

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

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## Abstract

Capital accumulation 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 takings. Autocratic governments are more cooperative than their autocratic counterparts when it comes to BITs and the international investment regime. We offer an explanation for why this might be the case: International institutions substitute for poor domestic investment environments. Hence, autocratic countries and leaders have the most to gain from signing BITs. Survival models show that BITs enhance leader survival by more in autocracies than democracies, and that institutionalized autocratic leaders have less to gain in terms of survival from BITs signing than do dictators with narrow bases of support. Using credit-worthiness scores and event-studies, we show that BIT signing improves the domestic investment climate, particularly in autocratic states.

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# Introduction

While much is known about the determinants of international economic agreements, the fact that non-democracies are more cooperative than democracies in the international investment regime remains a puzzle. For instance, up until 2010, the average autocrat has been the target of less than one investment treaty claim, while democracies averaged almost three 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 (Poulsen and Aisbett 2013). 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, autocracies have been largely absent from these controversies (Pelc 2017). Autocratic leaders commit to the international investment regime more readily than their counterparts in democratic countries by, for instance, more frequently entering into bilateral investment treaties (BITs) (Rosendorff and Shin 2015) as well as seemingly complying more with them.<sup>1</sup>

This pattern of autocratic cooperation stands in contrast to the literature on the cooperative nature of democracies in the international arena (e.g., Bueno de Mesquita et al. 1999, Mansfield, Milner, and Rosendorff 2000, 2002, Martin 2000). It is more puzzling still given arguments that democratic and inclusive institutions lead to enhanced property rights protections for both domestic (Acemoglu, Johnson, and Robinson 2001, North and Weingast 1989) and foreign investors (Jensen 2003, 2006).<sup>2</sup> These theories would seem to posit that democracies are less likely than autocracies to violate the provisions of international investment agreements, hence they should be more willing than autocracies to enter into these agreements in the first place (Downs, Rocke, and Barsoom 1996).

We argue that this seeming paradox can be resolved if the international investment regime is viewed as a substitute for inclusive domestic institutions. From the perspective of an investor,

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<sup>1</sup>Table B1 shows systematic evidence supporting this claim. Note, however, that many of these investment claims are frivolous in nature (Pelc 2017).

<sup>2</sup>Though Graham, Johnston, and Kingsley (forthcoming) note that the marginal effect of democratically constrained domestic institutions is smaller for forms of takings (e.g., transfer risk) that do not involve the wholesale expropriation of investors.

both domestic and international institutions serve the same ends: stronger protections of property rights. Consider the perspective of an investor, who is uncertain of the prospect that an investment opportunity will be subject to politically motivated takings. The investor can, however, observe domestic political institutions. If these are democratic, she might conclude that the risk of takings is small. Should this democracy sign a BIT, this risk might fall further still, but any decline in risk will be slight. In contrast, if the regime is autocratic, the investor might conclude the risk of takings is high. Should the autocracy tie its hands by signing a BIT, however, this risk will fall significantly. Since the BIT has a larger effect on risk in autocracies, it will also have a larger effect on investment inflows (for evidence of this relationship, see [Rosendorff and Shin 2012](#)).

If the economic effect of BITs is larger in autocracies, autocrats face particularly strong incentives to enter into these treaties. They can enjoy the economic benefits of investment without incurring the costs of building domestic institutional protections for property rights. Domestic institutions are particularly ‘sticky,’ and domestic institutional change requires relinquishing or reallocating power by or among members of the elite. Hence the possibility of importing credibility through international agreements is likely to be attractive. Domestic and international institutions act as substitutes and it is precisely those states that are least likely to be compliant with the international investment regime *ex ante* (i.e., autocracies) who are most likely to sign, turning the canonical logic of [Downs, Rocke, and Barsoom \(1996\)](#) on its head.

BITs credibly commit host governments to minimizing arbitrary and capricious policy shifts, punitive tax rates and outright expropriation, thus providing clear limits on policy-choices and predictable procedures for policy changes. 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 ([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.

We present a formal model of the interaction between a leader and a multinational firm, and show that as the risk of takings 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 –if any– is much more modest in polities with stronger domestic property rights regimes. As such, the economic effects of BITs are largest in autocracies.

We then extend this logic to assess the effect of BITs on leader survival. Leaders survive in office more readily, both in democracies and autocracies, if the economy is performing well (e.g., [Duch and Stevenson 2008](#)). In autocracies, capital formation enhances economic performance which disproportionately benefits those affiliated with the regime leadership ([Bueno de Mesquita et al. 2004](#), [Pinto and Zhu 2016](#), [Zhu 2017](#)). FDI enables autocratic leaders to buy off elites, decreasing a coup threat and increasing leader survival ([Bak and Moon 2016](#), [Tomashevskiy 2017](#)). For example, leaders can require that international investors establish joint ventures, typically with established domestic elites or require 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.<sup>3</sup> Overall, to the extent that foreign investment improves the economy, it also enhances the stability of the regime in power ([Miller 2012](#)). Consequently, the probability of leadership survival increases in BITs signing, and this benefit is greater for autocratic leaders.

We find substantial empirical evidence that BITs enhance leader survival, and by more in autocracies than democracies. We also test a novel underlying mechanism, namely 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.

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<sup>3</sup>Prominent anecdotal examples of this are 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, underscoring the way in which foreign investment can selectively benefit ruling officials under autocratic rule.

# 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 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>4</sup> Moreover, institutional structures that fail to adequately reign in the extractive power of the state have a tendency 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 regulate international interactions. They generate focal points, coordinate expectations, reduce incomplete information, offer commitment devices, and act as a check on an autocrat's arbitrary power ([Myerson 2008](#)).

Bilateral investment treaties (BITs) are international legal instruments signed between states that govern the rights and obligations of states that host foreign capital within their jurisdictions. BITs 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. The innovation that has given the BITs their bite is that both investor-state and state-state disputes can be brought before

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<sup>4</sup>In contrast, strong democratic institutions —specifically, their property rights protection— are associated with higher investment ([Jensen 2003, Li and Resnick 2003](#)).

an international tribunal for adjudication, such as the World Bank Group’s International Center for the Settlement of International Disputes (ICSID), or the International Chamber of Commerce (ICC). A decision to sign a BIT effectively imports a more credible system for limiting the state’s capacity for uncompensated takings.

We take as our premise that leaders choose policy in order to enhance their political support, and to improve their prospects for 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, a group that may be smaller (as in autocracies) or larger (as in democracies).

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 taking (regulatory or otherwise) of foreign capital. Workers in a capital poor democracy may apply electoral pressure to their leaders to encourage (labor-complementing) foreign capital to invest domestically, thereby increasing their marginal product and hence their wage (Pinto and Pinto 2008, Pinto 2013). Democracy (or at least politics with larger “winning coalitions”) reduces the likelihood of unfair “takings” – reassuring capital owners that domestic labor will punish leaders at election time if they tax foreign capital excessively.<sup>5</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 BITs small, if any at all.

Autocrats have far fewer domestic institutional constraints that limit the reach of the grabbing

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<sup>5</sup>A potential caveat: new democracies sometimes have trouble making credible commitments (Keefer and Vlaicu 2008).

hand.<sup>6</sup> Yet, as with democracies, autocratic leaders also have reason to be concerned with levels of economic growth. This might be because poor economic performance leads to generalized dissatisfaction among the populace, raising the risk of popular revolt and possible democratization (Przeworski et al. 2000). Or it may be that economic under-performance limits the number of resources that can be distributed as rents to regime elites, raising the risk of coup (Bak and Moon 2016). For some autocracies, and at some points of time, the marginal benefit from increasing takings exceeds that from promoting foreign investment. For other autocracies, or at other points of time, the reverse holds true. Critically, foreign investors struggle to discern authoritarian governments' preferences – these are not directly observable from the institutional features of the regime.

BITs, however, serve as a readily observable means for a government – whether autocratic or democratic – to commit to respect foreign investors' property rights – or properly compensate otherwise. If investors believe there is significant risk of expropriation, the signing of a BIT allows those beliefs to be updated, leading to a concomitant rise in investment. Beliefs are modified most with regard to autocracies, which investors perceive as high risk environments.

In our theoretical model below, we treat capital inflows as boosting social welfare, and increases in social welfare as stabilizing to the government (e.g., Alfaro et al. 2010, Miller 2012). BITs have the largest effect on investor expectations with regard to *autocracies*. Consequently, we expect that it has the largest effect on *autocratic* leader survival.

Capital inflows might also boost government survival in other ways, particularly in autocracies. FDI may be sufficiently steerable that profits from such investment act directly as rents to winning coalition members – for instance, foreign investors felt constrained to enter into business arrangements with the family members of higher-ups in the Chinese Communist Party or of Indonesian dictator Suharto. To the extent these latter effects hold, our contention that BITs reduce autocratic leader's hazard of removal is further strengthened (Bak and Moon 2016, Pinto and Zhu 2016, Zhu 2017).

We do not mean to argue that a BIT is the only way for a target country to convey an enhanced

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<sup>6</sup>Autocrats might have *carte blanche* to create domestic institutions that limit the grabbing hand. Such gambits are rarely credible, for the power to create rules comes with the power to rewrite them.

commitment to property rights. States can take other measures to build trust – e.g., they can avoid egregious conduct, they could offer joint ventures with local firms, so that any taking would harm local interests, or bring in to the projects the international public agencies such as the World Bank. States could also make use of investment clauses in trade agreements or other international legal devices. So as Poulsen (2015) argues, BITs are not “the only instruments that could ‘tie governments to the mast’ of international law (p. 7);” rather BITs offer a more high-powered set of incentives than these alternatives. Responding to these higher-powered incentives, we would be more likely to see (perhaps additional) effects.<sup>7</sup>

If BITs are good for FDI, it seems natural to explore whether BITs enhance leader survival, and more so, try to better understand the underlying mechanisms.

## 2 Theory

We consider a game between a home firm that exports capital to a host and the host government that chooses a tax rate on the exported capital. The firm decides whether or not to export a fixed amount of capital to the host,  $k = \{0, K\}$ . If  $k = K$ , the firm then employs labor  $L$  in the host to produce an intermediate good  $X$  according to a fixed proportions production function,  $X = \min\{K, L\}$ . The firm then brings the  $X$  it produced back home, and uses  $X$  as an input into the production of a final good,  $F(X)$  which it sells at a constant unitary price.<sup>8</sup> We choose the units of labor such that the wage is also set at 1, and is constant. The cost of a unit of capital is  $\kappa$ , and  $F'(\cdot) > 0, F''(\cdot) < 0$ .

The host government applies a tax  $t$  on every unit of capital that is employed. We model this in the “iceberg” form: 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  $\kappa > 0$  for each unit of capital it ships.

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<sup>7</sup>See also Mazumder (2016).

<sup>8</sup>Alternatively, one can interpret this as a model of horizontal rather than vertical FDI: the firm takes the finished good  $X$  and combines it with transportation and other distribution services (the function  $F(\cdot)$ ) to sell the good on world markets.



## 2.1 Profit of firms

Profit for the firm is

$$\Pi(k) = \begin{cases} F(\min\{(1-t)K, L\}) - \kappa K - L & \text{if firm enters, } k = K \\ 0 & \text{if no entry, } k = 0 \end{cases}$$

Note that the firm must still pay the rental rate on the capital that is taxed away and no longer available for production (if it enters the foreign market). 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 unitary wage, social welfare is simply the number of workers employed,  $L$ . The political support received by the government (perhaps the probability of reelection),  $R$  is a linear function of social welfare  $L$ , with  $R'(\cdot) = r > 0$ , a constant. Moreover there is some exogenous benefit to holding office,  $B$ ; 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 (weighted by  $a \in \mathbb{R}_+$  which is defined below), the host government receives private benefits from taxing capital,  $tK$ . Government utility then is

$$G(t; a) = \begin{cases} aR(L)B + tK & \text{if firm enters} \\ 0 & \text{if no entry} \end{cases}$$

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>9</sup> This policy choice 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 cumulative distribution of  $a$  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>10</sup> More democratic states mean that the draw of higher values of  $a$  are more likely than in less democratic states.

### 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 such behavior and enforce a tax rate

<sup>9</sup>Grossman and Helpman (1994), Rosendorff (1996).

<sup>10</sup>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  $d$ .

of  $p$  rather than  $t$ . We assume no problem of enforcement of an institutional finding.<sup>11</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, production occurs and game ends.

## 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. If the firm enters it sets  $X = (1 - t)K = L$  (by profit maximization of a Leontieff production function), and therefore will enter if  $\Pi(K) = F((1 - t)K) - (1 - t + \kappa)K > 0$ . Entry is assured at  $t = 0$  and entry is deterred at  $t = 1$ .

We can now write a complete specification for the host government's expected utility taking into account the firm's behavior, the institutional rules, and the probability the state is overruled if it expropriates, given that the host state has observed  $a$ , the domestic political weight on social

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<sup>11</sup>Alternatively may consider  $\pi$  as the combined probability of both violation finding, and compliance by the host state with the ruling.

welfare  $a$  it faces:

$$G(t; a) = \begin{cases} aR((1-t)K)B + tk & \text{if } t \leq p, k = K \\ (1-\pi)[aR(K(1-t))B + tK] + \pi[aR(K(1-p))B + pK] & \text{if } t > p, k = K \\ 0 & \text{if } k = 0 \end{cases}$$

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  $k$  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  $a$ . Recall that the linearity of  $R(\cdot)$  implies  $R'(\cdot) = r$ , a positive constant.

**Lemma 1.** *The government's optimal tax rate strategy (when the foreign firm enters) is*

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

If nature draws a type of host leader that puts large amounts of weight on social welfare,  $a > \frac{1}{rB}$ , 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>12</sup>

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<sup>12</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 simple, however.

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

$$\begin{aligned} E\Pi &= (1 - \alpha) [F(K) - \kappa K - K] \\ &\quad + \alpha [(1 - \pi)[- \kappa K] + \pi [F((1 - p)K) - \kappa K - K(1 - p)]] \\ &= (1 - \alpha)F(K) + \alpha\pi F((1 - p)K) - K(1 - \alpha + \alpha\pi(1 - p) + \kappa) \end{aligned} \quad (1)$$

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

$$\tilde{k} = \begin{cases} K & \text{if } (1 - \alpha)F(K) + \alpha\pi F((1 - p)K) \geq K(1 - \alpha + \alpha\pi(1 - p) + \kappa) \\ 0 & \text{otherwise} \end{cases}$$

Proofs are in the Appendix. Notice that while  $\pi$  is the exogenous probability of property rights enforcement after expropriation,  $\psi(\pi, d) \equiv 1 - \alpha(\frac{1}{rB}; d) + \pi\alpha(\frac{1}{rB}; d)(1 - p)$  (which appears in the cost term of the investment decision in Equation (1)) 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:  $\psi(\pi, d) = 1 - \alpha(\frac{1}{rB}; d) + \pi\alpha(\frac{1}{rB}; d)(1 - p)$ . It is somewhat trivial to see that as the strength of the property rights enhancing institutions rises ( $\pi$  rises) so does 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 following lemma:

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

### 3.1 A BIT Enhances the Investment Climate

For analytic clarity, we treat the signing of a BIT as **exogenous** in this model. **Rosendorff and Shin (2015)** construct a related model that does examine the decision to sign a BIT, and which finds that autocratic governments are, *ceteris paribus*, more willing enter into these treaties. The effects which we document here – that autocratic leaders enjoy a disproportional benefit to survival from BIT entry – further reinforce this logic. Autocracies are more likely to select into BIT signing.

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  $\pi^{BIT} > \pi$ . We interpret the stronger credibility of the international arbitrator as a substitute for a less reliable, credible or transparent domestic investment climate.<sup>13</sup> 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 on 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  $1/rB$ ; 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:  $\frac{\partial \psi_\pi}{\partial d} < 0$ .*

We empirically test Corollary 1 and Proposition 2 below.

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<sup>13</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 Political Support and Leader Survival

Our primary concern is the effect of a BIT on *leader survival* and its differential effects across regime types. Propositions 3 and 4 describe our model’s predictions with regard to these terms.

Signing a BIT improves the investment climate, which has the effect of enhancing the willingness of foreign firms to invest in the host country.<sup>14</sup> Increased investment (in expectation) leads to more domestic employment of labor and higher social welfare, which in turn enhances the political support received by the leader, and increases the probability of leader survival.

**Proposition 3.** *Political support (in expectation) is enhanced by BIT signing. That is  $\frac{dER}{d\pi} > 0$ .*

This effect is larger in less democratic polities. As outlined in Proposition 2, the signing of a BIT improves the investment climate most in the least democratic regimes (where  $d$  is low). This improvement leads to greater inward FDI flows, enhancing social welfare and stabilizing the regime.

Because BITs’ effect on the investment climate is greatest in the least accountable regimes, so too is their effect on leader survival. BITs increase leader survival, and have the largest marginal effect on survival in autocratic polities.

**Proposition 4.** *Political support is enhanced by BIT signing by more in less accountable polities.*

*That is  $\frac{\partial}{\partial d} \frac{dER}{d\pi} < 0$*

Propositions 3 and 4 motivate the core of our empirical investigation. We model the hazard of leader removal as a function of democracy, BIT signings, and their interaction. Proposition 3 tells us that the coefficient on BIT signings should be negative – leaders face a lower hazard of removal if they sign a BIT. Proposition 4 tells us that the coefficient on the interaction term should be positive. Investment treaties reduce the hazard of leader removal by more in autocratic, and less in democratic, countries.

In the empirical sections that follow, we also test the mediating mechanisms underpinning our theory. Recall that our model anticipates that BITs improve leader survival (diminish leader

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<sup>14</sup>Note that signing a BIT doesn’t change the host state’s behavior – it still sets the takings at 0 or 1 depending on whether the draw of the random variable  $a$  lies above or below  $1/rB$ . The effect of the BIT on the firm’s willingness to invest emerges from the change in the probability of any takings being reversed by the investment court. This is consistent with the observation made by Poulsen (2015) and others related ISDS trends, that there is no discernible change in observed state behavior before and after signing BITs.

hazards) by virtue of their effect on improving the investment climate, as stated in Corollary 1. Moreover, the effect of BITs on the investment climate is greatest in autocratic regimes, following Proposition 2. We employ a variety of measures of the investment climate – sovereign credit ratings, capital intensive money in circulation, and sovereign bond returns – and test the relationship between these measures, BIT signings, democracy, and the BIT signing-democracy interaction. Our model tells us that BIT signings should improve these measures of the investment climate, and should have the largest effect in non-democracies.

## 5 Empirics: BITs, Leader Survival and Regime Type

A cursory examination of the data offers some initial confidence in our claim. Autocratic leaders 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. Since we aim to isolate the behavior of a given leader, we focus on BITs signed, but results are robust to use BITs in force instead.

### 5.1 Data

Leader survival data is drawn from Archigos.<sup>15</sup> The unit of analysis 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>16</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.<sup>17</sup>

Our main regressor of interest is  $\log(\text{BITs signed} + 1)$ , a logarithmic transformation of the number of BITs signed by a given leader between the time a given leader takes office and year  $t$ .<sup>18</sup> Our measure of democracy is taken from Polity IV. We use the cumulative polity score (*Polity2*).

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<sup>15</sup>Version 2.9, updated through 2013.

<sup>16</sup>Restricting partners to be OECD members does not change the results.

<sup>17</sup>When we impute missing data, we observe 1207 leaders in 143 countries.

<sup>18</sup>Using the absolute number instead yields almost identical results.



To test the conditional nature postulated above, we interact this value with BITs signed variable.

We incorporate a battery of controls, namely GDP per capita, the growth rate, population and aid inflows all drawn from the World Development Indicators (WDI), as well as oil and gas production. Finally, it is important to take into account how other international economic treaties influence leader survival (Hollyer and Rosendorff 2012). 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  $t$  (Dür, Baccini, and Elsig 2014). Finally, we control for the total number of BITs signed by the country, up to the previous leader.<sup>19</sup>

## 5.2 Estimates

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. In our estimates, we adjust for the shared frailty faced by leaders from a given country. 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 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. 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 function  $h_0(t)$ , it does assume that hazard rates are proportional across units. We test this by using Grambsch-Therneau and Harrell’s rho tests, which suggest that the marginal effect of both the log number of BITs signed and Polity change over time. As such, we interact these terms with time in office. Results are displayed as Models 3 and 4 in Table 1.

The evidence follows our expectations from Proposition 3 and 4. Signing BITs is associated

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<sup>19</sup>Table B2 shows summary statistics.

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)
BITs signed $\times$ Polity2	0.03** (0.01)	0.04** (0.01)	0.04** (0.01)	0.04** (0.01)
Polity2	0.04** (0.01)	0.03** (0.01)	-0.00 (0.01)	-0.01 (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)
<hr/>				
Time-interacted regressors				
BITs signed (leader tenure) (Ln)			0.00 (0.01)	0.01* (0.01)
BITs signed $\times$ Polity2			-0.00 (0.00)	0.00 (0.00)
Polity2			0.01** (0.00)	0.01** (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

Models 3 and 4 include variables interacted with the natural logarithm of time in office..  
Standard errors in parentheses. \*  $p < 0.05$ , \*\*  $p < 0.01$ .

with a lower risk of being removed from office. Examination of the time-interacted 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 evidence is the interaction between BIT signing and democracy. Proposition 4 posits that the relationship between BITs and leader survival is stronger in autocracies than in democracies, i.e., we expect the interaction to be positive. Evidence from all models supports this claim.

This interaction term allows the marginal effect of signing a BIT to vary according to the level of democracy. That is, we can compare the estimated hazard for an autocratic leader who has signed one BIT to that of a similarly autocratic leader who has signed no BITs, or make the same comparison for a democratic leader who has signed a BIT to a democratic leader who has not. By virtue of the inclusion of the interaction term, the ratio of the hazard rates in the first comparison is not constrained to be the same as in the second. The negative coefficient on the BITs signed term implies that BITs reduce the hazard of leader removal when the *Polity2* score is equal to zero. The positive coefficient on the interaction implies that this effect grows larger as the *Polity2* score declines (countries grow more autocratic) and grows smaller as the *Polity2* score rises (countries grow more democratic).

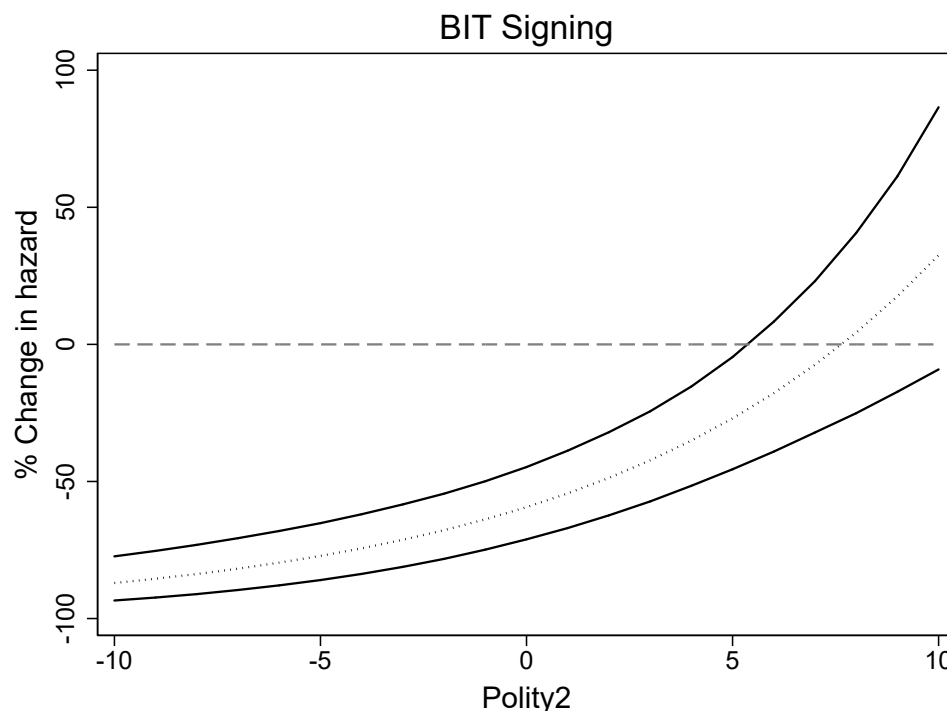
However, interpreting interactive terms in non-linear models is made more challenging by the fact that the estimating equation is not additively separable. To facilitate interpretation, we estimate the substantive effect of signing a BIT while in office and how it varies by regime type, examining the percentage change in the hazard of leader failure.<sup>20</sup> Figure 1 documents the percentage change in the hazard rate (measured on the y-axis) resulting from a change from zero BIT signings to one BIT signing. This comparison is conducted for all values of the *Polity2* score (measured on the x-axis). This figure demonstrates 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%]. The marginal effect of the first BIT signing diminishes as countries grow more democratic, and is statistically indistinguishable from zero for Polity scores of 5 or greater. (We obtain the same substantive result if instead of Polity scores we use the binary classification from Democracy and Dictatorship; see Table B3)

### 5.3 Robustness

Term limits are a democratic feature; when we split the sample by regime in Table B3, we see our results are not sensitive to such dynamics. We elaborate on this issue in Appendix 2.1 – our

<sup>20</sup>Estimates rely on simulations of 10,000 draws of the beta and variance-covariance matrices, and calculate the percentage change in the hazard as follows:  $\% \Delta h(t) = \frac{\exp(\beta X_2) - \exp(\beta X_1)}{\exp(\beta X_1)} \times 100$ , where  $X_1$  is the value of the variable before the change (0) and  $X_2$  is the value after the change (1).

Figure 1: Percentage Change in the Hazard of Leader Failure Resulting from BIT signing



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

findings are robust to (i) dropping leaders who could not re-run for office due to term limits, (ii) flexibility control for institutional features related to term-limits, and (iii) re-coding leaders so to account for political dynasties and families as a strategy for avoiding term limits.

In light of an emerging literature on investment disputes (e.g., [Aisbett, Busse, and Nunnenkamp 2017](#), [Haftel and Thompson forthcoming](#)) it is important to show that these are not influencing our results. We do this in several ways: (i) we control for the number of investor claims filed during the tenure of a given leader (Table [B12](#)), (ii) we restrict our analysis to leaders who did not receive any investment claims (Table [B13](#)), and (iii) we interact investor claims with our main variables, thus allowing for differential effects (Table [B14](#)). In all cases, our main results are not affected.

Democracy is a multidimensional object, and different dimensions may have differing effects: property rights and the rule of law are associated with higher FDI ([Li and Resnick 2003](#)) rather

than the accountability mechanism we describe here. We (i) replicate our main analysis controlling for Latent Judicial Independence (LJI) (Linzer and Staton 2015) as a proxy for law and order (Table B10) and (ii) use LJI as our main interaction variable (Table B11). These results provide strong support for our core theoretical argument.

Not all BITs are equal in value. Table B8 replicates our analysis where each BIT is weighted by the partner’s logged GDP. Table B7 shows similar results when we use BITs in force instead.

When we remove leaders who (i) died in office from natural causes, (ii) were in office less than 1 year, or (iii) were in office less than 2 years, our results remain unchanged. Excluding China does not affect our results (Table B9).

We also implemented a parametric Weibull model, obtaining similar results (Table B16). Table B15 shows that our results are essentially the same when we impute missing observations. To address the concern that our results are driven by imbalances in observables, we pre-processed the data via matching, obtaining even more precise results. (A detailed description is in Appendix 2.3). Unobservables could still drive such a relation, and endogeneity concerns might arise. We show (in Appendix 2.4) that our results are robust when we implement an instrumental variable strategy.

We also test an extension of our argument by exploring the variations in the effects of BIT signing on leader survival within autocracies—we further describe our design and results in Appendix 2.2, finding strong support for our claims.

## 6 Mechanisms

Two main mechanisms help explain our results. First, a direct effect via capital accumulation enhancing economic performance. Second, an indirect effect, via enhancing the overall investment climate and economic environment.

The direct effect has been largely discussed by the extant literature. There is an emerging consensus that FDI is enhanced by the presence of BITs. While early studies suggested BITs had little effect on FDI (Tobin and Rose-Ackerman (2005), for instance), using an instrumental variable approach, Kerner (2009) shows that BITs enhance FDI, while Kerner and Lawrence (2012) find that BITs primarily enhance foreign fixed-capital investment. Rosendorff and Shin (2012) find that

BITs have a greater effect on FDI inflows in states with weaker domestic institutional environments, i.e. autocracies. This is consistent with our claim that BITs have the largest effect on investor expectations when the domestic investment environment is poor.

Such findings are complemented not only by arguments linking FDI to growth and economic performance in general (e.g., [Alfaro et al. 2010](#)) but also by evidence linking FDI with benefits to political elites and decreased likelihood of coup threats ([Bak and Moon 2016](#), [Pinto and Zhu 2016](#), [Tomashevskiy 2017](#)).

In contrast, the indirect effect is, to the best of our knowledge, a novel channel, and thus we turn our attention to it next.

## 6.1 Indirect Channel: An Enhanced Economic Environment

We posit that BITs lead to improvements in the investment climate in the broader domestic economy (Corollary 1), with larger effects in less accountable regimes (Proposition 2).

We proxy the investment climate with sovereign creditworthiness. There is evidence that creditworthiness matters for leader survival – [Arias \(2017\)](#) finds that cheaper credit increases the extent of patronage and leader survival. [DiGiuseppe and Shea \(2015\)](#) 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 2016](#)).

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 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.

We argue that BITs have similar consequences. First, they attract foreign direct investment (direct channel) and so enhance a source of government revenue. Second, they represent a commitment to market-friendly policies towards inward foreign direct investment ([Kerner 2009](#)), which is positively perceived by credit rating agencies. Third, some BITs create opportunities for bond-

holders 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 influenced bondholders' legal resources after Argentina'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.

## 6.2 TSCS Estimation: Error Correction Model

To examine the extent to which the domestic investment climate is enhanced by the signature of BITs we analyze three different indicators. First, and in order to assess sovereign creditworthiness, we rely on Standard & Poor's (S&P) sovereign ratings. S&P is one of the three major credit rating agencies, but offers the largest coverage. 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) to AAA (lowest default risk). We convert these into a 0 to 16 point scale, where higher values represent lower default risks.

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. As a second test, we make use of credit ratings published by *Institutional Investor (II)* magazine. *II* conducts semiannual credit surveys, collecting expert opinions to rank country creditworthiness on a scale of 0 to 100, where higher values represent more creditworthy states. We use the yearly average, which spans 1980 to 2009 and covers up to 111 developing countries in our sample.

Thirdly, 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). When economic agents are less confident that their assets in banks will not be confiscated, potential investors will be less likely to be willing to conduct

business, and the investment climate is perceived to be weaker. A strong ‘contract enforcement’ environment is associated with 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 key 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. 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:

$$\begin{aligned} \Delta Creditworthiness_{i,t} = & \alpha Creditworthiness_{i,t-1} + \beta \Delta BIT_{i,t} + \gamma BIT_{i,t-1} \\ & + \Delta \mathbf{X}_{i,t} \phi + \mathbf{X}_{i,t-1} \rho + \delta_t + \tau_i + \epsilon_{i,t} \end{aligned} \quad (3)$$

where *Creditworthiness* is measured by S&P, *II* ratings and CIM (as proxy for economic risk instead of default risk), where *i* is a given country and *t* a given year. While  $\beta$  captures the short-run effects, the long-run effects are captured by estimating the long run multiplier (LRM),  $\frac{\gamma}{\alpha}$ . We include both country and year fixed effects as well as standard controls ( $\mathbf{X}_{i,t}$ ), namely GDP, GDP per capita, Trade, ISDS claims, and PTAs signed without investment clauses. While we are splitting the sample based on *Polity2* values, we nonetheless control for the *Polity2* score. Finally, errors are clustered at the country level.<sup>21</sup>

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

**S&P Ratings** These results are displayed in Panel A and the evidence strongly conforms with our theory. Countries that sign BITs see an improvement in their S&P credit rating, but this benefit is only robustly accrued by autocratic regimes. The coefficients of interest for autocracies

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<sup>21</sup>Table B22 displays summary statistics.



Table 2: **Regime Type, Creditworthiness & Economic Risk, and BITs**

	Autocracies		Democracies	
	Panel A: S&P Ratings			
	(1)	(2)	(3)	(4)
S&P Ratings <sub><i>t</i>-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><i>t</i>-1</sub> (Ln)	0.36* (0.16)	0.39* (0.15)	0.12 (0.06)	0.01 (0.07)
LRM <i>p</i> -value	0.22	0.10	0.10	0.91
Observations	146	144	687	642
Countries	16	15	58	55
R <sup>2</sup>	0.38	0.62	0.29	0.43
	Panel B: II Ratings			
	(1)	(2)	(3)	(4)
II Rating <sub><i>t</i>-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><i>t</i>-1</sub> (Ln)	0.89** (0.27)	0.75** (0.27)	0.06 (0.24)	-0.05 (0.25)
LRM <i>p</i> -value	0.01	0.01	0.81	0.84
Observations	584	539	998	955
Countries	59	56	72	69
R <sup>2</sup>	0.34	0.33	0.37	0.43
	Panel C: Contract Intensive Money			
	(1)	(2)	(3)	(4)
CIM <sub><i>t</i>-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><i>t</i>-1</sub> (Ln)	0.30 (0.32)	0.53 (0.31)	0.07 (0.30)	0.26 (0.18)
LRM <i>p</i> -value	0.37	0.10	0.82	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	✓	✓	✓	✓

Columns 1 and 2 correspond to autocratic regimes while Columns 3 and 4 correspond to democratic. Controls: GDP, GDP per capita, Polity2, Trade, ICSID filings, and PTAs signed without investment clauses. Robust standard errors clustered at the country level in parentheses. \*  $p < 0.05$ , \*\*  $p < 0.01$

are highly significant and stable across specifications (although only for short-run effects) while those for democracies are more unstable and not significant once we account for relevant covariates. Nonetheless, the limited sample size warrants caution when interpreting these results.

**Institutional Investors** In Panel B, we analyze our second measure of creditworthiness, *II* Ratings. The core finding is replicated. Columns 1 and 2 show large, significant and stable results for autocratic regimes (here in the long-run only). In contrast, Columns 3 and 4 show small, unstable and insignificant results when democratic leaders sign BITs.

**Contract Intensive Money** These are shown in Panel C. Again, the results support our expectations. We see a statistically significant short-run effect in autocracies (once we control for relevant covariates) but not in democracies.

Overall, the evidence confirms our theory: BITs are associated with an enhanced economic climate in autocracies but not in democracies.

### 6.3 Event Study Estimation

Capital markets are viewed as efficient with respect to public information – agents quickly adjust their expectations given new information, and the effect is quickly reflected in asset prices. If BITs improve the investment climate (at least in autocracies), we would expect BITs to increase the prices at which sovereign debt trades in secondary markets.

We use an event-study approach to assess the reaction of investors to BIT signing. 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’.

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.

We specify  $CAR_{it} = \beta + \mathbf{X}_{it} + \epsilon_{it}$ , for country  $i$  over the event window  $t$ . The parameter of interest is the constant term,  $\beta$ , which captures the impact of the event on average returns. The vector  $\mathbf{X}$  controls for *Polity2*, GDP (Ln), GDP growth, and Trade (% of GDP).

Let  $\beta_d$  denote the value of this parameter in a sample drawn from BIT signings by democratic states, and  $\beta_a$  denote value of the same drawn from an autocratic sample. Then Proposition 2 predicts that  $\beta_a > \beta_d \geq 0$ .

**Data** We rely on J.P. Morgan EMBI Global data, which consists of US 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 measure of 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 nations, which provide us with closing index value for each trading day.<sup>22</sup>

**Results** We explore the effect of a BIT on the abnormal returns for a variety of estimation windows (for computing the normal returns). Table 3 displays panels for each event window: from 2-day in Panel A through 5-day in Panel D. To facilitate interpretation, we again split the sample between autocratic 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 autocratic countries, thus showing an improvement in creditworthiness. This is robust to different event and estimation windows. In contrast, when democratic leaders sign a BIT, they do not experience any improvement in bond prices.

## 7 Conclusion

A state's interactions with international institutions affects the tenure of leaders in those states, and the direction of this effect largely depends on the regime type of the country.

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<sup>22</sup>The sample begins January 1, 1986 for 10 countries, up to May 30, 2015 for 65 countries.

Table 3: **BITs & Cumulative Abnormal Returns by Regime Type**

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

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

Here we have examined the link between BITs and leader survival, and the effect of these treaties is conditioned by regime type. Autocratic leader survival is enhanced by BIT signing to a larger degree than is democratic leader survival. Our explanation for this phenomenon is based on the **role accountability** plays in securing property rights. Autocracies are accountable to narrower bases of support than democracies, making commitments to protect property rights less credible. Improvements in these institutions from within are fraught with domestic political challenges, 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 engage in takings (regulatory and otherwise), 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 relatively more inclined to sign BITs. Democracies are characterized by domestic institutions that function to protect property from seizure by the state, and have less to gain from signing BITs.

These findings contribute and speak to several larger issues in the fields of international and comparative political economy. First, our argument draws on, and offers a further piece of evidence in support of, a lengthy literature documenting the role of political institutions in states' credible commitment to secure property rights. Our evidence further supports long-standing contentions that democratic domestic institutions foster commitments to investors, both domestic (e.g. [North and Weingast 1989](#)) and international (e.g. [Jensen 2006](#)).

However, our findings also indicate that international agreements may substitute for domestic institutions when it comes to securing investor property rights. Given the comparative ease of entry into such agreements, relative to changing domestic political institutions, international enforcement is likely to be highly attractive to autocratic leaders. The normative implications of this finding are complex: On the one hand, international agreements may help to alleviate the economic implications of poor institutions, which have the potential to hinder development even over very long time horizons ([Acemoglu, Johnson, and Robinson 2001](#)). On the other, since international agreements diminish the economic and political costs associated with autocratic institutions, the presence of such agreements may diminish the incentives for leaders to move in a democratic direction.

Our findings, particularly when coupled with recent pieces by [Rosendorff and Shin \(2012, 2015\)](#), also speak to a prominent debate in international relations: When and why do governments enter into treaties? In typical settings, governments are most likely to enter into treaties if their behavior is already compliant with treaty terms ([Downs, Rocke, and Barsoom 1996](#)). Consequently, empirical estimates of treaty compliance tend to over-state the effects of the treaty ([von Stein 2005, Simmons and Hopkins 2005](#)). However, we document that when treaties substitute for domestic institutions or policies, the typical intuition may not hold ([Hollyer and Rosendorff 2011](#)). In this instance, the

greatest political and economic benefits of the treaty are enjoyed by those governments who were *least likely* to be in compliance *ex ante*. Contrary to the conventional wisdom, autocratic states have the strongest incentive to engage with the international investment regime.

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