


RESEARCH ARTICLE

Foreign asset expropriation and sovereign bond ratings in the developing world

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Abstract

Research shows that foreign asset expropriation narrows long-term bond spreads, resulting in lower borrowing costs. However, no empirical studies have investigated the effects of expropriation on sovereign bond ratings. Bondholders and sovereign bond issuers track ratings by credit rating agencies because they impact interest rates and capital costs. Using up to 59 developing countries from 1996 to 2016, we find that expropriation signals lower bond repayment, as asset confiscation blatantly violates international rule of law and discourages foreign direct investment (FDI) inflows, reducing bond ratings. Mediation analysis also indicates that FDI and the rule of law mediate the relationship between expropriation and bond ratings. Further, we distinguish between direct and indirect expropriation and observe that direct expropriation has a greater probability of decreasing ratings. Our research suggests that expropriation holds economic consequences for developing countries, indicating how expropriation negatively affects sovereign bond issuers in the financial and investment community.

Keywords: Expropriation; sovereign bond ratings; foreign direct investment; rule of law; indirect expropriation

Since the 1990s, studies have examined the determinants of sovereign bond ratings issued by credit rating agencies (CRAs).¹ Bond ratings are important since they impact interest rates and capital costs for sovereign states and bondholders.² At the same time, foreign asset expropriation has received increased attention.³ While expropriations are not as common as in the 1960s, the post mid-1990s have seen a resurgence of foreign direct investment (FDI) seizures. Both CRA ratings and FDI confiscations involve risk, with rating agencies assessing future risk and foreign asset expropriation showing the risk in action. Despite the importance CRAs and foreign investors place on risk, no empirical work has studied the effects of host country asset seizures on bond ratings.⁴ The closest scholarship is seminal research by Wellhausen (2015), who shows that government actions lower long-term sovereign bond spreads, suggesting that the economic resources countries accrue from expropriation translate into reduced interest rates on their bonds.

This paper investigates the impact of host-state expropriation on sovereign bond ratings. Using CRA ratings from Moody's Investor Services (Moody's) and Standard and Poor's (S&P), and expropriation data from Hajzler (2012, 2014) and Kim, Bak, and Lee (2019) for up to 59 developing countries from 1996 to 2016, we find that expropriation has a negative and significant effect on sovereign bond ratings. We also use investor-state dispute settlement (ISDS) data to distinguish between direct and indirect

¹Beaulieu, Cox, and Saiegh (2012); Vaaler, Schrage, and Block (2006).

²Binici and Hutchison (2018); Kaminsky and Schmukler (2001).

³Hajzler (2012, 2014); Hajzler and Rosborough (2016).

⁴Our interest involves how foreign asset expropriations affect sovereign bond ratings. Asset seizures could also involve domestic firms but wide-scale domestic expropriation data are currently unavailable for analysis.

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expropriation and find that direct expropriation has a much greater impact on decreasing bond ratings than indirect expropriation.

Complementing studies indicating that a government's reputation in one area can influence its reputation elsewhere,⁵ we argue that foreign asset seizure is a blatant violation of international property rights,⁶ signaling increased risk that sovereign borrowers will disregard the rule of law, which raises the probability of lowered bond ratings. We also argue that expropriation goes against the CRAs' preference for attracting FDI.⁷ CRAs support FDI since it bolsters job creation and government revenue,⁸ increasing debt repayment probability. Expropriation is likely to reduce FDI,⁹ raising the probability of debt nonrepayment and lowered bond ratings. We also use the rule of law and FDI as mediators in mediation analysis, identifying how expropriation leads to a decrease in the rule of law and FDI inflows, increasing the likelihood for lowered ratings.

Our research holds implications for the bond rating and expropriation literature. First, while scholarship has investigated the determinants of bond ratings¹⁰ and expropriation,¹¹ empirical studies have not considered the effects of asset seizures on bond ratings. Our research helps fill a gap in the political economy literature. Second, our mediation work shows the mechanism by which the rule of law and FDI mediate between expropriation and bond ratings, building on CRA¹² and FDI research.¹³ Expropriation contributes to lower respect for the rule of law, as governments tend to violate contracts and increase the unpredictability and possible willingness to take more extreme measures, while heightening uncertainty for current and future FDI, discouraging investment and growth such firms tend to foster in host states. Both lower rule of law and declining FDI raise the risk of the government's future ability to repay debts, increasing the likelihood of bond rating decreases. Third, related research shows an association between expropriation and lower bond spreads, suggesting that host states facing investor claims in public arbitration disputes reap benefits in debt markets.¹⁴ Our research, focusing mainly on asset seizure,¹⁵ but that also distinguishes between arbitration disputes involving direct or indirect expropriation, finds that direct expropriation increases developing countries' financial costs. The limited importance of indirect expropriation on bond ratings may help explain why previous work found a positive association between regulation changes and tax issues and lower bond spreads. Overall, our study suggests that expropriation promotes weaker rule of law and reduced FDI, contributing to lower ratings for sovereign bond issuers.

Sovereign bond rating determinants

Over the past twenty-five years, CRAs have played an increasingly critical role in providing information to the international financial markets.¹⁶ Earlier research documented how the Bank for International Settlements, the United States Securities and Exchange Commission, commercial and central banks, pension funds, and finance ministries all tracked CRA ratings to determine capital costs, indicating the rating agencies' importance to global finance.¹⁷ Studies also have found that CRA ratings forewarn of possible economic calamities for shareholders, raising the probability of bond issuer default.¹⁸ Research

⁵Mosley (2003); Simmons (2000); Tomz (2007).

⁶Graham, Johnston, and Kingsley (2018); Lipson (1985).

⁷Grittersová (2020); S&P (2020a).

⁸Rhee (1990).

⁹Eaton and Gersovitz (1984).

¹⁰Beaulieu, Cox, and Saiegh (2012); Cantor and Packer (1996).

¹¹Hajzler (2012, 2014); Minor (1994).

¹²Moody's (2020); S&P (2013).

¹³Kerner and Pelc (2022); Li (2009, 3).

¹⁴Wellhausen (2015).

¹⁵As we discuss later, empirical expropriation research generally focuses on asset seizure. See Hajzler (2012, 2014); Kobrin (1980, 1984); Li (2009); Minor (1994).

¹⁶Afonso, Furceri, and Gomes (2012).

¹⁷Hanusch and Vaaler (2013, 251).

¹⁸Borensztein and Panizza (2009).

also notes that CRAs affect stock market prices¹⁹ and may predict global financial crises,²⁰ although some scholarship find the agencies wanting in that regard.²¹

Among their responsibilities, CRAs also rate bonds and affect interest rates on sovereign issuances.²² CRA bond assessments, based on debt repayment likelihood over a three-to-five-year period,²³ are especially useful for developing country bond issuers, whose economic and political institutions are generally less transparent.²⁴ Further, willingness to pay is private information for which developing country sovereigns, in particular, have incentives to misrepresent, as such countries account for nearly all recent bond defaults. Despite the CRAs' impact on bondholders and bond issuers, until recently, the CRAs did not fully disclose the specific factors, criteria, and weighting used in their assessments. The reason is that CRAs are for-profit firms who collect revenues from the proprietary news they deliver to subscribers.²⁵

The secrecy and significance of the rating process have generated scholarly interest in uncovering bond rating determinants, with economic and political risk factors garnering much attention.²⁶ Economic risk tied to inflation, economic growth, current account balances, and financial reserves are popular macroeconomic indicators because they impact fiscal solvency and debt repayment probability.²⁷ Support for market-oriented reforms (e.g., trade openness) also draws notice, as it affects economic development,²⁸ as do countries operating under International Monetary Fund (IMF) loan arrangements²⁹ and holding a positive reputation for paying off foreign debts.³⁰

CRAs also consider political risk factors, but unlike economic conditions, political risk is more difficult to quantify and requires proxies to gauge the probability of default. Among political risk proxies, some researchers find a “democratic advantage,” showing that democracies reduce fiscal spending,³¹ or are more likely to repay debts based on respect for the rule of law,³² while others observe no regime type advantage.³³ Alternatively, some studies consider executive constraints³⁴ and central bank independence for tying politicians' hands and limiting government spending,³⁵ while others invoke the political business cycle theory that higher spending occurs in election years,³⁶ or that the government's political ideology affects CRA rating assessments.³⁷

Expropriation determinants

The growing importance of CRA bond ratings has occurred nearly simultaneously with renewed interest in the determinants of asset expropriation.³⁸ Expropriation, defined as forced divestment of foreign investor ownership and managerial control across national borders,³⁹ involves government seizure of firms, obliging foreign owners and managers to surrender assets and managerial control

¹⁹Treepongkaruna and Wu (2012).

²⁰Biglaiser, DeRouen, and Archer (2011).

²¹White (2010).

²²Binici and Hutchison (2018); Hanusch and Vaaler (2013); Kaminsky and Schmukler (2001).

²³Gaillard (2011).

²⁴Block and Vaaler (2004); Cantor and Packer (1996); Grittersová (2020).

²⁵Gaillard (2011); Levich, Majnoni, and Reinhart (2002); Moody's (2019b).

²⁶Barta and Johnston (2018, 2023); Cantor and Packer (1996); Saiegh (2005); Vaaler, Schrage, and Block (2005).

²⁷Afonso (2003); Cantor and Packer (1996); Eichengreen and Mody (1998).

²⁸Biglaiser and DeRouen (2007).

²⁹Thacker (1999).

³⁰Rowland (2005); Tomz (2007).

³¹Beaulieu, Cox, and Saiegh (2012).

³²Biglaiser and Staats (2012).

³³Archer, Biglaiser, and DeRouen (2007); Hansen (2022); Saiegh (2005); Tomz (2007).

³⁴Cox and Saiegh (2018).

³⁵Bodea and Hicks (2018); Caldas Montes and Pacheco de Oliveira (2019).

³⁶Block and Vaaler (2004); Vaaler, Schrage, and Block (2005).

³⁷Barta and Johnston (2018, 2023); Vaaler, Schrage, and Block (2006).

³⁸Bak and Lee (2021); Jensen et al. (2020).

³⁹See Hajzler (2012, 2014); Kobrin (1980, 1984); Li (2009).

involuntarily.⁴⁰ Host government expropriation has a long past, with many asset seizures occurring in the early part of the 20th century.⁴¹ The 1960s—mid-1970s reflect the height of expropriation, where host states confiscated more than 1,650 foreign firms,⁴² offering little or no compensation.⁴³ Although the 1980s—early-1990s saw a substantial decline in host government seizures, the years since 1995 have witnessed a bit of an asset seizure resurgence, with hundreds of state takeovers, especially since the 2000s.⁴⁴

There are many reasons for why expropriation occurs. A good place to start is Vernon's (1971) obsolescing bargain work, where investors hold bargaining leverage prior to the initial investment but that the advantage turns to the host country after the capital outlay. Similarly, scholars have developed theories based on power shifts between multinational corporations (MNCs) and host governments.⁴⁵ Expropriation research also rests on the importance of host country characteristics and builds on Dunning's classic model of ownership (firm-specific competitive advantages), location (unique attributes of the host location), and internalization (decreased transaction costs).⁴⁶

More recent expropriation determinant studies stress economic and political factors.⁴⁷ Looking at economic factors, some studies find that difficult economic times lead to expropriations, as states procure revenues from confiscated MNCs,⁴⁸ while others note that asset seizures increase for countries at higher levels of economic development,⁴⁹ fall for states during declining economic conditions,⁵⁰ or witness a curvilinear relationship between GDP per capita and asset seizure,⁵¹ where asset expropriations expand at low levels of economic development and decrease after they exceed a higher economic threshold.

From a political standpoint, political constraints and armed conflict could also impact expropriation risk. Many FDI studies associate high levels of political constraints (i.e., multiple veto players) with enhanced policy stability and predictability, reducing investor risk.⁵² Likewise, multiple veto players and independent courts could help restrain opportunistic political leaders from seizing foreign assets, upholding property rights.⁵³ Conversely, armed conflict has a propensity to increase expropriation risk, as conflict results in policy changes that increase instability,⁵⁴ or that the fiscal demands of armed conflict provoke asset seizures.⁵⁵ Although there are many reasons for why expropriation occurs, including if a country has a history of foreign asset seizure, the literature suggests economic and political factors are largely responsible for asset seizure resurgence.

Expropriation and bond ratings

Although bond rating and expropriation determinants are critical areas of study, no empirical work has integrated the literature and considered the effects of foreign asset seizure on ratings. The closest research is Wellhausen (2015), which studies the positive effect of expropriation on sovereign bond

⁴⁰This definition does not cover government changes to access, laws, regulations, and taxes that increase government revenue streams (i.e., indirect expropriation) (Graham, Johnston, and Kingsley 2018; Li 2009). We later address the effect of indirect expropriation on bond ratings when we distinguish between direct and indirect expropriation.

⁴¹Lipson (1985).

⁴²Hajzler (2012, 2014); Kobrin (1980, 1984); Li (2009); Minor (1994).

⁴³Lipson (1985).

⁴⁴Bak and Lee (2021). See also Graham, Johnston, and Kingsley (2018), who find host countries also restrict the repatriation and transfer of hard currency or require foreign investors to use local currency, limiting investor autonomy.

⁴⁵Bergsten, Horst, and Moran (1978); Kobrin (1980).

⁴⁶Dunning and Lundan (2008).

⁴⁷Bak and Lee (2021); Jensen et al. (2020); Li (2009).

⁴⁸Wellhausen (2015).

⁴⁹Jodice (1980, 189).

⁵⁰Kobrin (1984).

⁵¹Li (2009).

⁵²Jensen (2006, 2008); Li (2006).

⁵³Henisz (2000).

⁵⁴Bak and Lee (2021); Kobrin (1980).

⁵⁵Jensen (2006).

long-term spreads. Using a broader definition of expropriation to include any government action that significantly worsens returns on investment, including regulation changes, taxation increases, and the abolition of tax breaks and subsidies that spur owners to turn to litigation/arbitration, Wellhausen (2015) finds that expropriation activities increase government revenue, improve debt serviceability, and lead to narrower long-term bond spreads (i.e., lower interest rate bonds). Using a one month or six month lag structure, Wellhausen's work indicates that expropriation benefits sovereign bond issuers by increasing government resources and lowering borrower costs.

While expropriation could provide immediate revenues, we maintain that asset seizure (direct expropriation) increases political risk and negatively impacts bond ratings. We come to this expectation, first, based on the connection between expropriation and respect for the rule of law. We argue that, because expropriation is a deliberate decision by policymakers to violate international rules,⁵⁶ CRAs will take notice and lower bond ratings. Unlike the failure to repay debt or bond default that may occur for any number of reasons (e.g., economic hardship) and not necessarily to violate the rule of law, seizing foreign assets is a blatant disregard of international property rights.⁵⁷ Because of the flagrant breach of international laws, we posit that CRAs will see expropriation as a signal that the sovereign borrower is unlikely to respect the rule of law in other ways including making good on debt repayment. Such argumentation fits theoretically with prior work showing that a reputation in one area can have spillover effects in others.⁵⁸ We submit a reputation for expropriation can fuel a status for not honoring other commitments, such as upholding debt repayment, resulting in higher borrower costs. The increasing risk of nonrepayment, in turn, raises the probability of decreased bond ratings.

Second, CRA methodologies,⁵⁹ and personal interviews conducted by a co-author with CRA bond raters, indicate the effect respect for the rule of law has on ratings and how the CRAs consult the World Governance Indicators' (WGI) rule of law measure. In its methodology, S&P (2013) also notes that it accounts for "event risk, including the extreme cases of expropriation and nationalization in the country risk considerations." Expropriations reflect low adherence to the rule of law and property rights protection, which is sub-factor four (Payment Culture/Rule of Law) of the S&P methodology.⁶⁰ Similarly, in its country ceilings methodology, Moody's (2020, 7) contends that under the context of a weak rule of law or a legal environment, "Expropriation of assets or other government intervention may also increase the likelihood of default." Moody's (2020, 8) explicitly mentions that "political risk includes acts of war, civil conflicts, political chaos or confiscation (e.g., expropriation or nationalization)." Further, Moody's (2013) maintains, "Nationalizations have been concentrated in countries with weak institutions and speculative-grade ratings," highlighting that CRAs link expropriation and poor institutions. Since CRAs perceive asset seizure as a sign of a low rule of law, we predict such actions trigger reduced ratings. Hence, we expect respect for the rule of law to serve as a mediating variable between expropriation and bond ratings.

We also anticipate expropriation signals host countries are less likely to attract FDI, reducing the probability of debt repayment. The reason asset seizure dampens capital inflows is because of investment risk and costs.⁶¹ As Li (2009, 3) notes, "Expropriation has never ceased to impose economic costs, because foreign investors have always had to insure against and pay premium for such risk." The loss of foreign capital is important since previous studies have shown that FDI boosts economic growth and development for host states.⁶² FDI is a catalyst for job creation, increased capital and technology flows, management sharing skills, and greater competition in host states.⁶³ Regarding employment, FDI

⁵⁶Graham, Johnston, and Kingsley (2018); Jensen et al. (2020); Lipson (1985).

⁵⁷Lipson (1985). It is possible that not all foreign expropriations are violations of international law. However, we expect CRAs will perceive such acts unfavorably, as expropriation signals lower respect for the rule of law that could have reputational consequences elsewhere, as well as the likely decline in future FDI, raising the risk of debt non-repayment.

⁵⁸Mosley (2003); Simmons (2000); Tomz (2007).

⁵⁹Moody's (2020); S&P (2013).

⁶⁰S&P (2013).

⁶¹Allee and Peinhardt (2011); Kobrin (1980, 1984).

⁶²Agrawal and Aamir Khan (2011); Dreher (2006).

⁶³Dunning and Lundan (2008); Markusen and Venables (1999).

creates jobs directly, and indirectly, for domestic companies serving MNC supply chains, stimulating economic growth.⁶⁴ The technical know-how and managerial expertise from FDI also increase employee productivity,⁶⁵ supporting the competitiveness of domestic firms serving markets at home and abroad.⁶⁶ The combination of job opportunities, economic productivity, and enhanced domestic firm competitiveness all raise government revenues, which is critical for debt repayment. Prior work has documented how CRAs favor market-oriented reforms,⁶⁷ and FDI is a key reform in areas including the privatization of state-owned enterprises (SOEs). Like the rule of law, we thus anticipate that lowered FDI mediates the relationship between asset seizure and ratings. Respect for the rule of law and FDI complement each other, as in both cases investors are dealing with risk in the bond issuer/host state.

Examples from Moody's and S&P also illustrate the CRAs' opposition to asset seizure and its near-term effects on bond ratings. Moody's (2011), for instance, published a report titled, "Sri Lanka expropriation bill dampens a positive credit story" and another titled, "Nationalization risk constrains Bolivia's upside credit potential."⁶⁸ Both Sri Lanka and Bolivia had positive economic conditions, but neither received a positive outlook from Moody's and S&P even lowered Bolivia's long-term bonds. Similarly, Moody's (2012) issued a report titled, "Argentina's appropriation of YPF [a Spanish majority-owned oil company] is credit negative for the sovereign," which heightened concerns about investment political risk, a finding affirmed by S&P (2018). Both Moody's and S&P responded by issuing negative outlooks to Argentina followed by a bond downgrade shortly thereafter. Further, Moody's (2021) wrote that "Belize's 2012 default occurred as a result of expected financing shortfalls from liabilities arising from the appropriation of two utility companies." Likewise, S&P (2020b) remarked that "Privatbank's nationalization is affecting the [Ukraine banking] system's stability."⁶⁹

Conversely, rating agencies look positively on state firm privatization—the opposite of expropriation—and a policy that often involves FDI. As S&P (2019a) noted, Morocco's "budgetary position should gradually improve, supported by the government's comprehensive budgetary strategy and privatization proceeds over the forecast period, to reach 3% of GDP in 2022," issuing a stable outlook. Additionally, S&P (2019b) maintained that it could revise its outlook from negative to stable "if Oman is able to sustainably reduce its accumulation of external debt, for example through fiscal adjustment measures or via privatization of significant SOEs and assets," signifying the budget deficit will slowly decline, aided by privatization proceeds. Oman failed to privatize SOEs in 2019 or 2020 and S&P responded by downgrading Oman's sovereign bonds in early 2020 with Moody's following suit three months later. Further, and specific to FDI, the CRAs singled out Venezuela and Argentina, with Moody's (2013b) writing that because of expropriation "in both Argentina and Venezuela, FDI is below 1% of GDP," an extremely low figure, which has debt repayment implications.

With both expropriation and privatization, the state could obtain financial proceeds that help repay debts, but the CRAs strongly oppose expropriation because of its negative impact on the rule of law and FDI inflows and its decreasing likelihood of debt repayment, while they highly favor privatization. Moreover, as noted before, CRAs employ a 3–5 year window when they rate sovereign bonds and the ratings are fairly sticky (White 2010). The longer time frame and stickier nature make it less likely that a possible temporary surge in government revenues produced by expropriation will outweigh the more impactful harmful effects of declining FDI and lower respect for the rule of law.

Based on the previous discussion, we posit three hypotheses regarding expropriation and sovereign bond ratings:

⁶⁴Rhee (1990).

⁶⁵Barry *et al.* (2003).

⁶⁶Markusen and Venables (1999, 352).

⁶⁷Biglaiser and DeRouen (2007); Grittersová (2020); S&P (2020a).

⁶⁸Moody's (2013a).

⁶⁹Privatbank's nationalization suggests that CRAs interpret nationalizations of domestic private firms similarly to foreign asset seizures. However, our statistical analysis focuses on foreign asset seizures because of data limitations with domestic private firm seizures.

Hypothesis 1: Countries engaging in direct expropriation increase the likelihood of receiving lower average levels of credit ratings.

Hypothesis 2: Low respect for the rule of law mediates between direct expropriation and the likelihood of receiving lower average levels of credit ratings.

Hypothesis 3: Reduced FDI mediates between direct expropriation and the likelihood of receiving lower average levels of credit ratings.

So far, our argument has focused on direct expropriation. However, host governments may also commit indirect expropriations. Sometimes referred to as “creeping expropriation,”⁷⁰ indirect expropriation could include “the government’s seizure of revenue streams through taxation, regulation, or other changes in law.” However, unlike direct expropriation, which provides a windfall profit to the host government, not all indirect expropriations offer such benefits. For example, host state regulatory measures may have more to do with environmental issues than to collect revenues from investors.⁷¹ Unlike direct expropriation that involves a deliberate disregard for property rights and is clear opportunism, investors may perceive indirect expropriation differently. According to Kerner and Pelc (2022, 784) regarding indirect and direct expropriation, “More investors are likely to update their priors about the security of their own investment in the latter case than in the former.” Similarly, after an ISDS arbitration dispute, Wellhausen (2019, 847) wrote that she would “expect more reinvestment in instances when the investor’s formal legal claims do not include direct expropriation,” suggesting a difference between direct and indirect expropriation. We argue that CRAs also will assess direct and indirect expropriation differently and take a stronger stand against direct expropriation because it deliberately violates international rules, likely affects more investors, and signals that the borrower could breach other contracts including sovereign debt repayment, undermining their international credit reputation.

Based on the previous discussion, we propose our final hypothesis:

Hypothesis 4: Countries engaging in direct expropriation increase the likelihood of receiving lower average levels of credit ratings as compared to countries engaging in indirect expropriation.

Research design

We create a country-year panel dataset covering up to 59 developing countries from 1996 to 2016 and employ sovereign bond ratings from Moody’s and S&P to test our hypotheses on the effect of expropriation on CRA bond ratings. We use the 1996–2016 period since this is the timeframe when most developing countries began receiving ratings. The period also includes more than 20 years of rating data per country in most instances, providing a useful test of our argument. We start no earlier than 1996, as the rule of law measure is not available until 1996, and the CRAs specifically mention the variable and its source in their methodology.

Dependent variables

We employ *sovereign bond ratings* from Moody’s and S&P as the dependent variables. Moody’s and S&P are the largest CRAs with the longest history of rating bonds. They are also two of less than ten Nationally Recognized Statistical Rating Organizations in the world. As is customary,⁷² we convert the CRA rating letters to ordinal numbers on a 0–16 scale, with higher scores reflecting better ratings. We obtain the data from the CRAs’ websites.⁷³ We also follow previous research and lead the dependent

⁷⁰Graham, Johnston, and Kingsley (2018, 1786).

⁷¹Kerner and Pelc (2022, 784).

⁷²Block and Vaaler (2004); Vaaler, Schrage, and Block (2006).

⁷³For more information on the ratings, see the following websites from S&P and Moody’s. <https://www.spglobal.com/ratings/en/sector/governments/sovereigns>; <https://www.moody.com/>.

variables by a year as there is often a lag between economic and political changes and rating assessments and lagging helps reduce endogeneity issues.⁷⁴ We also have an unbalanced dataset because Moody's and S&P's do not rate all the same countries and years.

Independent variable of interest and controls

Our main independent variable of interest is foreign asset seizure.⁷⁵ We obtain annual host country *foreign expropriations* from Hajzler (2012, 2014) and Kim, Bak, and Lee (2019) that builds on data developed by Kobrin (1984, 1987), Li (2009), and Minor (1994). We code the data “1” if there are any expropriations in a given year and “0” otherwise. The data cover the largest asset seizures and published works have employed the foreign expropriation measure.⁷⁶ We also distinguish between *direct expropriation* and *indirect expropriation* based on investment disputes occurring in each country in a given year.⁷⁷ To access the type of investment disputes, we use data from UNCTAD's (2024) Investment Dispute Settlement Navigator that specifically track all publicly known ISDS cases initiated under international investment agreements.⁷⁸ To control for other category types of investment disputes, we also include *other claims*, such as fair and equitable treatment (FET).⁷⁹

Our models also contain economic and political controls. Beginning with the economic control variables, we include gross domestic product (*GDP growth*, *GDP per capita* (logged), *inflation* (based on consumer price index), *current account balance* (as a share of GDP), *financial reserves* (% of total external debt), and *trade* (exports plus imports as a share of GDP). Previous research indicates positive macroeconomic conditions (e.g., high GDP growth and GDP per capita, low inflation, and ample financial reserves and current account balances), as well as abundant trade increase the probability of debt repayment.⁸⁰ Current account balance and financial reserves, in particular, also control for pressing fiscal needs, which is likely to influence creditworthiness.⁸¹ We also include economic controls prominently identified as bond rating determinants such as *natural resources* (as a share of GDP), *IMF loan arrangement*, and *bond default history*. Prior studies suggest that resource stocks increase revenue opportunities and lower default risk,⁸² while countries under IMF arrangements signal poor economic situations,⁸³ and a history of default leaves a negative reputation, providing bond issuers with less reason for future repayment given their already poor standing in financial markets.⁸⁴ We obtain

⁷⁴Vaaler, Schrage, and Block (2005).

⁷⁵As discussed earlier, we define expropriation as forced divestment of foreign investor ownership and managerial control across national borders (Kobrin 1984, 1987; Minor 1994; Hajzler 2012, 2014; Kim, Bak, and Lee 2019). As Kobrin (1984, 331) describes, expropriation cases are mostly identified and updated through examining “generalized and secondary sources” of targeted foreign firms only.

⁷⁶Bak and Lee (2021); Lee, Lektzian, and Biglaiser (2023).

⁷⁷Direct expropriation is defined as “a mandatory legal transfer of the title to the property or its outright physical seizure” (UNCTAD 2012, 6). Unlike this, indirect expropriation is defined as “total or near-total deprivation of an investment but without a formal transfer of title or outright seizure” (UNCTAD 2012, 7).

⁷⁸Although the expropriation data by Hajzler (2012, 2014) and Kim, Bak, and Lee (2019) and the ISDS data on direct expropriation claims (UNCTAD 2024) are conceptually identical, we find that they are not fully nested to each other where 82.4% of the observations are identical, while 17.6% of them are different in our sample. There are several possible reasons. First, there may be a time gap between the date of expropriation incident and the date of case filing to the ICSID. The fact that not all ISDS cases are public makes it difficult to identify the exact time of expropriation (Johns, Thrall, and Wellhausen 2020). Second, the cases of direct expropriation in the ISDS data may be oversampled because investors increasingly make claims, though weak or low-merit and not salient, in order to create regulatory chill against governments (Pelc 2017, 561). Lastly, we find that the cases brought to UNCTAD (ISDS cases) are based on treaty violations, excluding cases under investor-state contracts (Johns, Thrall, and Wellhausen 2020, 935).

⁷⁹Kerner and Pelc (2022).

⁸⁰Cantor and Packer (1996); Eichengreen and Mody (1998); Jensen (2003).

⁸¹We also ran models using debt as a control variable, but we lose many cases. Nonetheless, the main results hold and are available from the authors.

⁸²Biglaiser and DeRouen (2007).

⁸³Thacker (1999).

⁸⁴Rowland (2005); Tomz (2007).

economic data for all variables from the World Bank (2022) except for IMF arrangement (“1” for under agreement; “0” otherwise)⁸⁵ and bond default data.⁸⁶

For our political controls, we use *democracy* and *left government*. Some studies find democracy supports higher bond ratings,⁸⁷ while others show respect for the rule of law increases bond ratings.⁸⁸ Scholarship also has located a bias against left parties, as raters predict higher government spending and budget deficits under leftist rule.⁸⁹ We obtain our democracy measure from the Polity5 Project (2020). Polity5 employs a -10 to 10 scale, with higher values indicating more democratic institutions. We collect our left government measure from Beck et al. (2001—updated), coding “1” for leftist executives and “0” for leaders of all other parties. We include descriptive statistics of all variables in the appendix (Table A1).

When we carry out mediation analysis, we employ two mediating variables: *rule of law* and *FDI inflows*. We consult the WGI for our rule of law variable.⁹⁰ As noted earlier, the CRAs specifically mentioned the importance of the rule of law and the WGI measure. The WGI derives the rule of law based on tens of representative and non-representative sources from more than 30 different organizations.⁹¹ Rule of law comes on a -2.5 to 2.5 scale, with higher values signifying better adherence to the rule of law.⁹² We obtain FDI inflows from the World Bank (2022), and measure FDI as a percent of the population size. As noted earlier, expropriations are likely to lessen FDI inflows, reducing revenues to fund countries’ existing debt loads. This creates a link between FDI and creditworthiness, causing a change in CRAs ratings.

Methods

Given our data are time-series and cross-sectional, we use Driscoll and Kraay’s (1998) covariance matrix estimator with year and country fixed effects. We employ a Driscoll and Kraay estimator because it is known to produce “heteroskedasticity- and autocorrelation-consistent standard errors that are robust to general forms of spatial and temporal dependence.”⁹³ We could use panel-corrected standard error (PCSE) with a first-order autocorrelation structure, however, PCSE tends to perform poorly in panel data analysis with relatively few years and a substantial number of countries or other units,⁹⁴ which reflects our sample. As such, we call upon a Driscoll and Kraay estimator.

We also address selection bias concerns that only certain countries, mostly creditworthy ones, get their bonds rated. One could argue that expropriating countries are less likely to borrow on international markets and have a lower chance of receiving a CRA rating (credit access). Therefore, it might imply that expropriations (un)select cases where we observe ratings. To address this selection problem, we follow Beaulieu et al. (2012) and run a Heckman model,⁹⁵ where the first stage estimates the likelihood of countries receiving a rating or not and the second stage estimates countries’ actual credit ratings. We include a variable measuring a country’s export to the United States that could affect the selection process, but not the subsequent ratings from CRAs, the same variable Beaulieu et al. (2012) employed.

⁸⁵IMF data come from the IMF website (<http://www.imf.org/external/np/tre/tad/extarr1.cfm>).

⁸⁶We obtain debt default data from S&P (2020) (<https://www.spglobal.com/ratings/en/research/articles/200518-default-transition-and-recovery-2019-annual-sovereign-default-and-rating-transition-study-11478233>).

⁸⁷Beaulieu, Cox, and Saiegh (2012).

⁸⁸Biglaiser and Staats (2012).

⁸⁹Barta and Johnston (2018); Vaaler, Schrage, and Block (2006).

⁹⁰Moody’s (2020); S&P (2013). Because expropriation is one variable out of several the WGI uses to create its rule of law measure, collinearity issues are possible in regression analysis. We ran variance inflation factors (VIFs) in models including the rule of law as a control variable and found low VIFs (1.22 in the S&P model and 1.23 in the Moody’s model), reducing multicollinearity concerns.

⁹¹Kaufmann, Kraay, and Mastruzzi (2010).

⁹²Kaufmann, Kraay, and Mastruzzi (2010). Previous bond rating research has typically included rule of law as a control variable, treating it as a confounder. However, we posit that rule of law mediates the relationship between expropriations and sovereign bond ratings and omit it from the primary analysis to avoid post-treatment bias (Acharya, Blackwell, and Sen 2016).

⁹³Hoechle (2007, 282).

⁹⁴Beck and Katz (1995).

⁹⁵Heckman (1979).

Lastly, we address potential endogeneity issues raised in our estimations. While we argue that expropriations decrease ratings, it is possible that countries with limited access to international financial markets, due to a lower rating, rely on expropriations to acquire capital. A failure to control for potential endogeneity between expropriations and bond ratings would produce biased results for our estimates. To address the issue, we employ a system of regression and probit equations using conditional mixed-process (CMP) models.⁹⁶ The first stage of this model estimates ratings and expropriation is the second stage dependent variable. Based on expropriation work,⁹⁷ we model the likelihood of expropriation using economic growth, GDP per capita, political constraints, armed conflict, and non-expropriation years.⁹⁸ We also control for time variance using decade dummies.

As relevant instruments are critical for obtaining consistent estimates and should be strong predictors of the endogenous variable (*Expropriation*) and exogenous to the dependent variable (*Credit Ratings*), we follow Lee, Lektzian, and Biglaiser (2023) and use a total number of regional expropriations, except a host country's own expropriations, as our instrument. The reasoning is that as the number of expropriations increases, individual countries will likely join the trend or are less likely to be restricted when there are opportunities. However, the number of regional expropriations should not directly influence credit ratings. Rather, the effect of regional expropriations indirectly affects ratings since it makes expropriations in each country more likely. Empirically, we find this variable provides variation across time and countries. The regression results also show that the *F* statistics of the instrument in the expropriation equations are 16.14 in the S&P equation and 12.38 in the Moody's equation, well above the threshold suggested by Staiger and Stock (1997), indicating our instrument appears to satisfy the relevance condition as a predictor of expropriation. To check the validity of the instrument variable, we also ran the Sargan test and found the null of valid instruments was not rejected ($p = 0.122$ in the S&P equation and $p = 0.422$ in the Moody's equation). This again indicates that regional expropriations do not have a direct effect on credit ratings, while its effect only goes via its impact on each country's expropriations.

Results

In Table 1, we report the results of expropriations on S&P and Moody's bond ratings. Models 1 and 2 reveal that expropriation has a negative and statistically significant effect at the $p < .01$ level on both S&P and Moody's bond ratings. Government revenue collected from foreign asset seizures does not seem to raise bond ratings in expropriating host states. Substantively, we find that the occurrence of expropriation reduces S&P ratings by 10.9% (0.48-point drop) and lowers Moody's ratings by 8.7% (0.39-point drop). The results in Table 1 appear to offer support for Hypothesis 1 that sovereign states observe lower average levels of credit ratings following foreign asset expropriation. Given the possible pitfalls of fixed-effects analysis, we also run the models without country or year fixed-effects. As presented in Table A2 (see the Appendix), the results appear robust to different model specifications.⁹⁹ The findings indicate expropriation is a violation of international property rights,¹⁰⁰ providing a clear signal to CRAs about the increased probability of debt nonrepayment.

In terms of the control variables, the results complement findings in the bond ratings literature.¹⁰¹ Among economic controls, and consistent with the literature,¹⁰² higher economic growth, GDP per

⁹⁶Roodman (2011).

⁹⁷Li (2009); Jensen et al. (2020).

⁹⁸To measure political constraints, we employ the PolconIII variable developed by Henisz (2000). For *Non-Expropriation Years* data, we consult Hajzler (2014). Data for armed (internal and internationalized) conflict come from Petterson and Öberg (2020).

⁹⁹We also ran the models using total number of expropriations, instead of the dichotomous measure, and report the results in Table A4 (see the Appendix). Again, the results show that expropriations are negative and statistically significant ($p < .01$ in both models). Although the marginal effects are expected to diminish as the number of expropriations increases, we leave its rigorous tests for a future task, given that there are only a few observations with multiple expropriations in our sample. In addition, we test our models across different time lags and find that the negative effects of expropriation impact S&P ratings for two years after the event, while its effects on Moody's ratings only last for one year after (see Figure A1 in the Appendix).

¹⁰⁰Jensen et al. (2020); Lipson (1985).

¹⁰¹Afonso (2003); Biglaiser and Staats (2012); Cantor and Packer (1996); Eichengreen and Mody (1998).

¹⁰²Jensen et al. (2020); Li (2009).

Table 1. The effect of expropriation on credit ratings (*FE with DKSEs, 1996-2016*)

	Model 1	Model 2
<i>DVs:</i>	<i>S&P, $t+1$</i>	<i>Moody's, $t+1$</i>
<i>Expropriation</i>	-0.476*** (0.145)	-0.384*** (0.128)
<i>Growth</i>	0.037* (0.020)	0.031 (0.019)
<i>GDP per capita</i>	0.768*** (0.082)	0.788*** (0.082)
<i>Inflation</i>	-0.477** (0.224)	-0.377* (0.202)
<i>Trade</i>	0.535 (0.480)	1.541** (0.577)
<i>Natural resources</i>	2.058 (1.479)	3.796* (1.835)
<i>Default</i>	-0.706*** (0.211)	-0.865*** (0.197)
<i>Current account</i>	-3.501* (1.692)	-4.120** (1.906)
<i>Financial reserves</i>	0.011*** (0.002)	0.012*** (0.004)
<i>Left</i>	-0.603** (0.273)	-0.598* (0.309)
<i>Polity</i>	0.029 (0.036)	0.068* (0.039)
<i>IMF</i>	-0.354** (0.163)	-0.592*** (0.157)
<i>Constant</i>	-0.535 (0.480)	-0.843 (0.635)
<i>N</i>	732	714
<i>R²</i>	0.42	0.41
<i>N. of countries</i>	47	47

Note: We included year and country dummies in all models but did not report them due to space limits. Standard errors are in parentheses: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$ (two-tailed tests).

capita, natural resources, and fiscal reserves have a positive effect on bond ratings, while inflation, current account imbalances, bond default, and operating under IMF agreements tend to have negative impacts on bond ratings. Importantly, pressing fiscal need seems to lower bond ratings, as indicated by the positive effect of fiscal reserves and negative impact of current account imbalances. Among political controls, left government has a negative effect, while democracy tends not to reach statistical

significance. The finding for democracy is not unexpected as previous work has found that democratic developing countries do not necessarily support higher ratings.¹⁰³

Next, Table 2 presents the results of a Heckman selection model. First, we find selection is not a critical concern in the S&P model and appears to be weak in the Moody's model. The parameter rho (ρ), capturing the correlation between the errors in the first- and second-stage equations, is not significant in Model 1 ($p < 0.163$), while weakly significant in Model 2 ($p < 0.062$). The results indicate that estimating the effect of expropriation on credit ratings in a single-equation model appears not to be biased in the S&P model, but the bias may not be ignored in the Moody's model. Although the equations could be weakly correlated, we find expropriation is negative, but statistically insignificant in the Moody's model, indicating that expropriation does not have any effect on the selection process (credit access). Meanwhile, we find that expropriation sends a negative signal even to credit access before S&P ratings ($p < .01$). Lastly, Models 1 and 2 for credit ratings in Table 2 provide findings similar to Table 1, again lending support to Hypothesis 1 that expropriations raise the risk of lowered bond ratings.

In Table 3, we present our results using CMP models that allow us to control for potential endogeneity between expropriations and bond ratings. Consistent with the results reported in Table 1, Table 3 shows the coefficient on the instrumented *Expropriation* variable is negative and statistically significant in both models ($p < 0.01$), where S&P and Moody's ratings are the dependent variables. This again suggests that, even after controlling for potential endogeneity, expropriations increase the likelihood of lowered bond ratings. Additionally, we find there is an endogenous relationship between expropriations and credit ratings. The results of Models 1 and 2 indicate that both *Expropriation* and *CRA ratings* are negative and statistically significant at the $p < 0.01$ level, signifying that expropriations increase the likelihood of lowered bond ratings and, at the same time, an increase in bond ratings reduces the likelihood of asset seizures by a host country. This implies that countries with a higher bond rating find it easier to attract foreign capital and therefore are less motivated to expropriate foreign assets.

Regarding Hypotheses 2 and 3, we conduct mediation analysis to offer added insights on the ties between expropriation and bond ratings. In the theoretical section, we discussed how governments who engage in expropriation tend to hold lower respect for the rule of law and attract less FDI, which leads to reduced debt repayment likelihood. We use mediation analysis and rule of law and FDI flows as mediating variables to test the expropriation and bond ratings linkage. To conduct mediation analysis, we use a statistical package developed by Hicks and Tingley (2011), which is based on a technique advanced in Imai, Keele, and Tingley (2010), and Imai, Keele, Tingley, and Yamamoto (2010). This approach is derived from a formal framework for causal inference and permits sensitivity analysis regarding key identification assumptions investigating potential unmeasured confounding along the causal pathway between the intervention and outcomes, and between the mediator and outcomes.¹⁰⁴

In Figure 1, we diagrammatically present the mediation results among expropriation, rule of law, and Moody's and S&P bond ratings. Figure 1 shows that expropriation is a significant predictor of lowering respect for the rule of law where its coefficient is -0.151 ($p < .01$) in the S&P rating model and -0.152 ($p < .01$) in the Moody's rating model. We find rule of law, in turn, positively and significantly predicts ratings by S&P (1.725 , $p < .01$) and Moody's (2.104 , $p < .01$). Moreover, even when we add the rule of law to the models, expropriation is still negative and significant against the CRA ratings (-0.530 , $p < .10$ in the S&P model and -0.587 , $p < .05$ in the Moody's model), providing further evidence that the rating agencies are prone to lower bond ratings following asset seizures. Similarly, Figure 2 shows that expropriation is a significant predictor of decreasing FDI inflows where its coefficient is -39.694 ($p < .10$) in the S&P rating model and -48.421 ($p < .05$) in the Moody's rating model. We also find FDI inflows positively and significantly predict ratings by S&P (0.001 , $p < .05$) and Moody's (0.001 , $p < .01$), indicating CRAs prefer sovereign bond issuers attract capital from foreign investors.

Next, we report the mediation test statistics below Figures 1 and 2. First, the results confirm that lower respect for the rule of law and decreased FDI mediated the impact of expropriation on CRA ratings. The effect of expropriation mediated through the rule of law is 28.8% in the S&P rating and

¹⁰³Hansen (2022); Saiegh (2005).

¹⁰⁴Hicks and Tingley (2011).

Table 2. The effect of expropriation on credit ratings (*FE with Heckman Selection, 1996-2016*)

	Model 1	Model 2
<i>DV: CRA ratings</i>	S&P, $t+1$	Moody's, $t+1$
<i>Expropriations</i>	-0.472*** (0.164)	-0.387** (0.170)
<i>Growth</i>	0.041*** (0.014)	0.029* (0.015)
<i>GDP per capita</i>	0.753*** (0.066)	0.780*** (0.070)
<i>Inflation</i>	-0.479*** (0.121)	-0.369*** (0.129)
<i>Trade</i>	0.444 (0.441)	1.669*** (0.468)
<i>Natural resources</i>	2.823 (1.747)	3.444* (1.999)
<i>Default</i>	-0.867** (0.343)	-0.793** (0.367)
<i>Current account</i>	-3.282*** (1.101)	-5.041*** (1.293)
<i>Financial reserves</i>	0.011*** (0.001)	0.012*** (0.002)
<i>Left</i>	-0.632*** (0.157)	-0.592*** (0.168)
<i>Polity</i>	0.031 (0.021)	0.072*** (0.023)
<i>IMF</i>	-0.353*** (0.112)	-0.618*** (0.121)
<i>Constant</i>	-1.454* (0.808)	-2.817*** (0.858)
<i>DV: credit access</i>		
<i>Expropriation</i>	-1.306*** (0.472)	-0.086 (0.472)
<i>Growth</i>	-0.013 (0.028)	-0.036 (0.031)
<i>GDP per capita</i>	1.879*** (0.297)	3.389*** (0.516)
<i>Trade</i>	0.794 (0.943)	0.008 (1.244)
<i>Natural resources</i>	1.338 (2.962)	-2.153 (3.607)

(Continued)

Table 2. (Continued)

	Model 1	Model 2
<i>Default</i>	0.021 (0.666)	2.010 (1.430)
<i>Current account</i>	2.182 (2.426)	-0.289 (2.328)
<i>Polity</i>	0.357*** (0.067)	0.485*** (0.119)
<i>US trade</i>	1.491*** (0.201)	1.382*** (0.271)
<i>Constant</i>	-11.685*** (1.580)	-12.183*** (2.081)
<i>N</i>	1,350	1,364
<i>(Selected)</i>	727	704
<i>(Nonselected)</i>	623	660
ρ (<i>rho</i>)	0.38 (0.279)	0.44 (0.239)
<i>Wald test χ^2</i>	3360.65	3706.96

Note: We included year and country dummies in all models but did not report them due to space limits. Standard errors are in parentheses. Standard errors for rho are estimated by 100 times of bootstraps: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$ (two-tailed tests).

31.8% in the Moody's rating. The mediated effect through increased FDI inflows is 7.7% in the S&P rating and 10.9% in the Moody's rating.¹⁰⁵ Next, we conducted a sensitivity analysis to check whether the sequential ignorability assumption is problematic in the mediation analysis. To perform this, we use a technique developed by Hicks and Tingley (2011) that calculates the threshold for correlation between the error terms of the relationships between expropriation and the rule of law (ε_{i2}) and the rule of law and the CRA ratings (ε_{i3}). We find that the thresholds are .264 in the S&P model and .313 in the Moody's model. We then calculate the residuals for the relationships between ε_{i2} and ε_{i3} and test them for correlation, finding they are correlated at .069 in the S&P model and .098 in the S&P model. Both cases are below the threshold, suggesting that the sequential ignorability assumption is not problematic in the mediation analysis. Similarly, in tests with FDI inflows, we find the correlations (.006 in the S&P and .010 in the Moody's) are below the threshold (.077 in the S&P and .102 in the Moody's), respectively, again providing evidence that the sequential ignorability assumption is not problematic in the mediation analysis. The results offer backing for Hypotheses 2 and 3, showing that rule of law and FDI mediate between expropriation and bond ratings, respectively.

Lastly, we test the effects of direct and indirect expropriation on bond ratings and present the results in Table 4. First, as seen in Models 1 and 2, we find that investment disputes, in general, have a negative and significant effect ($p < 0.01$) on bond ratings. However, when it comes to direct and indirect expropriations, the models present different results, where direct expropriation claims are negative and statistically significant ($p < 0.01$) in both S&P and Moody's ratings, while indirect expropriation claims are negative, but not statistically significant.¹⁰⁶ Substantively, the results reveal that the addition of each direct expropriation claim decreases the rating by 12.3% in S&P and 12.9% in Moody's. These findings support Hypothesis 4, where CRAs assess direct and indirect expropriation differently and take a

¹⁰⁵We also test the effect of expropriation acts on mediators across different time lags and present the results in Figure A2 (see the Appendix). We find that the effect of expropriation on the rule of law stays steady across different time periods, while its impact on FDI inflows lasts up to two years after the acts.

¹⁰⁶We also run Heckman selection models and find similar results to Table 4 where direct and indirect expropriation have different effects on the bond ratings (see Table A3 in the Appendix).

Table 3. Expropriation and credit ratings (*Conditional Mixed Process, 1996-2016*)

	Model 1	Model 2
<i>DV: CRA ratings</i>	<i>S&P</i>	<i>Moody's</i>
<i>Expropriation</i>	-2.115*** (0.192)	-1.768*** (0.277)
<i>Growth</i>	0.015 (0.015)	-0.012 (0.016)
<i>GDP per capita</i>	0.813*** (0.067)	0.840*** (0.072)
<i>Inflation</i>	-0.491*** (0.104)	-0.512*** (0.122)
<i>Trade</i>	0.386 (0.440)	1.307*** (0.472)
<i>Natural resources</i>	-0.677 (1.714)	3.138 (2.002)
<i>Default</i>	-0.676** (0.326)	-0.725** (0.346)
<i>Current account</i>	-4.932*** (1.022)	-6.199*** (1.242)
<i>Financial reserves</i>	0.010*** (0.001)	0.011*** (0.002)
<i>Left</i>	-0.575*** (0.149)	-0.473*** (0.165)
<i>Polity</i>	0.016 (0.021)	0.057** (0.023)
<i>IMF</i>	-0.364*** (0.109)	-0.600*** (0.123)
<i>Constant</i>	0.282 (0.818)	-1.912** (0.892)
<i>DV: Expropriation</i>		
<i>Credit ratings</i>	-0.166*** (0.029)	-0.099*** (0.028)
<i>Growth</i>	-0.010 (0.013)	-0.005 (0.014)
<i>GDP per capita</i>	0.020* (0.011)	0.002 (0.012)
<i>Political constraints</i>	-0.095 (0.321)	0.086 (0.323)
<i>Armed conflict</i>	-0.192 (0.200)	-0.511** (0.241)

(Continued)

Table 3. (Continued)

	Model 1	Model 2
<i>Non-expropriation years</i>	-0.007*	-0.007*
	(0.004)	(0.004)
<i>Regional expropriations</i>	0.065***	0.064***
	(0.014)	(0.014)
<i>1990s</i>	-0.360	-0.365
	(0.241)	(0.234)
<i>2000s</i>	-0.111	-0.036
	(0.130)	(0.133)
<i>Constant</i>	-0.646***	-0.954***
	(0.212)	(0.210)
<i>N</i>	988	997

Note: We included year and country dummies in all models with ratings as a dependent variable, but did not report them due to space limits. Standard errors are in parentheses: *** p<0.01, ** p<0.05, * p<0.1 (two-tailed tests).

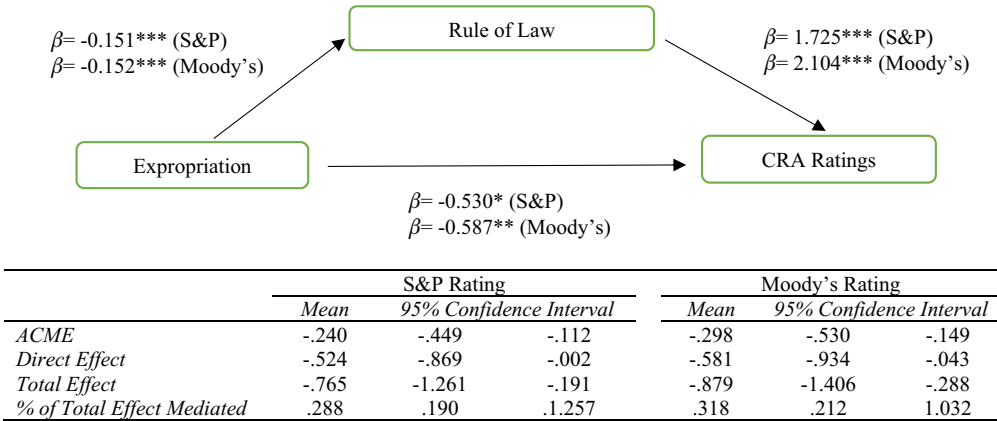


Figure 1. Test of mediation through rule of law.

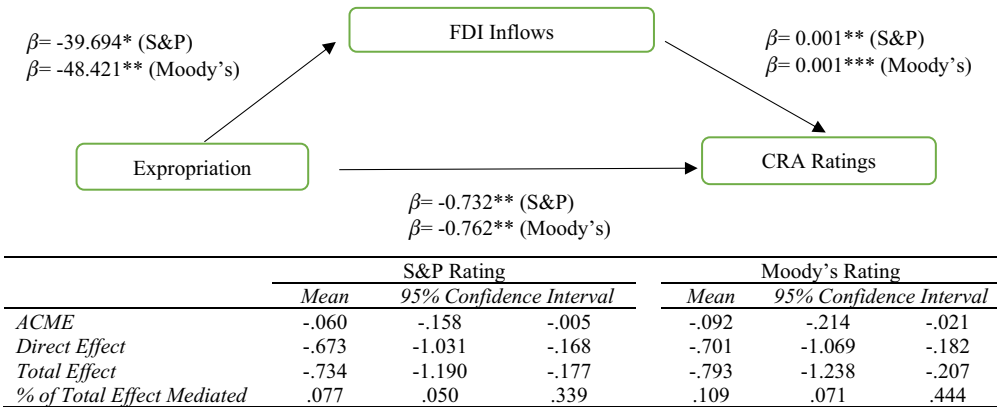


Figure 2. Test of mediation through FDI inflows.

Table 4. The effect of ISDS on credit ratings (*FE with DKSEs, 1996-2016*)

	Model 1	Model 2	Model 3	Model 4
<i>DVs:</i>	<i>S&P</i> , $t+1$	<i>Moody's</i> , $t+1$	<i>S&P</i> , $t+1$	<i>Moody's</i> , $t+1$
<i>All ISDS cases</i>	-0.074*** (0.015)	-0.057*** (0.013)		
<i>Direct expropriation claims</i>			-0.124*** (0.041)	-0.130*** (0.040)
<i>Indirect expropriation claims</i>			-0.048 (0.034)	-0.035 (0.025)
<i>Other claims</i>			-0.073** (0.032)	-0.025 (0.046)
<i>Growth</i>	0.043* (0.022)	0.033 (0.022)	0.041* (0.020)	0.032 (0.021)
<i>GDP per capita</i>	0.898*** (0.119)	1.003*** (0.100)	0.895*** (0.117)	0.998*** (0.101)
<i>Inflation</i>	-0.364* (0.179)	-0.265* (0.139)	-0.367* (0.180)	-0.268* (0.138)
<i>Trade</i>	0.546 (0.382)	1.029 (0.639)	0.562 (0.380)	1.055 (0.618)
<i>Natural resources</i>	2.051* (0.991)	3.842** (1.367)	1.993* (1.007)	3.817** (1.359)
<i>Default</i>	-0.760*** (0.154)	-0.910*** (0.204)	-0.745*** (0.148)	-0.901*** (0.198)
<i>Current account</i>	-1.944* (0.936)	-1.933 (1.257)	-1.991** (0.921)	-2.021 (1.184)
<i>Financial reserves</i>	0.002*** (0.001)	0.002** (0.001)	0.002*** (0.001)	0.002** (0.001)
<i>Left</i>	0.189 (0.209)	0.166 (0.275)	0.185 (0.208)	0.154 (0.268)
<i>Polity</i>	-0.033 (0.029)	0.010 (0.041)	-0.037 (0.032)	0.003 (0.040)
<i>IMF</i>	-0.319** (0.127)	-0.458*** (0.152)	-0.309** (0.125)	-0.455*** (0.142)
<i>Constant</i>	0.642 (0.479)	0.100 (0.712)	0.668 (0.462)	0.144 (0.678)
<i>N</i>	866	880	866	880
<i>R²</i>	0.39	0.37	0.39	0.37
<i>N. of countries</i>	56	59	56	59

Note: We included year and country dummies in all models but did not report them due to space limits. Standard errors are in parentheses: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$ (two-tailed tests).

stronger stand against direct expropriation because it violates international rules and signals that the borrower could breach other contracts including debt repayment.

Conclusion

Previous work had investigated the determinants of sovereign bond ratings and factors associated with foreign asset expropriation, but no empirical research had explored the impact of asset seizure on bond ratings. The importance of risk to CRAs, bondholders, and MNCs motivated our interest to study the effects of expropriation on bond ratings. Building on scholarship indicating that a government's reputation in one area could affect its honoring commitments elsewhere,¹⁰⁷ we observed that expropriation increased the probability of lowered bond ratings. Using mediation analysis, we specifically found that reduced respect for the rule of law and less FDI served as mediating variables between expropriation and decreased bond ratings. We also used ISDS data to differentiate between direct and indirect expropriation and saw that direct expropriation had a much larger impact for decreasing bond ratings than indirect expropriation, suggesting that CRAs perceive direct expropriation more negatively because it flagrantly violates international rules, undermining debt repayment reputations.

We recognize the limitations of our research. First, we cannot assert a causal relationship between expropriation and lowered sovereign bond ratings, as we have not interviewed bond raters on the matter. However, publicly available methodologies from Moody's (2020) and S&P (2013) and several country examples provide evidence CRAs take asset seizure seriously as a nonrepayment risk. Moreover, mediation analysis appears to back an association between expropriation and bond ratings. Second, our models contain a fairly small sample of cases because most developing countries did not seek CRA bond rating services until the 1990s, and the WGI's respect for the rule of law variable did not become available until 1996. Further, there is limited data for current account balance and finance reserves, which are critical fiscal repayment control measures. Notwithstanding the limitations, our study employs more than twenty years of data for most countries in the sample, containing more than 700 cases in each model.

Our study offers opportunities for forthcoming study. Future scholarship might want to consider the effects of political conflict on bond ratings. Studies have used conflict as a control variable, but research might disaggregate conflict and assess how contentious elections, protests, coups, and intrastate disputes impact bond ratings. Additionally, our study examines the two largest CRAs whose headquarters are in the United States and who may hold a US home bias.¹⁰⁸ There are smaller CRAs who operate outside the US. Future studies might explore what happens with the bond ratings of non-US rating agencies following expropriation.

This research holds implications for developing world economies. First, for most developing countries, attracting foreign capital is critical to promote economic growth and development.¹⁰⁹ To that end, previous research has shown that expropriation, broadly defined, generates revenue and reduces bond spreads, increasing lower-cost capital in the short term (less than a year).¹¹⁰ However, our study finds a negative association between direct expropriation and FDI, lowering capital inflows, and decreasing bond ratings, compelling expropriating states to raise bond interest rates to attract investors. Higher interest rates also tend to increase the probability of repayment difficulties and default risk.¹¹¹ Rather than asset seizure producing potential benefits in the bond markets, our research suggests that direct expropriation appears to have negative impacts for developing countries' sovereign bonds in the expropriation year and a year or two after.

Second, as noted earlier, sovereigns have incentives to misrepresent their willingness to repay debt obligations, offering private information that assures their good financial standing to receive higher

¹⁰⁷Mosley (2003); Simmons (2000); Tomz (2007).

¹⁰⁸Fuchs and Gehring (2017).

¹⁰⁹Dreher (2006).

¹¹⁰Wellhausen (2015).

¹¹¹Borensztein and Panizza (2009).

bond ratings and issue lower interest rate bonds. However, this misrepresentation conflicts with the CRAs' job to use proprietary information and algorithms to produce products that help investors overcome informational deficits and better optimize their decision-making. We believe that because of possible sovereign misrepresentation, CRAs are highly attuned to financial signals, of which expropriation provides useful information about governments' lack of respect for foreign commitments. The inherent information gap between sovereigns and CRAs highlights the benefits of utilizing expropriation as an indicator of debt repayment likelihood. Indeed, the CRAs' use of new technologies that involve real-time analysis and record expropriation acts (e.g., Geoquant from Fitch) reinforce how CRAs are incorporating expropriation events into their measures of political risk. This suggests the positive relationship between expropriation and debt default and the overall significance of our research study.

Third, our study indicates the negative effects especially of direct expropriation on developing countries' bond ratings relative to indirect expropriation. Conforming with Wellhausen (2015, 753), differences between expropriations could generate revenue allowing the government "to avoid liabilities, say, by breaking contracted investment incentives or unilaterally canceling a contract. They also occur when the government forces sales of new equity stakes to government actors, demands taxes in excess of contracted amounts, or otherwise acquires property without due compensation. These actions have long-term balance sheet implications." We fully agree that if direct or indirect expropriations have long-term revenue benefits, it may make financial sense for host countries to expropriate. While our data are not granular enough to identify whether direct or indirect expropriations are revenue generating, we control for current account balances and financial reserves, which revenue generating expropriations should impact. More importantly, the coefficient for the expropriation variable is negative in every model and is consistently statistically significant for direct expropriation. Further, in the unlagged models in Table 3, expropriation has a negative and significant impact on bond ratings, implying that CRAs appear to view expropriation negatively in the current year, the following year, and maybe even longer. Part of the reason for the different results between Wellhausen (2015) and this paper may be because bond spreads are generally more volatile while CRAs provide more stable ratings (White 2010). Another explanation is that the temporal units of analysis are different, where our study examines the yearly effects of expropriation on credit ratings, while Wellhausen (2015) takes one month (or a 6-month moving average of cumulative expropriations) as the unit of analysis, which is temporally shorter than ours. The final reason is that Wellhausen (2015) employs error correction models, while we use different methods including a Driscoll and Kraay estimator, Heckman selection model, and CMP model. The different methods used may account for the contrasting findings. To be clear, our paper is not intended as a comparison with the work of Wellhausen (2015). Instead, our goal is to show how the literature has not addressed the effects of expropriation on bond ratings and how respect for the rule of law and FDI are critical factors.

In the end, the evidence suggests that CRAs do not see direct expropriations as a net boon for bondholders. Instead, we find that direct expropriations will likely reduce FDI inflows and decrease respect for the rule of law. Rather than seeing such expropriations from a revenue generating schematic, and very differently from the privatization of states assets, CRAs seem to view such actions in a negative light, as lower FDI inflows and decreasing rule of law impact the government's ability and willingness to repay debt obligations. The bottom line is that CRAs oppose foreign asset expropriation and see respect for the rule of law and attracting FDI as crucial for developing countries to receive higher bond ratings.

Supplementary material. The supplementary material for this article can be found at <https://doi.org/10.1017/bap.2024.42>

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