

Bondholders v. Direct Investors? Competing Responses to Expropriation

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Abstract

Much work in international political economy assumes that actors in different capital flows have the same preferences over government behavior, but this paper asks whether the preferences of sovereign bondholders and foreign direct investors might conflict. When direct investors are expropriated, preferences could align over property rights issues. However, bondholders likely take positive signals if expropriation generates revenue for the state. Using interviews with fund managers and a novel dataset (1995-2011), I find that governments that earn revenue from expropriation enjoy lower long-term spreads on sovereign bonds. Although governments that expropriate lose out on FDI, they can generate revenue through expropriation and be rewarded in sovereign debt markets.

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Much work in international political economy assumes that participants in global capital flows have the same preferences over government behavior. One implication of this logic is that government behavior that leads to FDI diversion, such as expropriation, should also lead to costs in other capital markets. In this paper, I question whether a government's treatment of its foreign direct investors affects its ability to borrow in international markets. To the extent that sovereign bondholders do punish expropriating governments, we have evidence that investors in different capital flows indeed perceive their property rights risks to be aligned. Alternatively, if bondholders sometimes reward governments, we have evidence that investors participating in different capital flows may not only interpret government behavior differently but may even be at odds with one another.

Firms that own assets abroad rely on foreign governments' implicit and explicit promises of respect for their property rights. Expropriation, whether through the transfer of ownership to the state or incremental violations of foreign firms' ability to derive value from their assets, threatens the principle of foreign direct investment (FDI). However, expropriations provide sovereign bondholders two different, competing signals. On one hand, bondholders, with their own property rights to worry about, may align with direct investors and act in a way that punishes a government that expropriates. On the other hand, I argue that bondholders likely reward governments when governments' revenues – and thus their abilities to service debts – increase. Bondholders are pushed to punish governments for expropriation but pulled to reward governments if those actions might improve debt serviceability.

In this paper, I use a novel data set of public international investment arbitrations (IAs) to test whether, and under what conditions, sovereign bondholders' and direct

investors' preferences over government behavior conflict. Public IAs provide publicity for expropriation events, which makes them a good measure of expropriation events vis-à-vis bondholders that have limited information. We know that states facing IAs lose FDI, as firms divert or draw down investments in search of friendlier climes.¹ For the subset of IAs resulting from non-revenue raising activities, direct investors and sovereign bondholders should generally align in punishing governments. However, I argue that emerging market governments can improve their ability to borrow when revenue-raising expropriations trigger IAs.

Below, I develop the theory of expropriation's competing effects, drawing on interviews and surveys with investors in emerging market debt.² I then discuss the analysis, which uses emerging market sovereign bond indices taken from JP Morgan (1995-2011).³ Error correction models (ECMs) allow me to estimate both short- and long-term effects of revenue-generating IAs as opposed to other IAs. I also examine the impact of the filer's industry on bond valuations, finding no significant effects. I conclude by emphasizing the key implication of this paper: considering sovereign bondholders in contrast to foreign direct investors illuminates both constraints and opportunities that economic openness can generate for governments. Investors are not always on the same side. Public IAs make visible the permissive space governments have to both expropriate and keep international

¹ Allee and Peinhardt 2011, Wellhausen 2014.

² Qualitative information is drawn from survey responses of 17 percent of 400 individuals contacted via Twitter (who had tweeted using the words "sovereign bond," "sovereign debt," or "emerging market debt" from March-September 2013); survey responses of 2.4 percent of 680 individuals contacted via email (identified as bond investors via Morningstar); and communication with four emerging market fund managers (3 American, 1 British).

³ I also analyze emerging market credit default swap (CDS) indices from Thompson Reuters (2007-2011). See Robustness section.

borrowing costs down. Governments can expropriate, earn revenue, and be rewarded in sovereign debt markets.

Debt and Expropriation

The political determinants of FDI have been well examined,⁴ but the effects of politics and government behavior on sovereign bondholders is less clear.⁵ Although their methods are opaque, evidence suggests that sovereign ratings agencies (S&P, Fitch, Moody's) tend to focus on a country's default history and macroeconomic indicators.⁶ Empirical models of sovereign bond spreads, too, tend to find effects of macroeconomic variables and thus only indirect evidence of a role for politics.⁷ Nevertheless, Tomz and Wright find interesting empirical patterns of cycles of expropriation and sovereign default in history; this paper's focus on the relationship between the two moves toward an explanation for this cyclicity in government behavior.⁸ In a seminal work on the political determinants of sovereign bond investment, Mosley finds that investors tend to give developed country governments a pass while scrutinizing more closely the policy choices governments make in emerging economies.⁹ I pick up on the idea that holders of emerging market debt are interested in micro-level policy relevant to their holdings, focusing on the effects of a particular but important micro-level policy – government behavior toward foreign-owned property.

⁴ E.g., Jensen 2006, 2008; Jensen et al 2012.

⁵ Although see Tomz and Wright 2012, Eden et al 2012.

⁶ Cantor and Packer 1996, Afonso et al 2007, Archer et al 2007. Biglaiser and Staats (2012), however, find effects of judicial quality and rule of law on ratings.

⁷ Eichengreen and Mody 1998, Hilscher and Nosbusch 2010.

⁸ Tomz and Wright 2012.

⁹ Mosley 2003.

While nationalization persists, foreign direct investors today face government violations of their property rights in a variety of forms. These extend to instances of “creeping expropriation” where the concern is the “deprivation of the benefits of ownership” rather than change in ownership *per se*.¹⁰ More than 2600 BITs and hundreds of investment protection clauses in Preferential Trade Agreements (PTAs) and other international treaties outlaw expropriation. In so doing, these agreements publicize expropriation events. Once investors take advantage of their rights to publicly sue host governments, all market actors gain a fuller picture of a government’s recourse to expropriation. From 1990 through 2012, firms filed at least 564 public international investment arbitrations (IAs) against at least 110 host states (Figure 1).

[Figure 1 about here.]

Recent work confirms a time inconsistency problem around expropriation and public IAs: though expropriation may be the preferred action today, FDI decreases when investors accuse governments of mistreatment via IAs – even at the moment of filing, which often occurs years before any outcome.¹¹ Thus, there is evidence that foreign direct investors react negatively to adverse government behavior against FDI, although this punishment is generally mediated by investor nationality.¹² As yet unexamined is the effect that this sort of publicized adverse government behavior might have on international economic actors in other capital flows. Mosley and Singer challenge scholars of international political economy to consider the effects of government behavior across

¹⁰ Kobrin 1980: 68.

¹¹ Allee and Peinhardt 2011.

¹² Wellhausen 2014.

capital flows.¹³ This paper takes up the challenge by questioning the effect that adverse government behavior toward direct investors might have on investors in sovereign debt on international markets. Do governments face punishment in sovereign bond markets as a result of engaging in expropriation of FDI?

Property Rights v. Revenues

Foreign direct investors and sovereign bondholders are interested in the security of their property rights. Both are also interested in decreasing risks on their investments. For direct investors, violations of property rights through expropriation move together with increased investment risk. FDI expropriation may send a negative signal to bondholders that their property rights, too, are in jeopardy. However, FDI expropriation need not unambiguously suggest increased investment risk for bondholders. Sovereign bondholders are interested in the ability of a government to service and ultimately repay their debt. To this end, more money in government coffers correlates with better debt serviceability. I argue that improved debt serviceability outweighs any negative signal the expropriation of a direct investor might imply.

Qualitative data supports the idea that revenue-generating expropriation affects the viability of sovereign debt. In the late 2000s, sovereign bondholders and direct investors were quite aware that Ukrainian firms were getting regular Value Added Tax (VAT) rebates while their foreign competitors were not: Ukraine owed US\$1.2 billion in outstanding VAT to multinational exporters by August 2010.¹⁴ ArcelorMittal, in particular, did not get VAT

¹³ Mosley and Singer 2008.

¹⁴ "State Tax Administration: Value-added tax bonds worth Hr 16 billion ready." *Interfax-Ukraine*: 6 August 2010.

refunded from late 2009 to 2010, and it was also asked to pay its income taxes months in advance, leaving it a creditor to the Ukrainian government for US\$500 million by mid-2010.¹⁵ Nevertheless, withholding VAT rebates helped the government remain solvent when much of the world saw it as perched on the brink of default. Ukraine's IMF packages in 2009 and 2010 were loans but not bailouts. Understanding the situation, multinational exporters lobbied for an uncharacteristically specific stipulation about VAT repayment in Ukraine's 2009 package, in hopes that expropriation would no longer make them the *de facto* creditors to a nearly insolvent state.¹⁶

Emerging market fund managers themselves see disputes over expropriation as relevant factors for their business. For example, in two surveys of bond market players, 41 percent and 63 percent of respondents reported that they follow multinational corporations' disputes with host governments and/or know about public IAs.¹⁷ But it is the context and not just the presence of expropriation that affects investor strategies. An investor into Emerging Asia emphasized that, because the debt service ratio matters in his evaluations, government revenue generation can outweigh the property rights aspects of expropriation.¹⁸ One fund manager whose firm invests solely in emerging market sovereign debt put it very clearly: "If expropriation brings revenue to the government, it is positive for the government balance sheet. The negative impact is a loss on the corporate side, but there is a gain on the government side." This manager cares that "property rights are

¹⁵ Graham Stack. "Value-added tax system provides case study in corruption, favors." *Kyiv Post*: 3 June 2010.

¹⁶ Author forthcoming.

¹⁷ Survey 1: 68 respondents comprised 17 percent of 400 individuals contacted via Twitter (who had tweeted using the words "sovereign bond," "sovereign debt," or "emerging market debt" from March-September 2013). Survey 2: 16 respondents comprised 3 percent of 680 individuals contacted via email (identified as bond investors via Morningstar).

¹⁸ Author's correspondence with emerging market fund manager, 3 years in the industry, investing in Emerging Asia sovereign debt, September 2013.

strong in general” but ultimately “pays attention to specific events” – and particularly the revenues generated by specific expropriation events.¹⁹ It follows that different kinds of expropriation have varying effects on sovereign bond spreads.

H1: Sovereign debt borrowing costs should increase when an expropriation did not raise revenue for the government.

H2: Sovereign debt borrowing costs should decrease when an expropriation raised revenue for the government.

What other characteristics of expropriations might have differential effects on sovereign bond markets? A long literature beginning with Vernon looks at the effect of investor mobility on expropriation.²⁰ Immobile assets, in industries like natural resources or infrastructure, are easily seized and are thus expected to be particularly vulnerable to expropriation.²¹ It may be that bondholders differentially punish governments that undertake opportunistic expropriations of the most vulnerable targets. On the other hand, bondholders might differentially punish governments that are so bold as to expropriate relatively mobile assets, despite the implication that such expropriation will lead to FDI diversion and exit. Relative to no expropriation, then, investors might have incentives to punish either or both kinds of industry expropriation.

However, if it is the content of the expropriation – that is, whether it was revenue-generating – and not the character of expropriation that matters, we would not expect particular punishments for expropriation when categorized by industry type. In other words, investors need not look to industry type as a proxy to understand the implications of an expropriation. Rather, investors look directly at the effect of expropriation on the

¹⁹ Interview, emerging market fund manager, 9 years in the industry, investing in emerging markets worldwide, October 2013.

²⁰ Vernon 1971.

²¹ Frieden 1994.

government's balance sheet. Thus, consistent with H1 and H2, I predict that industry type, as characterized by asset mobility, will not have a consistent punishing (or rewarding) effect in sovereign bond markets.

H3: Sovereign debt borrowing costs should not be significantly affected by the asset mobility characteristics of the industry that is expropriated.

Data

The dependent variable of (logged) spreads on sovereign bonds (1995-2011) is taken from JP Morgan's EMBI+ indices.²² To be included, markets must be sufficiently willing to lend to the state for it to have US dollar-denominated Brady bonds, loans, or Eurobonds with a minimum outstanding face value of US\$500 million.²³ That governments of these sufficiently credit-worthy states are engaging in expropriation and facing public IAs is interesting in itself, highlighting the fact that incentives for expropriation (and the ability to act on those incentives) remain widespread. Figure 2 provides an overview of trends in sovereign bond markets for the 35 countries for which data is available, categorized by emerging world region.²⁴ On average, bond spreads have been increasing over this period although there have been recent declines for African countries.

[Figure 2 about here.]

Public International Investment Arbitrations (IAs)

This paper uses a novel dataset of expropriation events, captured by the population of public international investment arbitrations (IAs). IAs are effectively lawsuits filed by

²² The lack of expropriations and public IAs in advanced industrial countries (with the exception of US and Canada NAFTA disputes and a handful of recent public IAs against Western European countries) limits testing to the emerging market context.

²³ Bonds must also meet criteria for secondary market trading liquidity.

²⁴ See Appendix Table A1 for list of available countries.

foreign investors against host governments.²⁵ To file an IA, a foreign firm with the proper national credentials brings a case under the appropriate treaty, generally a BIT.²⁶ The instance of IAs is an appropriate cut at counting expropriations. IAs bring new publicity to an underlying expropriation event that may have otherwise gone unnoticed. Or, outside observers may have expected a dispute to be settled without resort to litigation, such that a public IA itself is the best indicator that an expropriation has taken place.²⁷

The analysis includes 155 IAs filed against 22 of 35 countries for which JP Morgan EMBI+ sovereign bond data and covariates are available (1995-2011).²⁸ All cases brought at the most public of IA venues, the World Bank's International Center for the Settlement of Investment Disputes (ICSID), are included. I have also collected public cases brought in other venues, typically under arbitration rules provided by UNCITRAL.²⁹ ICSID makes the litigants in all its cases publicly available as a matter of policy, whereas UNCITRAL rules and other venues allow parties to keep both the existence of a case and its details private.³⁰ This state of affairs means that the true number of IAs is unknown. The censoring of private data is not a problem for the current analysis, however, as it is the publicity of public IAs that make them capable of providing information to sovereign bondholders.

²⁵ A small number of sovereign bondholders have filed IAs, but current thinking among legal practitioners is that this is not a viable means for sovereign bondholders to get settlements and none as of 2012 have won an IA. See Waibel 2007.

²⁶ It is usually not a condition that the firm exhaust local courts in the host country, nor must home governments know or approve of their nationals' exercise of investment protection clauses.

²⁷ International law requires diplomatic negotiations to cease once legal proceedings have commenced.

²⁸ For data collected by UNCTAD, see <http://iiadbcases.unctad.org/>. Other sources include Oxford Investment Claims Database, Investment Treaty Arbitration, IA Reporter, Global Arbitration Review, UNCTAD's IA Issues, and secondary journalism.

²⁹ UNCITRAL cases are brought in tribunals around the world, such as the International Chamber of Commerce, the Stockholm Chamber of Commerce, and the London Court of International Arbitration.

³⁰ There is some hope of increasing the publicity of UNCITRAL rules-based IAs. Petersen, Luke. 14 February 2013. "UN Working Group Finalizes UNCITRAL Transparency Rules, but They Won't Apply Automatically to Stockpiles of Existing Investment Treaties." *IA Reporter*.

Table 1 breaks down the number of month-years and countries represented in each of the analyses, separated by revenue status, outcome (if available), and industry type.³¹ Data limitations and aggregation to month-year observations leaves 130 month-years in the analyses in which at least one IA was filed against a target country and 1667 month-years in which IAs were outstanding, or 34 percent of observations. All IA variables are count variables, ranging from 0 to 13 outstanding IAs in Argentina (several months in 2004 and 2006) and Venezuela (several months in 2011). Additionally, we were able to uncover the month-year of the underlying expropriation event that caused 84 of the IAs faced by 17 countries.³² This allows for robustness tests of whether expropriation events have effects on bond markets before they become publicized through public IAs.

[Table 1 about here.]

Because of the lack of offsetting revenue, IAs concerning non-revenue-generating adverse government actions (hereafter non-revenue IAs) should result in punishment in sovereign bond markets, as direct investors and bondholders' preferences for rule of law remain aligned (H1). However, I expect bondholders to reward governments facing public IAs revolving around revenue-raising actions (hereafter revenue IAs) (H2). In order to categorize IAs by type, we augmented the IA database with details on the content of the case and characteristics of the investor involved.³³ Expropriations and resulting IAs are coded as "revenue" when the underlying action either generated revenue for the national host government or reduced the national host government's liabilities. Revenue-generating

³¹ Mutually exclusive categories do not sum to 155 if month-year aggregations vary or public data is unavailable.

³² I exclude Argentina from these analyses because of problems of multicollinearity, contributing to the lower number of identified events. See Robustness below.

³³ These details are first culled from court documents. Where unavailable, Lexis-Nexis and Factiva searches of local press and international business press (such as Bloomberg and Reuters) provide details.

actions include actions like demanding taxes in excess of contracted amounts; forcing the sale of new equity stakes to the government; or the government otherwise acquiring property without due compensation. Table 2A, for example, summarizes the case of a Cayman Islands investor that, in 2002, brought a BIT claim against Kazakhstan for imposing unlawful taxes on its operations. Revenue expropriations also take place when the government's action allows it to avoid liabilities, say, by unilaterally canceling a contract; by refusing to pay due compensation; or by breaking contracted investment incentives intended to transfer funds to a foreign firm. Table 2A describes three such incidents: the Ghanaian government's abandonment of a joint venture with a German firm; the Argentine government's non-payment of contractual obligations; and the Egyptian government's post-sale demand for a higher price on land sold to a firm from the United Arab Emirates. In all of these cases, the national government gained revenues or directly avoided outlays.

The amounts at stake in revenue IAs are large. In 58 revenue IAs for which data is available, claimants demanded a total of US\$944 billion or an average of US\$16.3 billion per case (plus accrued interest and legal costs in almost all cases). These figures exclude Argentina, a country from which journalistic evidence suggests investors have demanded billions upon billions in revenue IAs. Claimants of course have an interest in inflating their award demands. Nevertheless, these sums suggest that government earnings and/or reductions in government liabilities that stand behind revenue IAs do have substantial effects on government balance sheets.³⁴ Further, even if a particular revenue IA represents a relatively small share of a government's outstanding debt, sovereign bondholders make

³⁴ For non-revenue IAs, claimants ask for awards comparable to revenue IAs, but of course these revenues never showed up on government balance sheets.

money off of even marginal changes in risk and bond spreads. Even relatively small revenue IAs are expected to play a role in such changes.

[Tables 2A and 2B about here.]

In contrast to revenue IAs, Table 2B describes several examples of non-revenue IAs. These IAs, perhaps less intuitive than revenue IAs, generally arise when the government changes policies in such a way that devalues a foreign firm's property, a phenomena associated with "regulatory taking." In the course of changing policy, however, the government does not directly gain revenues or avoid liabilities. For example, updating health and safety regulations in a way that discriminates against a particular foreign firm qualifies as a non-revenue IA. As summarized in Table 2B, a Spanish firm claimed discrimination when Chile denied it a fishing license. A non-revenue IA can also arise when the government changes its mind on a contract or set of policies, as when Vilnius, Lithuania pulled out of a contract (that was backed by the Lithuanian central government) or when Slovakia reformed its insurance markets. Some non-revenue IAs emerge from what are perhaps strange scenarios in which foreign property was inadvertently involved with government action. For example, Canadian investors faulted the Costa Rican government for infringing on their property rights when the local police took down a Ponzi scheme. Findings that bondholders indeed react negatively to such events would suggest an alignment of preferences and behavior between bondholders and direct investors.

To get at industry and asset mobility, I code investor industry based on the project in which the investor was engaged. This means that the industry of the investor could vary from the industry traditionally associated with the parent firm. Public IAs are filed by firms from a wide variety immobile and mobile industries. Immobile industries include

agriculture, energy, infrastructure, mining, real estate, and telecommunications. Mobile industries include finance, manufacturing, services, and trade. Expropriation, especially when broadly defined, is not only a phenomenon in natural resources and infrastructure industries (see again Table 1).

What effects do the outcomes of public IAs have on bond markets? IAs are categorized as “government win” if the government is declared non-liable as a result of the IA process. In contrast, I follow firms and legal practitioners in categorizing IAs as “wins” if the investor wins an award, the case is declared to be settled, or if the case is withdrawn.³⁵ There is no clear *ex ante* hypothesis as to the effects of IA resolutions. We might expect that the resolution of an IA, particularly in favor of the investor, brings rewards in bond markets thanks to the mitigation of uncertainty and evidence of the government’s compliance with the process.³⁶ Moreover, a government loss or settlement signals the reestablishment of property rights protections from a foreign investor’s point of view. On the other hand, one might expect that if the investor wins or the case settles, the new drag on government revenues suggests punishment in bond markets consistent with H1. Similarly, if the government wins, the avoidance of liability is perhaps consistent with H2. I leave this as an empirical question to be tested below.

Other Covariates³⁷

The parsimonious set of controls used here mimics those in the economics literature on sovereign bonds, and in particular Hilscher and Nosbusch.³⁸ First, I include a state’s

³⁵ Interviews, investment arbitration lawyers (4), 2008-2012.

³⁶ It has recently been revealed that many states are negligent in paying IA awards – particularly Argentina. However, data on repayment is generally kept private and it is reasonable to believe that, just as the researcher does not have systematic *ex ante* access to such data, neither does the bondholder.

³⁷ Variables are from the World Bank World Development Indicators unless otherwise noted.

Polity score (-10 to 10) to account for the effects that overall regime type might have on bond markets and, further, to provide some control for prior expectations about the likelihood that a regime would engage in expropriation. Second, I include the years since the country last experienced a sovereign debt crisis, measured in three ways: the presence of a debt crisis as coded by Reinhardt and Rogoff, the presence of sovereign debt restructuring as measured by Das et al, or the initiation of renegotiation with the Paris Club.³⁹ Proximity to a debt crisis is expected to have a negative effect on both sovereign bondholders and sovereign CDS holders. The variable is capped at 11 years.⁴⁰ Third, I include the country's reserves as a percentage of GDP. This variable informs a state's ability to repay its debt. While higher values should tend to be rewarded in bond markets, the amassing of reserves could also have a perverse effect if investors believe a government will soon have trouble repaying and is amassing reserves in advance of that event. Fourth, I include a state's total external debt stocks as a percentage of GDP.⁴¹ Higher values would tend to be punished by higher spreads in bond markets. However, an increase in external debt stocks might track the idea that a country is seen as a good risk and has been able to borrow accordingly. Fifth, I include a state's terms of trade (value of exports/value of imports), as negative terms of trade shocks suggest bond market penalties because they can drain hard currency and cause balance of payment problems.⁴² Unfortunately, the coverage of monthly or quarterly economic data of this sort in emerging market countries is poor, so I use monthly bond and IA data alongside annual controls.

³⁸ Hilscher and Nosbusch 2010; see also Longstaff et al 2010. Bei and Wei 2012.

³⁹ Reinhardt and Rogoff 2009, Das et al 2012, Fuentes and Saravia 2010.

⁴⁰ Hilscher and Nosbusch 2010.

⁴¹ Results are robust to replacing external debt per GDP with total debt service.

⁴² Ibid.

Research Design

As explained in De Boef and Keele, error correction models (ECMs) are appropriate to model time-series cross-sectional data whether or not cointegration is present.⁴³ The basic ECM model includes both differences and lags of the dependent variable and explanatory variables, as well as the ability to estimate both the short-term and the long-term effects of the variables on the ECM's return to its equilibrium state. I lag the annual variables so that they are one year (12 months) behind the values of the dependent variable (and I also difference them over a 12 month period). I include a one-month lag (and difference) on the dependent variable and the IA variables of interest.⁴⁴ One-month lags allow me to uncover any short-term effects of IAs in bond markets. The ECM differences each series such that the model sufficiently accounts for any non-stationarity in the data. However, these markets show quarterly seasonality, which prompts me to include quarter-year fixed effects. Additionally, I include country fixed effects so that identification is off of change within-countries and over-quarter-years.⁴⁵ More formally, the overall model specification is as follows.

$$\Delta y_{i,t} = \beta_0 y_{i,t-1} + \theta \Delta X_{i,t}^{\wedge} + \vartheta X_{i,t-1}^{\wedge} + \omega_i + \tau_{t}^{\wedge} + \epsilon_{i,t} \quad (1)$$

The first term $\beta_0 y_{i,t-1}$ is the one-month lag on the dependent variable. The next term, $\theta \Delta X_{i,t}^{\wedge}$ contains the short run effects of explanatory variables, differenced over one or 12 months as appropriate.⁴⁶ This term is followed by the lagged terms, again over one or 12 months as appropriate. The next term ω_i is country fixed effects while τ_{t}^{\wedge} is quarter-year

⁴³ De Boef and Keele 2008. See also Kennedy 2003. For an example of ECMs in practice, see Blaydes and Kayser 2011.

⁴⁴ Second lags are on the whole not significant.

⁴⁵ Including both fixed effects and the lagged dependent variable is possible in the ECM framework.

⁴⁶ For concision, t^{\wedge} marks terms that include measures of time other than month-year.

fixed effects. I use the Stata package *xtpmg*, which reports both short- and long-term effects directly.⁴⁷ Standard errors are clustered by country.

Results

Table 3 summarizes regression results that test H1 and H2. In Model 1, we see that outstanding IAs as a unified category do not have a significant effect on sovereign bond spreads in the short- or long-term. Model 2, however, demonstrates the expected differential effects of revenue versus non-revenue IAs. One more revenue IA generates a reward for borrowing governments by lowering bond spreads 8.1 percent, year-on-year.⁴⁸ Governments can earn revenue via expropriation, and, although future FDI flows decrease, future sovereign bond spreads move in the government's favor.

In contrast, borrowing governments face harsh punishment when facing non-revenue IAs: bond spreads increase by 28.8 percent, year-on-year. It makes sense from both theory and anecdotal evidence that the effects of IAs are in the longer rather than the short term. IAs are providing information about the general willingness of the government to interfere with foreign investment and whether that interference is nevertheless revenue-positive. This information is relative to overall and thus long-term perceptions of risk and reward.⁴⁹ It is also intuitive that the punishing effect of non-revenue IAs is larger than the rewarding effect of revenue IAs, given expectations that investors observing revenue IAs see the revenue-generating process as a counterweight to the negative signal of property rights violations. Interestingly, a one-point increase in a government's Polity

⁴⁷ Blackburne and Frank 2007.

⁴⁸ To account for the logged dependent variable, effect sizes are calculated by $\exp(\text{coefficient}) - 1$.

⁴⁹ Author interviews, emerging market fund managers (2), August and October 2013.

score is associated with a 2.9 percent long-term decrease in bond spreads, indicating a bond market reward for democracy and democratization. The signs on reserves per GDP and external debt are at first unexpected. However, a country amassing reserves may be one that is worried about its ability to repay debts, while a country with more external debt may be one that just increased its borrowing thanks to being a good risk. In other words, there are reasons to expect these signs, especially in the short run; indeed, these covariates are significant only when considering month-on-month changes.

[Table 3 about here.]

Although Model 1 demonstrated that aggregate IAs did not have a significant effect on bond spreads, we might worry that the effect of revenue IAs is acting through the number of total IAs, such that including the mediating variable of total IAs would wipe out the effect of revenue IAs on spreads. Consistent with H2, the expectation is that in causal mediation analysis the treatment variable, a revenue IA (binary), should retain a direct effect on the outcome even when controlling for the count of public IAs (continuous). To test this, I collapse the data and apply causal mediation analysis with the *medeff* package in Stata.⁵⁰ The analysis controls for the same (lagged) covariates as above and clusters by country.

[Table 4 about here.]

Table 4 shows point estimates and 90 percent confidence intervals after 1000 simulations. The direct effect is the effect that status as a revenue IA has on sovereign bond spreads when controlling for the mediating variable, the count of IAs. That this effect is significantly different from zero demonstrates that the count of IAs does not fully mediate

⁵⁰ Imai, Keele, Tingley, and Yamamoto 2011; Hicks and Tingley 2011.

(i.e., wipe out) the effect of revenue status. Moreover, the direct effect is greater than the total effect, indicating that mediation is inconsistent: the mediator variable is suppressing the effect of the treatment.⁵¹ This result mirrors the different signs on total IAs and revenue status in Models 1 and 2. The indirect effect, or the Average Causal Mediation Effect (ACME), is the effect of the treatment on the outcome variable that acts through the mediator. The negative sign on the point estimate occurs because the effect of the treatment on bond spreads is negative.⁵² The last line captures the amount of the total effect mediated – that is, how much of the effect is attributable to total IAs and how much to revenue status. Only 31 percent of the overall effect comes from total IAs, leaving 69 percent accounted for by revenue status. Moreover, this sign is negative which again establishes that inconsistent mediation is taking place. With this analysis, we can have confidence that the effects of revenue status are not wiped out by the presence of IAs themselves but rather have an independent effect on sovereign bond spreads.

Table 5 considers the effects of IAs when taking into account additional potential shocks brought about by the resolution of IAs. First, Model 3 shows that total IAs continue to have no effect on spreads but, as evident in Model 4, the significance and magnitude of effects of revenue and non-revenue IAs are consistent with Table 3. As explained above, there are not clear *ex ante* priors about the effect of IA resolution on sovereign bond spreads. In Table 5 we see that, empirically, state wins do not have a significant effect on bond markets. There is, however, a significant and large long-run reward when an IA has been settled or the investor wins the litigation (as well as a short-run reward in Model 3).

⁵¹ David A. Kenny, "Mediation." Davidakenny.net/cm/mediate.htm. Accessed 1 November 2013.

⁵² The ACME is outside standard levels of statistical significance, suggesting that the causal pathway via the total number of IAs is less important than the direct effect of the treatment.

These findings suggest that rewards for government compliance with the litigation process and the reestablishment of property rights outweigh balance sheet concerns at the point of IA resolution. It appears that while IAs publicize the presence and impact of expropriations, IA resolutions publicize relatively small balance sheet changes that accompany (public) awards and settlements.⁵³ For example, in a study of publicly available IA awards between 1990 and 2006, Franck finds that the average award was US\$10 million, or just 3 percent of the average request of US\$343 million in her sample.⁵⁴ These relatively small sums appear not to trump the signal of property rights restoration brought about by an investor win or settlement.

[Table 5 about here.]

In Table 6, Model 5, we see that industry does not appear to have significant effects on sovereign bond markets, consistent with H3. Neither IAs brought by firms in immobile industries nor IAs brought by firms in mobile industries affect spreads, although signs for each are consistently negative. These results reflect the *ex ante* lack of clarity about whether the vulnerability of immobile assets or the chutzpah of expropriating mobile assets would have a differential effect, especially when bondholders can instead look at the revenue status of a public IA directly.

[Table 6 about here.]

Robustness

Does the overall level of FDI in an economy affect the relationship between public IAs and bond markets? In the words of one fund manager, “No one will be around to buy

⁵³ While individual awards are small relative to claims, the accrual of many awards may have a detrimental effect on government finances. See Simmons forthcoming.

⁵⁴ Franck 2009: 447. This excludes private settlements that sometimes lead foreign investors to withdraw claims.

the bond if there is no FDI. And, debt payments and FDI are intimately tied – we have to make sure cash is left somewhere in the economy.”⁵⁵ However, results are robust to including FDI flows per GDP as a covariate, while FDI per GDP is itself an insignificant predictor of bond spreads. It may be that there are fewer surprises in the overall saturation of FDI, such that movements in FDI per GDP result in fewer updates of prior expectations in bond markets. As this fund manager said, FDI plays a role in the investment process from the beginning. That results on revenue and non-revenue IAs are robust to this FDI per GDP’s inclusion support the logic that it is the shock of property rights violations and/or revenue generation that bring about changes in bond markets rather than the level of FDI itself.

Next, I leverage both a different measure of expropriation and a different dependent variable to look at the robustness of relationships between expropriation and sovereign debt valuations. First, a significant data collection effort led us to the underlying month and year of an expropriation event that led to a public IA. A date qualified if the expropriation event was caused by the passing of legislation; if the government otherwise declared an expropriation; if a firm publicly declared that it had been expropriated; or if the press reported that an expropriation occurred. For the IAs in our sample, 87 underlying event dates were uncovered from court documents, firm press releases, and international and local press. In the case of multiple dates, we use the most proximate date to the filing of an IA, as sovereign bondholders may assume that negotiations were been going on behind the scenes on earlier dates. I exclude Argentina from these analyses, as over 40 revenue IAs can be attributed to legislative action in January 2002. The origin of such a high count of IAs at

⁵⁵ Interview, emerging market fund manager, 5 years in the industry, investing in emerging Asia and Latin America sovereign debt, October 2013.

one time approximates the incidence of financial crisis and default, which causes multicollinearity problems in the model since the variable *years since default* is already included.

Table 7 reports results using underlying event data as the measure of expropriation. As before, Model 6 shows no effect of the total count of breach events on bond spreads. In Model 7, non-revenue breach events are associated with a significant punishment in bond markets albeit of a small magnitude: a 0.6 percent increase in spreads month-on-month. Revenue breach events are, with this measure, insignificant albeit negatively signed in the long run. With this data, there is also a small increase in bond spreads in the month following the expropriation of immobile assets but no long-term effect. Terms of trade has a significant long-term effect on spreads, with a total reversal of terms of trade associated with a 47.6 percent year-on-year change in spreads (as the variable *terms of trade* changes from 0 to 1).

[Table 7 about here.]

The difference between these and the previous results support this paper's assumption that expropriation events themselves are not transparent to bondholders, and public IAs can create publicity for expropriation events that the underlying event occurrence does not. The date of public IA filings is clear and public in a way that what turn out to be difficult to find real-time reports of underlying events are not. Moreover, bondholders who are informed about conflicts realize that negotiations over expropriations continue up to the date of IA filing, such that an expropriation is not

interpreted as “solidified” until that time.⁵⁶ In short, we find support that public IAs indicate the presence of expropriation events not only to the analyst, but also to market players.

Next, I look at what effects IAs might have on another type of bond market – that for sovereign debt credit default swaps (CDS). One can think of bond prices as top-censored, as excess upward pressure on prices gets diverted into CDS markets. Likewise, CDS markets are bottom-censored: if bondholders feel secure, they need not buy insurance. Bottom-censoring may thus exclude those investors most sensitive to changes in political risk suggested by expropriation, suggesting weaker effects of public IAs in sovereign debt CDS markets. (Logged) sovereign debt CDS spreads are taken from Thompson Reuters (2007-2011). In line with the literature, I choose to use the spreads on five-year instruments, with those listed in Euros or Swiss francs standardized to US dollars.⁵⁷ Appendix Table A1 and Figure A1 describe country coverage and variation in the dependent variable, and Table A2 summarizes IA data in the sample. Investors in both sovereign bonds and sovereign debt CDS are expected to respond similarly to economic stimuli; thus, the modeling strategy is unchanged. Controlling for macroeconomic factors corrects for their omission in recent sovereign debt CDS literature.⁵⁸ Analyses again are off of within-country, over-time (quarter-year) changes in CDS spreads.

As reported in Tables A3-A5, neither aggregations of IAs nor their separation by revenue status or industry have significant effects on CDS spreads. Nor, incidentally, does the Polity score, which calls into question previous results that democracy and particular

⁵⁶ Evidence from 3 investors support this reasoning. Author’s interviews, emerging market fund managers, August and October 2013.

⁵⁷ Bei and Wei 2012.

⁵⁸ Ibid.

aspects of democracy have significant effects on sovereign debt CDS.⁵⁹ While non-results are just that, we nevertheless have evidence that the preferences of foreign direct investors and holders of these instruments are not immediately aligned. We would expect significant punishments for IAs, of whatever type, if that were the case.

Freedom to Expropriate

Quantitative and qualitative evidence shows that, indeed, direct investors' and sovereign bondholders' behavior is sometimes aligned. Bondholders punish governments for non-revenue IAs. But sovereign bondholders reward governments for acting in ways that raise revenue – even when those actions are publicized in the form of IAs. In contrast, neither public IAs as a whole nor industry-separated IAs have significant, long-term effects on bond spreads. There are not robust effects of expropriations as measured by the month-year of the underlying IA-triggering action. Nor are there effects of public IAs on sovereign debt CDS markets. But, if governments lose or settle an IA, it appears that they tend to find benefits in sovereign bond markets.

The divergent effects of revenue- and non-revenue-raising public IAs are facilitated by the diffusion of BITs and other instruments that enable public IAs, which are vehicles for publicizing expropriation events.⁶⁰ We knew of the government's time inconsistency problem with respect to expropriation: a public IA today deters FDI tomorrow.⁶¹ Yet it appears that other financial market actors are watching and responding, too. The findings here indicate that for a government interested in foreign borrowing, it is possible that

⁵⁹ Ibid.

⁶⁰ Elkins et al 2006; Jandhyala, Henisz, and Mansfield 2011.

⁶¹ Allee and Peinhardt 2011, Wellhausen 2014.

sovereign bondholders' rewards for revenue-raising expropriation are enough to weaken the deterrent effect of future FDI losses. From a government's point of view, the behavior of investors in sovereign debt markets can open permissive space to raise revenue even at the expense of direct investors. Investors participating in different capital flows can and do interpret government actions significantly differently – to the point where they can be at odds with one another, to the benefit of the host government.

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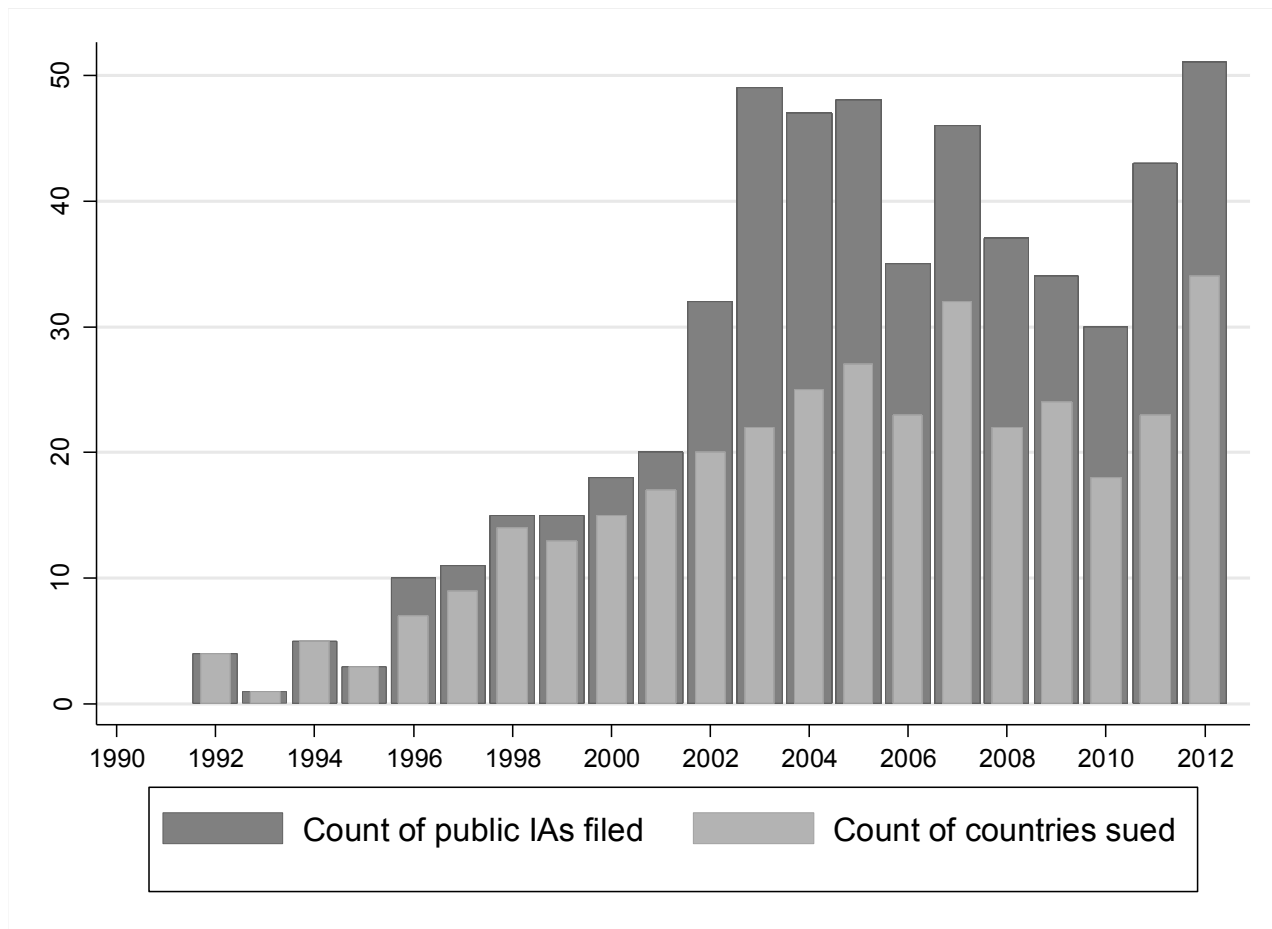
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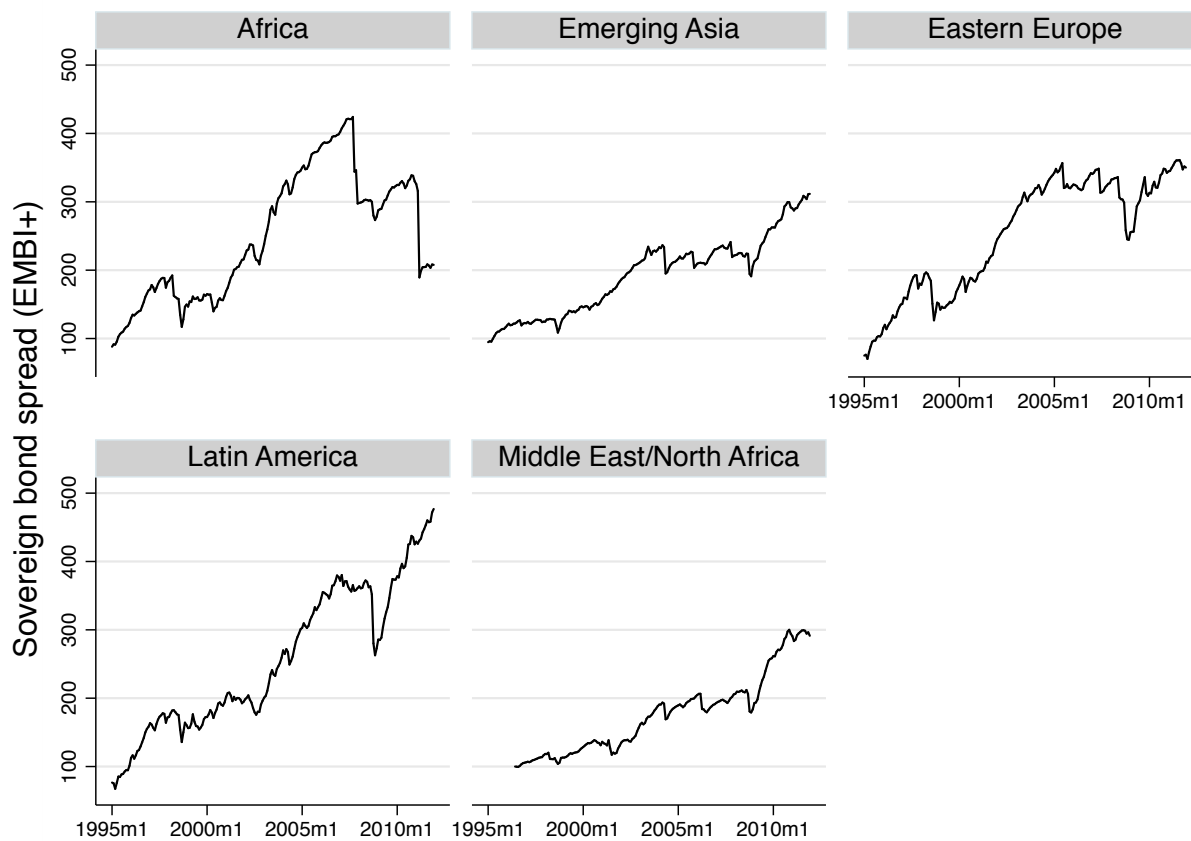
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Figures and Tables

Figure 1. Count of Public International Investment Arbitrations (IAs) and Countries Sued (1990-2012)



In this period at least 110 different countries have been sued in public IAs. *Sources:* Hajler 2012, Minor 1994, ICSID, UNCTAD Database of Treaty-based Investor-State Dispute Settlement Cases, Author's records.

Figure 3. Sovereign Bond Spreads, by Emerging World Region (1995-2011)

Source: JP Morgan EMBI+

Table 1. Summary of Explanatory Variables of Interest in Sample

	Count of M/Y with new actions	Count of M/Y with actions outstanding	Countries experiencing action
Total IAs	130	1667	22
Revenue IAs	97	1280	17
Non-revenue IAs	33	779	14
State wins	47	N.A.	18
Investor settles/wins	77	N.A.	21
Mobile IAs	67	1199	14
Immobile IAs	88	1464	22
Underlying expropriation date [^]	84	N.A.	17
<i>Totals</i>		<i>4909 observations</i>	<i>35 countries</i>

[^]Expropriations in Argentina are excluded, as complications around the 2001-2002 financial crisis cause modeling issues.

Table 2A. Examples of Revenue-raising Expropriations leading to Public IAs

Host	Year	Home	Investor's Perspective	Case
Kazakhstan	2002	Cayman Islands	After taking over utilities in the city of Karaganda, Enrho argues in a BIT claim that Kazakhstan imposed unlawful taxes.	Enrho St Limited v. Republic of Kazakhstan (ICSID Case No. ARB/02/11)
Ghana	2007	Germany	Government suspended bean deliveries (from 2000) to a joint venture cocoa distribution firm, imposed a new price agreement (2001), placed an export ban on the JV's products, and is accused of engaging in harassment.	Gustav F W Hamester GmbH & Co KG v. Republic of Ghana (ICSID Case No. ARB/07/24)
Argentina	1998	USA	Houston Industries claims the Argentine government owes it US\$2.6 million to compensate for terms unmet in its privatization contract to distribute electricity in Santiago Del Estero province.	Houston Industries Energy, Inc. and others v. Argentine Republic (ICSID Case No. ARB/98/1)
Egypt	2011	United Arab Emirates	Post-Mubarak, the developers were asked to pay the Egyptian government both in kind and cash to offset the shortfall against a revised assessment of their land value. This follows government seizure of 30 million square meters (7,413 acres) of land on the Red Sea coast purchased by the firm in 2006.	Hussain Sajwani, Damac Park Avenue for Real Estate Development S.A.E., and Damac Gamsha Bay for Development S.A.E. v. Arab Republic of Egypt (ICSID Case No. ARB/11/16)

Table 2B. Examples of Non-revenue-raising Expropriations leading to Public IAs

Host	Year	Home	Investor's perspective	Case
Chile	2004	Spain	Fisheries firm claimed discrimination in not allowing a fishing license for certain offshore waters.	Sociedad Anónima Eduardo Vieira v. Republic of Chile (ICSID Case No. ARB/04/7)
Lithuania	2005	Norway	Vilnius issued a tender for parking system and after much back and forth eventually canceled the contract.	Parkerings-Compagniet AS v. Republic of Lithuania (ICSID Case No. ARB/05/8)
Slovak Republic	2008	Netherlands	Legislative reforms to the insurance market allegedly prevented the claimant from distributing profits to their shareholders, lowering the value of these businesses to the claimant.	HICEE v. Slovak Republic (UNCITRAL)
Costa Rica	2007	Canada	Canadian individuals invested in a Ponzi scheme in Costa Rica and filed against the government once the scheme taken down by Costa Rican police, saying their loss caused by the Costa Rican government.	Alasdair Ross Anderson and others v. Republic of Costa Rica (ICSID Case No. ARB(AF)/07/3)

Table 3. (Logged) Emerging Market Bond Spreads and IAs by Revenue Type

	Δ	LR	% Change in spread [^]
Model 1			
Total IAs	-0.002 (0.002)	-0.059 (0.044)	
Polity	-0.000 (0.003)	-0.026 (0.016)	
Years since default	0.002 (0.001)	0.005 (0.031)	
Reserves per GDP	0.083*** (0.031)	0.422 (0.963)	+8.6% Δ
External debt	-0.042*** (0.015)	0.430 (0.458)	-4.1% Δ
Terms of trade	-0.000 (0.005)	0.083 (0.305)	
Error correction term	-0.024*** (0.007)		
Constant	0.160*** (0.032)		
Model 2			
Revenue IAs	-0.002 (0.002)	-0.084** (0.036)	-8.1% LR
Non-revenue IAs	0.005 (0.007)	0.253*** (0.096)	+28.8% LR
Polity	-0.001 (0.003)	-0.029** (0.015)	-2.9% LR
Years since default	0.002 (0.001)	0.004 (0.026)	
Reserves per GDP	0.083*** (0.032)	0.310 (0.903)	+8.6% Δ
External debt	-0.042*** (0.016)	0.444 (0.395)	-4.1% Δ
Terms of trade	0.002 (0.005)	0.274 (0.255)	
Error correction term	-0.028*** (0.007)		
Constant	0.168*** (0.035)		

Quarter-year and country fixed effects. Standard errors clustered by country. *p<0.1 **p<0.05 ***p<0.01
[^]Percent change in the absolute value of the bond spread with a one-unit increase in the explanatory variable.

Table 4. Causal Mediation Analysis of Revenue/Total IAs

Effect	Mean	[90% Conf.	Interval]
Direct Effect	0.482	0.250	0.718
Total Effect	0.365	0.094	0.629
ACME	-0.116	-0.350	0.110
% of Tot Eff mediated	-0.309	-0.924	-0.178

Table 5. (Logged) Emerging Market Bond Spreads and IAs by Revenue Type and Outcome

	Δ	LR	% Change in spread [^]
Model 3 Total IAs	-0.003 (0.004)	-0.053 (0.043)	
State win	-0.001 (0.013)	0.392 (0.630)	
Investor settle/win	-0.005* (0.003)	-0.594** (0.294)	-0.5% Δ , -44.8% LR
Polity	-0.000 (0.003)	-0.026* (0.015)	-2.6% LR
Years since default	0.002 (0.001)	0.003 (0.030)	
Reserves per GDP	0.085*** (0.031)	0.412 (0.948)	+8.9% Δ
External debt	-0.042*** (0.015)	0.395 (0.450)	-4.1% Δ
Terms of trade	-0.000 (0.005)	0.065 (0.303)	
Error correction term	-0.025*** (0.006)		
Constant	0.162*** (0.032)		
Model 4 Revenue IAs	-0.003 (0.003)	-0.079** (0.034)	-7.6% LR
Non-revenue IAs	0.004 (0.008)	0.252*** (0.094)	+28.7% LR
State win	-0.000 (0.014)	0.404 (0.562)	
Investor settle/win	-0.003 (0.002)	-0.432* (0.251)	-35.1% LR
Polity	-0.001 (0.003)	-0.029** (0.014)	-2.9% LR
Years since default	0.002 (0.001)	0.003 (0.026)	
Reserves per GDP	0.085*** (0.032)	0.308 (0.892)	
External debt	-0.043*** (0.016)	0.417 (0.388)	
Terms of trade	0.002 (0.005)	0.257 (0.249)	
Error correction term	-0.028*** (0.007)		
Constant	0.170***		

(0.035)

Quarter-year and country fixed effects. Standard errors clustered by country. * $p < 0.1$ ** $p < 0.05$ *** $p < 0.01$
^Percent change in the absolute value of the bond spread with a one-unit increase in the explanatory variable.

Table 6. (Logged) Emerging Market Bond Spreads and IAs by Industry

	Δ	LR	% Change in spread [^]
Model 5 Immobile IAs	-0.001 (0.004)	-0.041 (0.044)	
Mobile IAs	-0.004 (0.002)	-0.044 (0.043)	
Polity	-0.000 (0.003)	-0.027 (0.017)	
Years since default	0.002 (0.001)	0.002 (0.030)	
Reserves per GDP	0.082*** (0.030)	0.481 (0.981)	+8.5% Δ
External debt	-0.042*** (0.016)	0.349 (0.526)	-4.1% Δ
Terms of trade	-0.001 (0.005)	0.061 (0.325)	
Error correction term	-0.025*** (0.007)		
Constant	0.163*** (0.036)		

Quarter-year and country fixed effects. Standard errors clustered by country. *p<0.1 **p<0.05 ***p<0.01
[^]Percent change in the absolute value of the bond spread with a one-unit increase in the explanatory variable.

Table 7. (Logged) Emerging Market Bond Spreads and Events underlying Public IAs

	Δ	LR	% Change in spread [^]
Model 6			
Total breach events	0.003 (0.002)	-0.061 (0.184)	
Polity	-0.000 (0.003)	-0.013 (0.010)	
Years since default	0.000 (0.001)	-0.019 (0.021)	
Reserves per GDP	0.073** (0.030)	0.363 (0.824)	+7.8% Δ
External debt	-0.041** (0.020)	0.573 (0.440)	-4.0% Δ
Terms of trade	0.002 (0.006)	0.394* (0.235)	+48.3% LR
Error correction term	-0.033*** (0.008)		
Constant	0.178*** (0.041)		
Model 7			
Revenue breach events	0.001 (0.002)	-0.125 (0.242)	
Non-revenue breach events	0.006** (0.002)	-0.114 (0.248)	+0.6% Δ
Polity	-0.000 (0.003)	-0.013 (0.010)	
Years since default	0.000 (0.001)	-0.018 (0.021)	
Reserves per GDP	0.073** (0.030)	0.365 (0.825)	+7.8% Δ
External debt	-0.041** (0.020)	0.573 (0.440)	-4.0% Δ
Terms of trade	0.003 (0.006)	0.394* (0.234)	+48.3% LR
Error correction term	-0.033*** (0.008)		
Constant	0.178*** (0.041)		
Model 8			
Immobile breach events	0.002** (0.001)	-0.287 (0.278)	+0.2% Δ
Mobile breach events	0.002 (0.002)	0.074 (0.073)	
Polity	-0.000 (0.003)	-0.013 (0.010)	

Years since default	0.000 (0.001)	-0.018 (0.021)	
Reserves per GDP	0.073** (0.030)	0.364 (0.827)	+7.8% Δ
External debt	-0.041** (0.020)	0.574 (0.441)	-4.0% Δ
Terms of trade	0.002 (0.006)	0.389* (0.235)	+47.6% LR
Error correction term	-0.033*** (0.008)		
Constant	0.178*** (0.041)		

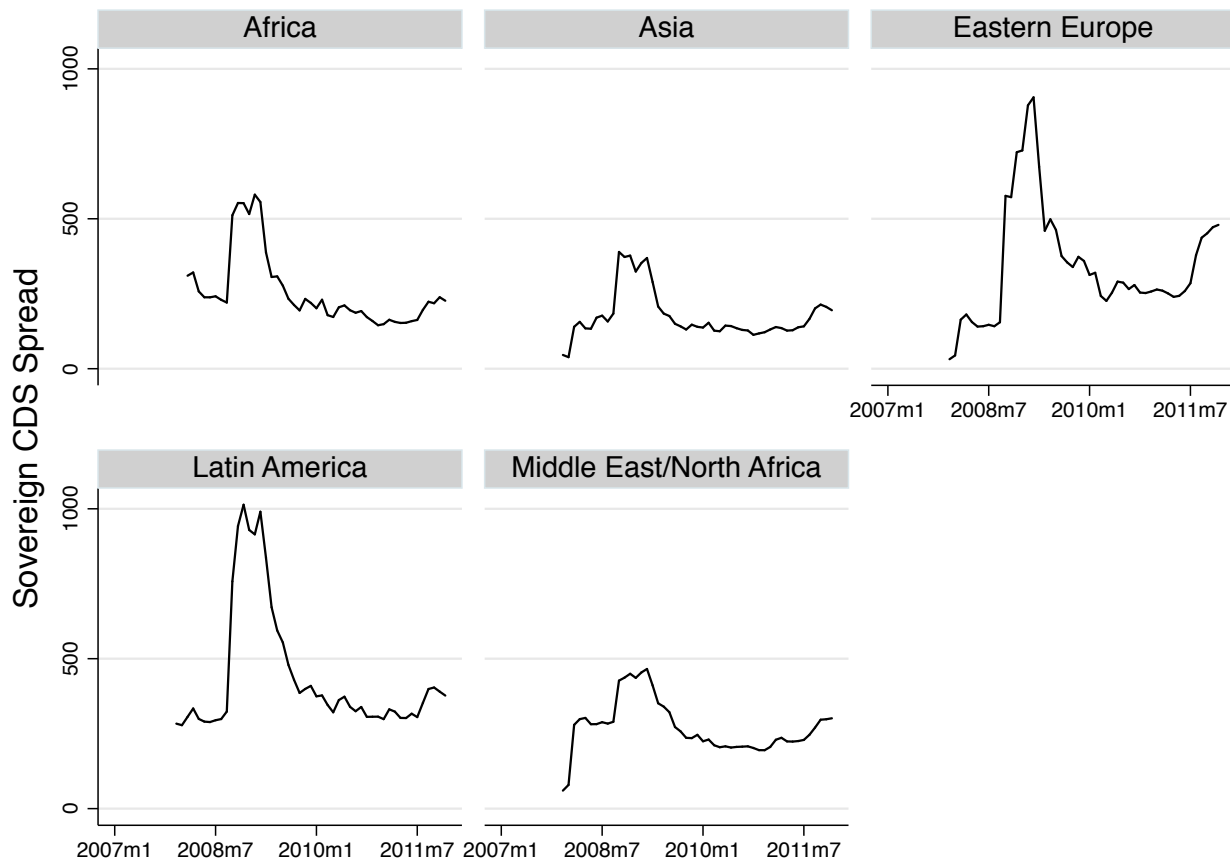
Quarter-year and country fixed effects. Standard errors clustered by country. * $p < 0.1$ ** $p < 0.05$ *** $p < 0.01$
 Δ Percent change in the absolute value of the bond spread with a one-unit increase in the explanatory variable.

APPENDIX

Table A1. Data availability and count of month/year observations of IAs filed in data set, 1994-2011

Country	Count	Bond	CDS	Country	Count	Bond	CDS
ARG	30	yes	yes	LKA	0	yes	
BGR	3	yes	yes	LTU	1	yes	yes
BHR	0		yes	LVA	0		yes
BLZ	0	yes		MAR	0		yes
BRA	0	yes	yes	MEX	10	yes	
CHL	2	yes	yes	MLT	0		yes
CHN	1	yes	yes	MYS	2	yes	yes
CIV	0	yes		NGA	1	yes	
COL	0	yes	yes	PAK	0	yes	
CRI	3		yes	PAN	1	yes	yes
CYP	0		yes	PER	9	yes	yes
CZE	0		yes	PHL	2	yes	yes
DOM	0	yes	yes	POL	3	yes	yes
ECU	17	yes		QAT	0		yes
EGY	0	yes		ROM	0		yes
EST	0		yes	RUS	5	yes	yes
GAB	0	yes		SGP	0		yes
GEO	0	yes		SLV	3	yes	yes
GHA	0	yes		SVK	0		yes
GTM	0		yes	SVN	0		yes
HKG	0		yes	THA	0		yes
HRV	0	yes	yes	TUN	0		yes
HUN	5	yes	yes	TUR	0	yes	yes
IDN	2	yes	yes	UKR	8	yes	yes
IRQ	0	yes	yes	URY	1	yes	yes
ISR	0		yes	VEN	21	yes	yes
JAM	0	yes	yes	VNM	0	yes	yes
KAZ	6	yes	yes	YUG	3	yes	
KOR	0		yes	ZAF	1	yes	yes
LBN	1	yes	yes				

Figure A1. Sovereign CDS Spreads, by Emerging World Region (2007-2011)



Spreads on 5-year instruments. *Source:* Thompson Reuters

Table A2. Summary of Explanatory Variables of Interest in Sample when DV = (Logged) CDS[^]

	Count of M/Y with new actions	Count of M/Y with actions outstanding	Countries experiencing action
Total IAs	37	548	13
Revenue IAs	27	448	8
Non-revenue IAs	10	221	7
State wins	21	N.A.	13
Investor settles/wins	24	N.A.	11
Mobile IAs	21	371	10
Immobile IAs	26	605	10
<i>Totals</i>		<i>1376 observations</i>	<i>31 countries</i>

[^]Note: Tests based on underlying expropriation event dates are omitted as the dataset includes only 10 observations.

Table A3. (Logged) Sovereign CDS and IAs by Revenue Type

	Δ	LR	
Model 7	Total IAs	0.005	0.010
		(0.019)	(0.020)
	Polity	-0.004	0.012
		(0.010)	(0.035)
	Years since default	-0.020	-0.092*
		(0.035)	(0.048)
	Reserves per GDP	-0.207	-0.714
		(0.213)	(0.527)
	External debt	0.422***	0.655
	(0.157)	(0.426)	
Terms of trade	0.047	0.031	
	(0.077)	(0.495)	
Error correction term	-0.273***		
	(0.025)		
Constant	1.935***		
	(0.292)		
Model 8	Revenue IAs	-0.007	-0.006
		(0.028)	(0.023)
	Non-revenue IAs	0.019	0.020
		(0.018)	(0.057)
	Polity	-0.005	0.004
		(0.011)	(0.038)
	Years since default	-0.027	-0.094*
		(0.038)	(0.050)
	Reserves per GDP	-0.186	-0.656
		(0.223)	(0.547)
	External debt	0.430***	0.645
	(0.151)	(0.433)	
Terms of trade	0.062	0.127	
	(0.073)	(0.471)	
Error correction term	-0.273***		
	(0.025)		
Constant	1.929***		
	(0.287)		

Quarter-year and country fixed effects. Standard errors clustered by country. *p<0.1 **p<0.05 ***p<0.01

Table A4. (Logged) Sovereign CDS and IAs by Revenue Type and Outcome

		Δ	LR	
Model 9	Total IAs	-0.004 (0.024)	0.010 (0.020)	
	State win	-0.028 (0.021)	-0.141 (0.129)	
	Investor settle/win	-0.010 (0.018)	0.012 (0.101)	
	Polity	-0.004 (0.010)	0.013 (0.036)	
	Years since default	-0.021 (0.036)	-0.091* (0.048)	
	Reserves per GDP	-0.208 (0.213)	-0.709 (0.529)	
	External debt	0.423*** (0.155)	0.651 (0.431)	
	Terms of trade	0.049 (0.076)	0.053 (0.498)	
	Error correction term	-0.272*** (0.025)		
	Constant	1.925*** (0.291)		
	Model 10	Revenue IAs	-0.018 (0.034)	-0.006 (0.023)
		Non-revenue IAs	0.007 (0.019)	0.019 (0.057)
State win		-0.029 (0.020)	-0.146 (0.122)	
Investor settle/win		-0.015 (0.018)	-0.007 (0.090)	
Polity		-0.005 (0.011)	0.005 (0.038)	
Years since default		-0.028 (0.039)	-0.093* (0.050)	
Reserves per GDP		-0.189 (0.222)	-0.652 (0.549)	
External debt		0.432*** (0.150)	0.645 (0.438)	
Terms of trade		0.065 (0.073)	0.150 (0.473)	
Error correction term		-0.273*** (0.025)		

Constant	1.917***
	(0.286)

Quarter-year and country fixed effects. Standard errors clustered by country. *p<0.1 **p<0.05 ***p<0.01

Table A5. (Logged) Sovereign CDS and IAs by Industry

DV: CDS		Δ	LR
Model 11	Immobile IA	-0.011 (0.027)	-0.026 (0.048)
	Mobile IA	0.010 (0.024)	0.085 (0.059)
	Polity	0.003 (0.008)	-0.018 (0.019)
	Years since default	-0.038 (0.030)	0.036 (0.037)
	Reserves per GDP	0.102 (0.221)	-0.020 (0.585)
	External debt	0.019 (0.105)	0.764* (0.409)
	Terms of trade	-0.022 (0.063)	0.154 (0.283)
	Error correction term	0.304*** (0.098)	
	Constant	-1.358*** (0.484)	

Quarter-year fixed effects. Standard errors clustered by country. *p<0.1 **p<0.05 ***p<0.01