Armed Conflict, and Convention on Wetlands of International Importance Especially as Waterfowl Habitat.<sup>21</sup>

The instrumental variable probit model estimates two equations simultaneously via maximum likelihood: first, a selection equation estimates a leader’s likelihood of signing a BIT for any given leader-year, and then, the outcome equation estimates the effect of BIT signing on the probability that the leader is removed from office.<sup>22</sup>

The unit of analysis remains leader-year. The outcome variable is an indicator of whether the leader was removed from office that year, or not. To account for time-dependence, we include cubic polynomial of the years the leader has been in office. The key variable of interest is *BITs signed* which is (the log of) the number of BITs signed between the time a given leader takes office and year  $t$ . In the selection equation, the main variable is the logarithm of the cumulative number of UNESCO conventions a leader has signed over her tenure. The economic controls are the same from the previous section. Finally, we include both region and year fixed effects, and cluster the standard errors at the leader level.

Results are presented in [Table 3](#). The first two columns display the estimation for Autocracies, while the last two do so for Democracies. Evidence from the selection equation is consistent with the literature finding that UNESCO conventions predict BIT signings. The outcome equation provides support for our arguments. BIT signings have a strong and negative effect on leader failure – i.e., increase leader survival – of autocratic leaders. On the other hand, BIT signing has no discernible effect on the survival of democratic leaders.

---

<sup>21</sup>A full list can be found in the Appendix, [Table A5](#).

<sup>22</sup>Similar to other types of selection models, the estimate  $\rho$  represents the correlation between the error terms of the two equations, effectively accounting for selection, and facilitating the unbiased estimations of the effect of BITs on leader survival.

Table 3: IV Probit Estimates

	Autocracies		Democracies	
	(1)	(2)	(3)	(4)
<i>Outcome Equation</i>				
BITs signed (leader tenure) (Ln)	-1.12*** (0.30)	-1.13*** (0.37)	-0.13 (0.20)	-0.28 (0.22)
GDPpc (Ln)	0.22** (0.11)	0.21* (0.12)	0.01 (0.06)	0.03 (0.06)
Growth (% of GDP)	-0.02*** (0.01)	-0.03*** (0.01)	-0.02*** (0.01)	-0.02*** (0.01)
Trade (% of GDP)	-0.00 (0.00)	-0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
Population (Ln)	0.05 (0.07)	0.04 (0.07)	0.06 (0.06)	0.06 (0.05)
Oil and Gas Prod. (Ln)	0.00 (0.01)	0.00 (0.01)	-0.00 (0.01)	0.00 (0.01)
PTAs signed (leader tenure)	1.15*** (0.41)	0.65* (0.37)	-0.15 (0.11)	-0.17* (0.10)
Foreign Aid (Ln)	0.03 (0.06)	0.07 (0.07)	0.02 (0.04)	0.04 (0.04)
BITs signed (country, $l - 1$ ) (Ln)	0.14 (0.10)	-0.03 (0.09)	0.03 (0.04)	0.06 (0.05)
Cubic time pol.	✓	✓	✓	✓
Region FE	✓	✓	✓	✓
Year FE		✓		✓
<i>Selection Equation</i>				
UNESCO Sign (Ln)	0.16** (0.07)	0.15** (0.07)	0.30*** (0.08)	0.27*** (0.07)
GDPpc (Ln)	0.17** (0.08)	0.17** (0.08)	0.11** (0.05)	0.14*** (0.05)
Growth (% of GDP)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)
Trade (% of GDP)	-0.00 (0.00)	-0.00* (0.00)	0.00 (0.00)	-0.00 (0.00)
Population (Ln)	0.03 (0.05)	0.02 (0.04)	0.12*** (0.05)	0.08* (0.04)
Oil and Gas Prod. (Ln)	0.00 (0.01)	0.00 (0.01)	-0.01 (0.00)	-0.00 (0.00)
PTAs signed (leader tenure)	1.07*** (0.15)	0.72*** (0.13)	0.41*** (0.10)	0.28*** (0.09)
Foreign Aid (Ln)	0.05 (0.03)	0.08*** (0.03)	0.01 (0.03)	0.02 (0.03)
BITs signed (country, $l - 1$ ) (Ln)	0.20*** (0.05)	0.07 (0.06)	0.14*** (0.03)	0.02 (0.04)
Cubic time pol.	✓	✓	✓	✓
Region FE	✓	✓	✓	✓
Year FE		✓		✓
$\rho$	0.84** (0.36)	0.70** (0.35)	0.03 (0.14)	0.07 (0.15)
Observations	2010	1927	2051	1993
Clusters	317	317	534	534
Log-Likelihood	-2,532.94	-2,263.99	-3,211.24	-2,931.64

Robust standard errors clustered at the leader level in parentheses.

Autocracies: *polity2* score  $\leq -5$ . Democracies: *polity2* score  $\geq 5$ .

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

## 8 Mechanisms

We have shown a strong and robust association between signing BITs and autocratic leader survival, especially the more paternalistic autocrats. However, the mechanisms underlying how BITs are prolonging tenure are less clear. Two main mechanisms help explain our results. First, a direct effect via capital accumulation enhances economic performance and development. Second, an indirect effect, via enhancing the overall investment climate and economic environment. Below, we first briefly review the extant literature on the direct effect which supports our approach. Next, we bring novel evidence of potential indirect mechanisms at play by examining the case of sovereign creditworthiness and overall economic risk.

### 8.1 Direct Channel: Capital Accumulation

Leaders in host countries sign BITs to attract foreign capital. As noted before this survival benefit is larger for more centralized, paternalistic leaders (and autocrats more generally).

In an autocratic regime, the proceeds of increased investment and enhanced economic environment tend to disproportionately benefit those affiliated with the regime ([Bueno De Mesquita et al. 2004](#)). For instance, access to resources such as foreign aid or rents from natural resources enable leaders to decrease their risk of removal ([Bueno De Mesquita and Smith 2010](#)). FDI inflows in particular are prone to do so since they asymmetrically benefit regime supporters. For example, leaders can implement requirements that international investors establish joint ventures, typically with established domestic elites or requirements for technology transfers to domestic companies affiliated with the regime. Similarly, uncertainties in the political or legal environment may lead foreign investors to choose to employ or partner with domestic officials or their families even absent overt government pressure to do so. A prominent anecdotal example of this are the recent SEC investigations of JP Morgan Chase’s “Sons and Daughters” program – which involved the selective hiring of the children of prominent Chinese officials – for violations of the Foreign Corrupt Practices Act, serve to underscore the way in which foreign investment can selectively benefit ruling officials under autocratic rule.

Two recent papers provide direct evidence of this direct channel. [Tomashevskiy \(2012\)](#) discuss

how FDI enables autocrat leaders to buy off elites, thus decreasing a coup threat [Hollyer, Rosendorff, and Vreeland \(2014\)](#) show explicitly that FDI leads to autocratic survival in the context of an elite threatened both by mass protests and reduce the risk of a coup. Overall, to the extent that foreign investment improves the economy, it also enhances the stability of the regime in power ([Miller 2012](#)).

## 8.2 Indirect Channel: An Enhanced Economic Environment

BITs are designed to attract foreign capital, in particular foreign direct investment, by enhancing the property rights environment. Hypothesis 3 asserts that BIT signing leads to improvements in the investment climate in the broader domestic economy, with larger effects in less accountable regimes.<sup>23</sup>

We examine sovereign creditworthiness. There is evidence that creditworthiness matters for leader survival – [Arias \(2015\)](#) finds that cheaper credit increases the extent of patronage politics and consequently increases leader survival. [DiGiuseppe and Shea \(2015b\)](#) show that credit downgrades affect nondemocratic leaders' tenure more than democratic leaders' tenure. In a complementary piece, they find that better credit conditions improve survival as well, but this benefit is accrued *only* by autocratic regimes ([DiGiuseppe and Shea 2015a](#)).

While the link between BITs and creditworthiness has been ignored in the literature, we are not the first ones to suggest that sovereign creditworthiness is influenced by international agreements. [Dreher and Voigt \(2011\)](#) argue that membership into international organizations (IOs) – i.e., multi-lateral international agreements – is linked to a boost in credibility, proxied by country risk ratings. [Tomashevskiy and Kono \(2015\)](#) focus on PTAs, showing that participation in PTAs also improves a country's credit rating. They argue that the mechanism is twofold: PTAs reduce trade volatility and hence improve access to export revenues needed to service sovereign debt; and an ideological commitment to liberal economic policies which improves country perceptions by ratings agencies.

We argue that BITs have similar consequences. First, they attract foreign direct investment (direct channel). Second, they represent a commitment to market-friendly policies towards inward

---

<sup>23</sup>Both FDI and portfolio investment imply the flow of foreign capital, and sometimes it can be hard to confidently separate the two ([Dixit 2011](#)). Domestic investment is also sensitive to aggregate economic conditions.

foreign direct investment, which should be positively perceived by credit rating agencies (CRAs). Third, some BITs create opportunities for bondholders to demand the same rights as foreign direct investors. This is a result of clauses that rely on open-ended definitions of investment that do not exclude sovereign debt. For instance, the BIT between Argentina and Italy (signed in May, 1990) influenced bondholders' legal resources after Argentine's 2001 default. In the case *Abaclat and Others v. Argentine Republic* (ICSID Case No. ARB/07/5) Italian bondholders who refused the debt-restructuring deal successfully argued that the Argentina-Italy BIT gave them the right to pursue compensation through investor-state arbitration at the ICSID.<sup>24</sup>

### 8.3 TSCS Estimation: Error Correction Model

To examine the extent to which the domestic investment climate is enhanced by the signature of BITs we will analyze three different indicators. To begin with, and in order to assess sovereign creditworthiness, we mainly rely on Standard & Poor's (S&P) sovereign ratings. S&P is one of the three major credit rating agencies along with Moody's and Fitch. S&P offers the largest temporal and cross-sectional coverage of the major CRAs. These ratings assess a country's creditworthiness, namely the ability and willingness to service its debt in full and on time. Published ratings take the form of ordinal letter grades, going from D (default category) and C (highest default risk) to AAA (lowest default risk). Debt is rated as "investment grade" (BBB or higher) and "non-investment grade" (BB or below). As is standard in the literature (e.g., Afonso 2003, Archer, Biglaiser, and DeRouen Jr. 2008), we convert these into a 17-point (0-16) scale where 0 corresponds to the lowest rating and 16 corresponds to the highest.

While S&P ratings are a fairly standard proxy for creditworthiness, ratings for developing markets generally start only in the mid-1990s, and many states are not rated (DiGiuseppe, Barry, and Frank 2012).<sup>25</sup> As a second check of the creditworthiness mechanism, we make use of credit ratings published by *Institutional Investor (II)* magazine. *II* conducts semiannual (March and September) credit surveys, collecting the opinion of senior economists and sovereign risk analysis at international banks and money management and securities firms to rank country creditworthiness

---

<sup>24</sup>See <https://icsid.worldbank.org/apps/ICSIDWEB/cases/Pages/casedetail.aspx?CaseNo=ARB/07/5>

<sup>25</sup>Similar selection issues might affect Bond indices for example.



(i.e., likelihood of default) on a scale of 0 to 100, where higher values represent more creditworthy states.<sup>26</sup> We use the yearly average, which spans 1980 to 2009 and covers up to 111 developing countries in our sample.

As a final check of the creditworthiness mechanism, we analyze a behavioral outcome relying on Contract Intensive Money (CIM) data. CIM is defined as the ratio of non-currency money to the total money supply, namely  $\frac{M2-C}{M2}$ , where  $M2$  captures the (broad) money supply and  $C$  represents the currency outside banks. While not a measure of creditworthiness per se, as it does not measure default risk, it does capture an objective measure of enforceability of contracts in the domestic economy (i.e., economic risk) which has direct economic consequences (Clague et al. 1996). The intuition behind the CIM measure is simple: if economic agents cannot be confident that their assets in banks will not be confiscated, they will lean towards currency as their preferred form of money. As such, a strong ‘contract enforcement’ environment has clear economic consequences, and one of them should be a higher proportion of contract-intensive money. An additional advantage of the CIM is its coverage. Data is available since the beginning of our sample (i.e., 1960) for up to 120 developing countries.

The unit of analysis in this section is country-year. The independent variables are the number of BITs signed by a country in a given year and the *Polity2* score in that given year.

We estimate an error correction model, which allows us to model both short- and long-run effects (De Boef and Keele 2008). Since our key test relies on the interaction between BITs and democratic institutions, we simplify the interpretation of the results by estimating two separate models, one for autocratic regimes and one for democratic regimes. We estimate the following equation for autocratic and democratic countries separately:

$$\begin{aligned} \Delta Creditworthiness_{i,t} = & \alpha Creditworthiness_{i,t-1} + \beta \Delta BIT_{i,t} + \gamma BIT_{i,t-1} \\ & + \Delta \mathbf{X}_{i,t} \phi + \mathbf{X}_{i,t-1} \rho + \delta_t + \tau_i + \epsilon_{i,t} \end{aligned} \quad (4)$$

Here, *Creditworthiness* is measured by S&P, *II* ratings and CIM (as proxy for economic risk

---

<sup>26</sup>These experts are autonomously polled and weighted in concordance with the assets of their firm (D’Ambrosio 2005).

instead of default risk), where  $i$  is a given country and  $t$  a given year – and the subscripts  $a$  and  $d$  denotes the estimation for autocracies and democracies respectively. While  $\beta$  captures the short-run effects, the long-run effects are captured by the parameters estimating the effect of the lagged variables,  $\gamma$ . The long run multiplier, which computes the total effects of a change in an independent variable, is obtained by dividing the long run parameter by  $-\alpha$ , which is anticipated to range between  $[-1, 0]$ . We use country fixed effects ( $\tau_i$ ) to control for time-invariant confounding factors and also control for year fixed effects ( $\delta_t$ ). We also include a battery of standard controls in vector  $\mathbf{X}_{i,t}$ , namely GDP, GDP per capita, Trade, ICSID filings, and PTAs signed without investment clauses. While we are splitting the sample based on *Polity2* values, we nonetheless include the *Polity2* score as a control in the analysis. Finally, errors are clustered at the country level.<sup>27</sup>

Results are shown in Table 4. In each case, Columns 1 and 2 correspond to autocratic regimes while Columns 3 and 4 correspond to democratic regimes – without and with controls in each case.

**S&P Ratings** The results analyzing creditworthiness using S&P Ratings are displayed in Panel A and the evidence strongly conforms with our theoretical predictions. Countries that sign BITs see an improvement in their S&P credit rating, but this benefit is more strongly accrued by autocratic regimes. The coefficient sizes of interest for autocracies are highly significant and stable across specifications, while those for democracies are more unstable and are not significant once we control for relevant covariates. Nonetheless, the limited sample size warrants caution when interpreting these results. To address this, and check the robustness of this finding, we proceed to analyze a second measure of creditworthiness.

**Institutional Investors** In Panel B, we analyze our second measure of creditworthiness, *Institutional Investors* Ratings. The overall pattern is replicated. Columns 1 and 2 show large, highly significant and stable results for autocratic regimes signing BITs. In contrast, Columns 3 and 4 show small, unstable and insignificant results for BITs when they are signed by democratic regimes.

---

<sup>27</sup>Table A7 in the Appendix displays the summary statistics.

Table 4: **Regime Type, Creditworthiness & Economic Risk and BITs**

	Autocracies		Democracies	
<i>Panel A: S&amp;P Ratings</i>				
	(1)	(2)	(3)	(4)
S&P Ratings <sub>t-1</sub>	-0.14 (0.08)	-0.35*** (0.11)	-0.13*** (0.05)	-0.20*** (0.03)
Δ BITs signed (Ln)	0.33** (0.15)	0.36*** (0.11)	0.10** (0.05)	0.04 (0.04)
BITs signed <sub>t-1</sub> (Ln)	0.36** (0.16)	0.39** (0.15)	0.12* (0.06)	0.01 (0.07)
Observations	146	144	687	642
Countries	16	15	58	55
R <sup>2</sup>	0.38	0.62	0.29	0.43
<i>Panel B: II Ratings</i>				
	(1)	(2)	(3)	(4)
II Rating <sub>t-1</sub>	-0.17*** (0.04)	-0.14*** (0.03)	-0.11*** (0.02)	-0.16*** (0.02)
Δ BITs signed (Ln)	0.12 (0.21)	0.02 (0.22)	0.08 (0.14)	0.05 (0.15)
BITs signed <sub>t-1</sub> (Ln)	0.89*** (0.27)	0.75*** (0.27)	0.06 (0.24)	-0.05 (0.25)
Observations	584	539	998	955
Countries	59	56	72	69
R <sup>2</sup>	0.34	0.33	0.37	0.43
<i>Panel C: Contract Intensive Money (CIM)</i>				
	(1)	(2)	(3)	(4)
CIM <sub>t-1</sub>	-0.24*** (0.03)	-0.28*** (0.05)	-0.17*** (0.02)	-0.20*** (0.02)
Δ BITs signed (Ln)	0.34 (0.23)	0.53** (0.24)	0.05 (0.17)	0.13 (0.14)
BITs signed <sub>t-1</sub> (Ln)	0.30 (0.32)	0.53* (0.31)	0.07 (0.30)	0.26 (0.18)
Observations	1900	1465	1569	1446
Countries	84	76	84	81
R <sup>2</sup>	0.17	0.22	0.14	0.19
Controls		✓		✓
Country FE	✓	✓	✓	✓
Year FE	✓	✓	✓	✓

Robust standard errors clustered at the country level in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

**Contract Intensive Money** These are shown in Panel C. As noted above, while CIM is not a measure of creditworthiness per se, it is a behavioral outcome related to economic risk. In addition, it has an extensive time and geographical coverage, and thus is a good robustness check. Once again, the results supports our expectations. We see a significant result for the autocratic sample (once we control for relevant covariates) but no significant effects emerge when analyzing the democratic sample.

Overall, the evidence confirms our predictions: BITs are associated with an enhanced economic climate in autocratic regimes and not in democratic regimes.

#### 8.4 Event Study Estimation

Capital markets are viewed as efficient with respect to public information (the “efficient market hypothesis”) – economic agents quickly adjust their expectations in the light of new information, and the effect of any informative event is quickly reflected in asset prices. If BITs improve the investment climate (at least in autocracies) improving access to foreign currency, enhancing economic activity and overall reducing default risk, we would expect BITs to increase the prices at which sovereign debt trades in the secondary debt markets.

We use an event-study methodology to assess the reaction of investors to BIT signing.<sup>28</sup> We are interested in the effects of BIT signing on the abnormal returns (in sovereign debt bond indices) in event windows after signings, using a ‘market model’ (MacKinlay 1997)

Normal returns are estimated using an event window prior to the date of signing. We start by calculating the mean cumulative return of the target bond price within a window of days prior to the BIT signing dates. (Below, we show our results for different estimation windows, starting 60 days before and up until 10 days preceding the BIT signing.) The cumulative abnormal returns (CARs) sum the abnormal returns over the event window – the number of days after the BIT signing.

---

<sup>28</sup>See MacKinlay (1997) for a review of event-study methodology and its wide applications in economics and finance.

The econometric specification is as follows:

$$CAR_{it} = \alpha + \mathbf{X}_{it} + \epsilon_{it} \quad (5)$$

where  $CAR$  represents the cumulative abnormal returns for country  $i$  over the event window  $t$ . The parameter of interest is the constant term,  $\alpha$ , which captures the impact of the event on average returns. The vector  $\mathbf{X}$  controls for standard economic and political variable, namely *Polity2*, GDP (Ln), GDP growth, and Trade (% of GDP). Finally, the error term  $\epsilon_{it}$  is allowed to be arbitrarily correlated within countries but independent otherwise. That is, we cluster standard errors at the country level.

Hypothesis 3 predicts  $\alpha > 0$  for autocratic regimes and  $\alpha = 0$  for democracies.<sup>29</sup>

**Data** We use data on sovereign debt bond indices. In particular, we rely on J.P. Morgan EMBI (Emerging Market Bond Index) Global data, which consists of U.S. dollar denominated and daily traded bond prices. These indices are constructed by measuring the price at which sovereign debt bonds are traded on secondary markets. If investors believe a nation is likely to default, its bonds trade at a discount. Changes in the value of the bond index provide a mean to measure market actors' perceptions about the likelihood of default. We use return on bonds to estimate market perceptions of default risk, that is, creditworthiness. We collect bond indices for all available developing nations, which provide us with closing index value for each trading day.

**Results** Results are shown in Table 5. Each panel displays the results for an event window: from 2 day in Panel A through 5 days in Panel D. We explore the effect of a BIT on the abnormal returns for a variety of estimation windows (for computing the normal returns). To facilitate interpretation, we split the sample between autocratic leaders and democratic countries.

The results once again strongly support our predictions. Signing a BIT has a positive and a significant impact on bond indices for debt issued by countries where autocrats rule – BITs appear to result in increased creditworthiness in autocracies. This finding is robust to different event and

---

<sup>29</sup>Nonetheless, we test it with a two-sided test.

Table 5: BITs & Cumulative Abnormal Returns

Cumulative Abnormal Returns								
<i>Estimation Window</i>								
-45 through -10		-45 through -30		-60 through -10		-60 through -30		
Aut.	Dem.	Aut.	Dem.	Aut.	Dem.	Aut.	Dem.	
<i>Panel A: 2-day Window</i>								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
BIT	0.328**	-0.062	0.140	-0.088	0.270**	-0.075	0.292**	-0.099*
(2-day window)	(0.082)	(0.051)	(0.075)	(0.071)	(0.079)	(0.048)	(0.076)	(0.058)
Observations	140	979	140	979	140	979	140	979
R <sup>2</sup>	0.62	0.35	0.70	0.22	0.66	0.32	0.60	0.22
<i>Panel B: 3-day Window</i>								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
BIT	0.379***	-0.023	0.122	-0.059	0.300**	-0.041	0.331***	-0.075
(3-day window)	(0.088)	(0.065)	(0.078)	(0.088)	(0.085)	(0.057)	(0.080)	(0.067)
Observations	140	979	140	979	140	979	140	979
R <sup>2</sup>	0.59	0.32	0.68	0.20	0.63	0.31	0.57	0.21
<i>Panel C: 4-day Window</i>								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
BIT	0.345***	-0.020	0.020	-0.066	0.245**	-0.042	0.283***	-0.085
(4-day window)	(0.080)	(0.073)	(0.068)	(0.100)	(0.075)	(0.062)	(0.070)	(0.074)
Observations	140	979	140	979	140	979	140	979
R <sup>2</sup>	0.55	0.30	0.67	0.20	0.60	0.28	0.53	0.19
<i>Panel D: 5-day Window</i>								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
BIT	0.364***	0.013	-0.026	-0.043	0.244**	-0.014	0.290***	-0.066
(5-day window)	(0.081)	(0.086)	(0.066)	(0.119)	(0.076)	(0.073)	(0.069)	(0.087)
Observations	140	979	140	979	140	979	140	979
R <sup>2</sup>	0.54	0.25	0.68	0.18	0.60	0.23	0.52	0.15
Controls	✓	✓	✓	✓	✓	✓	✓	✓

Robust standard errors clustered at the country level in parentheses. \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$   
(Standardized) Controls include: *Polity2*, GDP (Ln), GDP growth, and Trade (% of GDP), FDI inflows (Ln).

estimation windows. In contrast, when democratic leaders sign a BIT, they do not experience any improvement in bond prices.

## 9 Conclusion

A state's interactions with international institutions affects (anticipated or otherwise) the tenure of leaders in office in those states. Moreover the effect of the international organization on the survival prospects of those leaders depends on the regime type of the country.

International Monetary Fund (IMF) programs, for example, help autocratic leaders to survive but they hurt the survival of democratic leaders ([Smith and Vreeland 2006](#)). Autocratic leaders that accede to human rights treaties survive longer in office than those that do not. The international human rights treaties are associated with delaying the change of leadership in these autocracies. And, since these are the most severe abusers of human rights, there exists an association between accession to the international human rights regime and the long-term survival of these worst abusers ([Hollyer and Rosendorff 2011, 2012a](#)). The effect of trade agreements runs in the opposite direction: Trade agreements enhance the survival of democratic leaders for variety of reasons – but mainly they commit leaders to broad-based policies of lower prices and protect leaders from opportunistic special interests, as well as insuring leaders against eviction from office after external aggregate negative shocks ([Hollyer and Rosendorff 2012b](#)).

Here we have examined the effect of bilateral investment treaties on leader survival, and once again the effect of the treaty on survival is conditioned by regime type. Autocratic leader-survival is enhanced by BIT signing to a larger degree than is democratic leader-survival. And within autocracies, higher centralized, personalistic autocratic regimes (such as monarchies) gain more in terms of survival in office than more broadly based autocratic regimes (like populist, civilian dictators).

Our explanation is based on the securing of property rights. Autocracies often lack the crucial institutional structures to secure property rights – separation of powers, checks and balances, rule of law, an independent judiciary, a non-corrupt bureaucracy. These are often difficult to build domestically, and it is easier and simpler to import a set of rules and obligations from abroad that

serve a similar, property-rights protecting purpose. A treaty, enforced by third party tribunals, where firms as well as governments have standing, reduces the incentives to expropriate, and makes promises to foreigners to refrain from punitive taxation more credible. Hence autocratic leaders, eager to consolidate support among their coalition with foreign capital that complements local factors, are eager to sign BITs. Democracies are characterized by domestic institutions that function to protect property from unreasonable seizure by the state, and as such democratic leaders have less to gain from signing BITs. They sign them less frequently, and experience a much smaller bump in their survival prospects.

Three core hypotheses are offered and subjected to empirical check. BITs enhance survival more in autocracies than democracies; the effect is larger in more personalistic autocracies. We further investigate the mechanism – BITs enhances the investment climate – facilitating the distribution of rents to an autocrat’s supporting coalition. We offer several empirical checks of the claim. We consider a hazard model with and without matching. This supports the prediction that autocratic leader survival is enhanced by BIT signing. A hazard model specification on the effect of different types of autocratic regimes on the link between signing and survival, again with and without matching also confirms our predictions. The enhanced economic climate mechanism is explored empirically using an error correction model: the effect of BITs on creditworthiness (measured three different ways) is examined. Finally an event study model is used to show that BIT signings increase the returns to holding sovereign bonds, indicating an improvement in the investment climate.

Overall, the evidence strongly supports the core insight of the paper – the size of the underlying support coalition is crucial for understanding the effect of BIT signing on the investment climate and leader survival.



## A Proofs

**Lemma 1.** *The firm's optimal tax rate strategy is*

$$\tilde{t} = \begin{cases} 0 & \text{if } a > \frac{P}{R} \\ 1 & \text{otherwise} \end{cases}$$

*Proof.* If  $t \leq p \in (0, 1)$ :

$$\begin{aligned} G &= P(ak(1-t))R + tk \\ G_t &= \tilde{k} - RP'a\tilde{k} \\ &= \tilde{k} - \frac{R}{P}a\tilde{k} \\ \tilde{t} &= \begin{cases} 0 & \text{if } a > \frac{P}{R} \\ p & \text{otherwise} \end{cases} \end{aligned}$$

and if  $t \geq p \in (0, 1)$ :

$$\begin{aligned} G &= (1-\pi)P(ak(1-t))R + \pi P(ak(1-p))R + (1-\pi)tk + \pi pk \\ G_t &= (1-\pi)\tilde{k} - (1-\pi)\frac{R}{P}ak \\ \tilde{t} &= \begin{cases} p & \text{if } a > \frac{P}{R} \\ 1 & \text{otherwise} \end{cases} \end{aligned}$$

□

**Proposition 1.** *The equilibrium to the domestic protection game is  $\tilde{t} = \begin{cases} 1 & \text{if } a \leq \frac{P}{R} \\ 0 & \text{if } a > \frac{P}{R} \end{cases}$  and*

$$\tilde{x} = \frac{1}{2} \frac{1-\alpha+\pi\alpha}{(\kappa+(1-\alpha+\pi\alpha))} \text{ where } \alpha = \alpha\left(\frac{P}{R}; d\right).$$

*Proof.* From Lemma 1 we have the government's optimal strategy. Maximizing the expected profit of the firm (Equation 1) over  $s$  and  $x$ , we have

$$\begin{aligned}\frac{\partial \Pi}{\partial s} &= \psi \left( \frac{1}{2s} - \sigma \right) = 0 \\ \tilde{s} &= \frac{1}{2\sigma} \\ \frac{\partial \Pi}{\partial x} &= (\alpha - 1) \left( \kappa + 1 - \frac{1}{2x} \right) - \pi \alpha \left( \kappa + 1 - \frac{1}{2x} \right) + \alpha \kappa (\pi - 1) = 0 \\ \tilde{x} &= \frac{1}{2} \frac{1 - \alpha + \pi \alpha}{\kappa + (1 - \alpha + \pi \alpha)}\end{aligned}$$

where  $\psi = 1 - \alpha + \pi \alpha$  □

**Lemma 2.** *The investment climate rises with improvements in credibility. That is  $\psi_\pi = \frac{\partial \psi}{\partial \pi} > 0$ .*

*Proof.*  $\frac{\partial \psi}{\partial \pi} = \alpha \left( \frac{P}{R}; d \right) > 0$ . □

**Lemma 3.** *The investment climate improves with democracy. That is  $\psi_d = \frac{\partial \psi}{\partial d} > 0$ .*

*Proof.*  $\frac{\partial \psi}{\partial d} = \alpha_d (\pi - 1) > 0$ . □

**Proposition 2.** *BITs improve the investment climate by more in less accountable polities:  $\frac{\partial \psi_\pi}{\partial d} < 0$ .*

*Proof.*  $\frac{\partial \psi_\pi}{\partial d} = \alpha_d < 0$  □

**Proposition 3.** *Leader survival is enhanced by BIT signing. That is  $\frac{dEPr\{survival\}}{d\pi} > 0$ .*

*Proof.* Ex ante expected probability of survival before  $a$  is revealed is

$$\begin{aligned}EPr\{survival\} &= \left( 1 - \alpha \left( \frac{P}{R} \right) \right) EP(ak)R + \alpha \left( \frac{P}{R} \right) [\pi EP(ak(1-p))R] \\ &= \left( 1 - \alpha \left( \frac{P}{R} \right) \right) \bar{a}k \frac{R}{P} + \alpha \left( \frac{P}{R} \right) \left[ \pi (\underline{a}k(1-p)) \frac{R}{P} \right] \\ \frac{dEPr\{survival\}}{d\pi} &= \left( 1 - \alpha \left( \frac{P}{R} \right) \right) \bar{a}k' \frac{R}{P} + \alpha \left( \frac{P}{R} \right) \left[ (\underline{a}k(1-p)) \frac{R}{P} + \pi (\underline{a}k'(1-p)) \frac{R}{P} \right] \\ &= \left( 1 - \alpha \left( \frac{P}{R} \right) \right) \bar{a}k' \frac{R}{P} + \alpha \left( \frac{P}{R} \right) \pi (\underline{a}k'(1-p)) \frac{R}{P} + \alpha \left( \frac{P}{R} \right) \left[ (\underline{a}k(1-p)) \frac{R}{P} \right] \\ &= \frac{R}{P} [(1 - \alpha) \bar{a}k' + \alpha \pi \underline{a}k'(1-p) + \alpha \underline{a}k(1-p)] > 0\end{aligned}$$

Where  $\bar{a} = \int_{\frac{P}{R}}^{\infty} a \, d\alpha(a; d)$ ,  $\underline{a} = \int_0^{\frac{P}{R}} a \, d\alpha(a; d)$ ,  $\alpha = \alpha\left(\frac{P}{R}\right)$ . □

**Proposition 4.** For BITs that have sufficiently strong enforcement regimes ( $\pi^{BIT} > \frac{1}{3}$ ), for  $d \approx P/R$ , leader survival is enhanced by BIT signing by more in less accountable polities. That is

$$\lim_{d \rightarrow \frac{P}{R}} \frac{\partial}{\partial d} \frac{dEPr\{survival\}}{d\pi} < 0$$

*Proof.* Note that  $\alpha\left(\frac{P}{R}\right) = \frac{P}{Rd}$ ,  $\underline{a} = \frac{P}{2Rd} = \frac{\alpha}{2}$ ,  $\bar{a} = \frac{1}{2}\left(1 - \frac{P}{Rd}\right) = \frac{1}{2}(1 - \alpha)$ .

$$\begin{aligned} \frac{\partial}{\partial d} \frac{dEPr\{survival\}}{d\pi} &= \frac{\partial}{\partial d} \left[ \frac{R}{P} \left[ (1 - \alpha) \bar{a} k' + \alpha \pi \underline{a} k'(1 - p) + \alpha \underline{a} k(1 - p) \right] \right] \\ &= \frac{\partial}{\partial d} \left[ \frac{R}{P} \left[ (1 - \alpha)^2 \frac{1}{2} k' + \alpha^2 \pi \frac{1}{2} k'(1 - p) + \alpha^2 \frac{1}{2} k(1 - p) \right] \right] \\ &= \frac{R}{2P} \left[ \frac{\partial}{\partial d} \left[ k' \left( (1 - \alpha)^2 + \alpha^2 \pi (1 - p) \right) + \alpha^2 k(1 - p) \right] \right] \\ &= \frac{R}{2P} \left[ k'_d \left( (1 - \alpha)^2 + \alpha^2 \pi (1 - p) \right) + k' \left( -2\alpha_d (1 - \alpha) + 2\alpha \alpha_d \pi (1 - p) \right) \right] \\ &\quad + (2\alpha \alpha_d k + \alpha^2 k_d)(1 - p) \end{aligned}$$

Now

$$\lim_{\alpha \rightarrow 1} \frac{\partial}{\partial d} \frac{dEPr\{survival\}}{d\pi} = \frac{R}{2P} \left[ k'_d \pi (1 - p) + k' 2\alpha_d \pi (1 - p) + (2\alpha_d k + k_d)(1 - p) \right]$$

Now  $k' = \frac{\kappa \alpha}{(\kappa + \Psi)^2} > 0$ ;  $k_d = \frac{\kappa \alpha_d}{(\kappa + \Psi)^2} (\pi - 1) > 0$ ;  $k'_d < 0$ .

Then a sufficient condition for  $\lim_{\alpha \rightarrow 1} \frac{\partial}{\partial d} \frac{dEPr\{survival\}}{d\pi} < 0$  is that  $2\alpha_d k + k_d < 0$

$$\begin{aligned} 2\alpha_d k + k_d &= 2\alpha_d \frac{\Psi}{\kappa + \Psi} + \frac{\kappa \alpha_d}{(\kappa + \Psi)^2} (\pi - 1) \\ &= \frac{\alpha_d}{(\kappa + \Psi)^2} [2\Psi(\kappa + \Psi) + \kappa(\pi - 1)] \\ &= \frac{\alpha_d}{(\kappa + \pi)^2} [2\pi(\kappa + \pi) + \kappa(\pi - 1)] \\ &= \frac{\alpha_d}{(\kappa + \pi)^2} [3\pi\kappa + 2\pi^2 - \kappa] \end{aligned}$$

Sufficient condition is  $\kappa > \frac{-2\pi^2}{3\pi - 1}$  or  $\pi > \frac{1}{3}$ . □

## References

- Acemoglu, Daron, Simon Johnson, and James A. Robinson. 2001. "The Colonial Origins of Comparative Development: An Empirical Investigation." *The American Economic Review* 91 (5): 1369–1401.
- Afonso, Antonia. 2003. "Understanding the Determinants of Government Debt Ratings: Evidence for the Two Leading Agencies." *Journal of Economics and Finance* 27 (1): 56–74.
- Allee, Todd, and Clint Peinhardt. 2014. "Evaluating Three Explanations for the Design of Bilateral Investment Treaties." *World Politics* 66 (1): 47–87.
- Archer, Candace C., Glen Biglaiser, and Karl DeRouen Jr. 2008. "Sovereign Bonds and the "Democratic Advantage": Does Regime Type Affect Credit Rating Agency Ratings in the Developing World?" *International Organization* 61 (2): 342–365.
- Arias, Eric. 2015. "Patronage by Credit: International Sources of Patronage Spending in Developing Countries." Working Paper. <http://wp.nyu.edu/ericarias/wp-content/uploads/sites/641/2015/10/AriasPatronage.pdf>.
- Baccini, Leonardo, and Johannes Urpelainen. 2014. "International Institutions and Domestic Politics: Can Preferential Trading Agreements Help Leaders Promote Economic Reform?" *The Journal of Politics* 76 (1).
- Baccini, Leonardo, and Johannes Urpelainen. 2015. *Cutting the Gordian Knot of Economic Reform: When and How International Institutions Help*. Oxford University Press.
- Box-Steffensmeier, J. M., and Bradford S. Jones. 2004. *Event History Modeling: A Guide for Social Scientists*. Cambridge University Press.
- Box-Steffensmeier, Janet M., and Christopher J. W. Zorn. 2001. "Duration Models and Proportional Hazards in Political Science." *American Journal of Political Science* 45 (4): 972–988.
- Bueno De Mesquita, Bruce, and Alastair Smith. 2010. "Leader Survival, Revolutions, and the Nature of Government Finance." *American Journal of Political Science* 54 (4): 936–950.
- Bueno De Mesquita, Bruce, James D. Morrow, Alastair Smith, and Randolph M. Siverson. 2004. *The Logic of Political Survival*. The MIT Press.
- Büthe, Tim, and Helen Milner. 2009. "Bilateral Investment Treaties and Foreign Direct Investment: A Political Analysis." In *The Effect of Treaties on Foreign Direct Investment: Bilateral Investment Treaties, Double Taxation Treaties, and Investment Flows*, ed. Karl P. Sauvant, and Lisa E. Sachs. New York, NY: Oxford University Press.
- Büthe, Tim, and Helen V. Milner. 2014. "Foreign Direct Investment and Institutional Diversity in Trade Agreements: Credibility, Commitment, and Economic Flows in the Developing World, 1971–2007." *World Politics* 66 (1): 88–122.
- Cheibub, Jose A., Jennifer Gandhi, and James Raymond Vreeland. 2010. "Democracy and Dictatorship Revisited." *Public Choice* 143 (1-2): 67–101.

- Clague, Christopher, Philip Keefer, Stephen Knack, and Mancur Olson. 1996. "Property and Contract Rights in Autocracies and Democracies." *Journal of Economic Growth* 1 (2): 243–276.
- D'Ambrosio, Mary. 2005. "A less risky world?" *Institutional Investor* 30 (9): 143–160.
- De Boef, Suzanna, and Luke Keele. 2008. "Taking Time Seriously." *American Journal of Political Science* 52 (1): 184–200.
- DiGiuseppe, Matthew, and Patrick E. Shea. 2015a. "Borrowed Time: Sovereign Finance, Regime Type and Leader Survival." Working Paper.
- DiGiuseppe, Matthew, and Patrick E. Shea. 2015b. "Sovereign Credit and the Fate of Leaders: Reassessing the "Democratic Advantage"." *International Studies Quarterly* .
- DiGiuseppe, Matthew R., Colin M. Barry, and Richard W. Frank. 2012. "Good for the money: International finance, state capacity, and internal armed conflict." *Journal of Peace Research* 49 (3): 391–405.
- Dixit, Avinash. 2011. "International Trade, Foreign Direct Investment, and Security." *Annual Review of Economics* 3: 191–213.
- Dreher, Axel, and Stefan Voigt. 2011. "Does membership in international organizations increase governments' credibility? Testing the effects of delegating powers." *Journal of Comparative Economics* 39: 326–348.
- Dür, Andreas, L. Baccini, and Manfred Elsig. 2014. "The Design of International Trade Agreements: Introducing a New Database." *Review of International Organizations* .
- Elkins, Zachary, Andrew T. Guzman, and Beth A. Simmons. 2006. "Competing for Capital." *International Organization* 60: 811–846.
- Fernandez, Raquel, and Dani Rodrik. 1991. "Resistance to Reform: Status Quo Bias in the Presence of Individual Specific Uncertainty." *American Economic Review* 81 (5): 1146–1155.
- Gallagher, Kevin P., and Melissa B. L. Birch. 2006. "Do Investment agreements attract investment? Evidence from Latin America." *Journal of World Investment and Trade* 7 (6): 961–973.
- Gehlbach, Scott, and P. Keefer. 2011. "Investment without democracy: Ruling-party institutionalization and credible commitment in autocracies." *Journal of Comparative Economics* 39: 123–139.
- Gehlbach, Scott, and P. Keefer. 2012. "Private Investment and the Institutionalization of Collective Action in Autocracies: Ruling Parties and Legislatures." *Journal of Politics* 74 (2): 621–635.
- Goemans, Henk E., Kristian S. Gleditsch, and Giacomo Chioza. 2009. "Introducing Archigos: A Dataset of Political Leaders." *Journal of Peace Research* 46 (2): 269–283.
- Gray, Julia. 2009. "International Organization as a Seal of Approval: European Union Accession and Investor Risk." *American Journal of Political Science* 53 (4): 931–949.
- Grossman, Gene M., and Elhanan Helpman. 1994. "Protection for Sale." *American Economic Review* 84 (4): 833–50.

- Haftel, Yoram Z. 2010. "Ratification Counts: US Investment Treaties and FDI Flows into Developing Countries." *Review of International Political Economy* 17 (2): 348–377.
- Hollyer, J. R., B. P. Rosendorff, and J. R. Vreeland. 2014. "Why do Autocrats Disclose?" Working Paper. <http://ssrn.com/abstract=2452480>.
- Hollyer, James R., and B. Peter Rosendorff. 2011. "Why Do Authoritarian Regimes Sign the Convention Against Torture? Signaling, Domestic Politics and Non-Compliance." *Quarterly Journal of Political Science* 6 (3-4): 275–327.
- Hollyer, James R., and B. Peter Rosendorff. 2012a. "Do Human Rights Agreements Prolong the Tenure of Autocratic Ratifiers?" *Journal of International Law and Politics* 44 (3): 791–811.
- Hollyer, James R., and B. Peter Rosendorff. 2012b. "Leadership Survival, Regime Type, Policy Uncertainty and PTA Accession." *International Studies Quarterly* .
- Jandhyala, Srividya, Witold J. Henisz, and Edward D. Mansfield. 2011. "Three Waves of BITs: The Global Diffusion of Foreign Investment Policy." *Journal of Conflict Studies* 55 (6): 1047–1073.
- Jensen, N. M., E. Malesky, and S. Weymouth. 2014. "Unbundling the Relationship between Authoritarian Legislatures and Political Risk." *British Journal of Political Science* 44 (3): 655–684.
- Jensen, Nathan M. 2003. "Democratic Governance and Multinational Corporations: Political Regimes and Inflows of Foreign Direct Investment." *International Organization* 57 (3): 587–616.
- Keefer, P., and Razvan Vlaicu. 2008. "Democracy, Credibility, and Clientelism." *Journal of Law, Economics, and Organization* 24 (2): 371–406.
- Kerner, Andrew. 2009. "Why Should I Believe You? The Costs and Consequences of Bilateral Investment Treaties." *International Studies Quarterly* 53 (1): 73–102.
- Li, Quan, and Adam Resnick. 2003. "Reversal of Fortunes: Democratic Institutions and Foreign Direct Investment Inflows to Developing Countries." *International Organization* 57 (1): 175–211.
- MacKinlay, A. Craig. 1997. "Event Studies in Economics and Finance." *Journal of Economic Literature* 35: 13–39.
- Mansfield, Edward D., and Helen V. Milner. 2012. *Votes, Vetoes, and the Political Economy of International Trade Agreements*. Cambridge University Press.
- Mansfield, Edward D., Helen V. Milner, and B. Peter Rosendorff. 2000. "Free to Trade: Democracies, Autocracies and International Trade." *American Political Science Review* 94 (2): 305–322.
- Mansfield, Edward D., Helen V. Milner, and B. Peter Rosendorff. 2002. "Why Democracies Cooperate More: Electoral Control and International Trade Agreements." *International Organization* 56 (3): 477–514.
- Marshall, Monty G., T. R. Gurr, and K. Jagers. 2013. *Polity IV Project. Political Regime Characteristics and Transitions, 1800-2013. Dataset Users Manual*.
- Martin, Lisa. 2000. *Democratic Commitments: legislatures and International Cooperation*. Princeton University Press.

- Miller, Michael K. 2012. "Economic Development, Violent Leader Removal, and Democratization." *American Journal of Political Science* 56 (4): 1002–1020.
- Milner, Helen V. 2014. "Introduction: The Global Economy, FDI, and the Regime for Investment." *World Politics* 66 (1): 1–11.
- North, Douglass C., and Barry R. Weingast. 1989. "Constitutions and Commitment: The Evolution of Institutions Governing Public Choice in Seventeenth-Century England." *Journal of Economic History* 69: 803–32.
- Pelc, K. J. 2016. "Does the International Investment Regime Induce Frivolous Litigation?" Working Paper.
- Pelc, Krzysztof J., and Johannes Urpelainen. 2015. "When do international economic agreements allow countries to pay to breach?" *Review of International Organizations* 10: 231–264.
- Pinto, Pablo M. 2013. *Partisan Investment in the Global Economy: why the Left loves foreign investment, and FDI loves the Left*. Cambridge University Press.
- Pinto, Pablo M., and Santiago M. Pinto. 2008. "The Politics Of Investment Partisanship: And The Sectoral Allocation of Foreign Direct Investment." *Economics & Politics* 20 (2): 216–254.
- Rosendorff, B. Peter. 1996. "Voluntary Export Restraints, Antidumping Procedure and Domestic Politics." *American Economic Review* 86 (3): 544–561.
- Rosendorff, B. Peter, and Kongjoo Shin. 2012. "Importing Transparency: The Political Economy of BITs and FDI Flows." Working Paper. <http://wp.nyu.edu/faculty-rosendorff/wp-content/uploads/sites/1510/2015/03/RosendorffShinAPSA2012.pdf>.
- Rosendorff, B. Peter, and Kongjoo Shin. 2015. "Regime Type and International Commercial Agreements." *International Journal of Economic Theory* 107–119 (1): 107–119.
- Ross, Michael L. 2013. "Oil and Gas Data, 1932-2011."
- Salacuse, Jeswald W., and Nicholas P. Sullivan. 2005. "Do BITs really work? An evaluation of bilateral investment treaties and their grand bargain." *Harvard International Law Journal* 46 (1): 67–130.
- Simmons, Beth A. 2014. "Bargaining over BITs, Arbitrating Awards: The Regime for Protection and Promotion of International Investment." *World Politics* 66 (1): 12–46.
- Simmons, Beth A., and Daniel J. Hopkins. 2005. "The Constraining Power of International Treaties: Theory and Methods." *American Political Science Review* 99 (4): 623–631.
- Smith, Alastair, and James Raymond Vreeland. 2006. "The Survival of Political Leaders and IMF Programs." In *Globalization and the Nation State: The Impact of the IMF and the World Bank*, ed. Stephen Kosack, Gustav Ranis, and James Raymond Vreeland. New York: Routledge.
- Steinberg, David A., and Krishan Malhotra. 2014. "The Effect of Authoritarian Regime Type on Exchange Rate Policy." *World Politics* 66 (3): 491–529.

- Tobin, Jennifer L., and Marc L. Busch. 2010. "A BIT is Better Than a Lot: Bilateral Investment Treaties and Preferential Trade Agreements." *World Politics* 62 (1): 1–42.
- Tobin, Jennifer, and Susan Rose-Ackerman. 2005. "Foreign direct investment and the business environment in developing countries: The impact of bilateral investment treaties." *Yale Law and Economics Research Paper Series* (293).
- Tomashevskiy, Andrey. 2012. "Investing In Violence: Foreign Direct Investment and Coups in Authoritarian States." Working Paper. <http://wpsa.research.pdx.edu/meet/2012/tomashevskiy.pdf>.
- Tomashevskiy, Andrey, and Daniel Yuichi Kono. 2015. "Extra Credit: Preferential Trade Agreements and Credit Ratings." *International Studies Quarterly* .
- UNCTAD. 2000. *Bilateral Investment Treaties 1959 -1999*. United Nations.
- Vandavelde, Kenneth J., Victoria Aranda, and Zbigniew Zimmy. 1998. *Bilateral Investment Treaties in the Mid-1990s*. New York - Geneva: UNCTAD.
- von Stein, Jana. 2005. "Do Treaties Constrain or Screen? Selection Bias and Treaty Compliance." *The American Political Science Review* 99 (4): 611–622.