

Economic shock, political shifts, and sovereign theft: The domestic and international determinants of investment expropriation

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Abstract

In this paper we address how external factors shape government decisions to break or uphold contracts, specifically focusing on how economic shocks shape leader decisions to expropriate from investors. Contrary to the conventional wisdom, we argue that governments are less likely to expropriate from investors during periods of economic crisis for two reasons. First, governments are more sensitive to the reputation costs of expropriations during periods of crisis. Second, governments become more sensitive to the levers other governments may use to punish for expropriating. Specifically, the threat of the suspension of foreign aid or IMF funding has more bite during periods of crisis. We test these theories using two cross-national data sets on investment expropriations. The first dataset is a count of all known expropriation events from 1975 to 2002 that has been used by political scientists and management scholars. The second is contract level data from the United States Overseas Private Investment Corporation (OPIC). This data allows us to examine 2,602 contracts covering investments in 93 high-risk countries from 1973 to 2008. Our empirical results show that expropriations of foreign investment are less common during periods of crisis, and that countries that are more dependent on foreign aid or under IMF agreements are much less likely to expropriate from investors.

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1 Introduction

International political scholarship examining the political economy of foreign direct investment (FDI) has focused on how the political risks facing multinational enterprises affect investment location choice. Multinational enterprises operating in foreign markets are exposed to a number of potential risks, ranging from the explosion of political violence, government restrictions on the repatriation of capital, and regulatory uncertainty.¹ While relatively rare, government choices to expropriate from investors or breach contracts with firms are often the most important risks for firms operating abroad (MIGA, 2012). Firms either avoid countries with propensities to expropriate or engage in costly activities to insure their investments or limit the ability or incentive of governments to renege on contracts post-investment.²

Political science research has focused on how cross-national factors, such as the level of democracy, quality of courts or international agreements affect political risk for multinational enterprises and affect flows of foreign direct investment.³ In the next section we briefly review this literature but our main point is that despite this scholarly attention to FDI, we have a very limited understanding of the over time factors influencing government decisions to break contracts with multinationals. What explains the waves of expropriations in the 1960s and 1970s and the new series of investment disputes in the past ten years?

While much of the conventional wisdom on patterns of expropriation is based on economic crisis triggering investment disputes, we argue that existing theoretical and empirical work on trade and investment liberalization actually supports periods of financial crisis as times of governments' providing more market friendly policies during bad times. Rather than predicting expropriations of investment during crisis,

¹For an overview see Jensen (2006).

²One strategy is to engage in joint ventures with local firms. See Henisz (2000).

³For an overview see Jensen et al. (2012).

we predict that expropriations are less likely during periods of crisis for two reasons. First, governments' concerns about the reputational consequences of expropriation are greater during periods of crisis. Second, investors can directly or indirectly employ their home governments to pressure expropriating countries. This includes the suspension of foreign aid and blocking of IMF loans. These capital flows are more important during periods of crisis.

We test the relationship between expropriation and economic crisis using two data sets. The first dataset is a count of all known expropriation events from 1975 to 2002 that has been used by political scientists and management scholars. The second is contract level data from the United States Overseas Private Investment Corporation (OPIC). This data allows us to examine 2,602 contracts covering investments in 93 high-risk countries from 1973 to 2008.

Our empirical findings are inconsistent with work highlighting the role of crisis in triggering expropriations. We find that governments are much less likely to break contracts with multinationals during periods of economic crisis. Relatedly, we also find strong support for our theory on the role of international factors constraining expropriation behavior. We show that countries that are dependent on foreign aid or currently under IMF agreements are much less likely to engage in expropriations.

Our findings fit into a broader literature in political science. Academics have long debated how international market forces shape domestic policy choice. While the research is nuanced, two broad camps have emerged in political science, with one set of studies focusing on how international market forces discipline governments (efficiency theories), forcing governments to enact neo-liberal economic policies. For example, Rudra (2008) finds that the market disciplining effects of trade and capital mobility are especially prevalent in government social security programs. Others, such as Garrett (1998), argue that disrupting influence of globalization can lead to greater levels of government intervention. While there is scant evidence for a "race

to the bottom” in many policy areas across countries, our research suggests that economic crisis does have a disciplining effect on governments.⁴ Governments that are the most prone to engage in expropriations become much, much less likely during periods of economic crisis.

Our paper proceeds as follows. Section 2 provides a general overview of the existing literature on political risk and expropriation of investments. Section 3 introduces our theory on the relationship between economic crisis and expropriation. In Sections 4 and 5 we introduce our research design, data, estimate strategy and results. Section 6 concludes.

2 Multinational Corporations and the Expropriation of Investment

Research on the relationship between multinational corporations and domestic politics has seen a revitalization in recent years. This is partially driven by the explosion by investments of multinational enterprises, foreign direct investment (FDI), in recent years.⁵ Much of this research has focused on government decisions to expropriate, or nationalize, the investments and income streams of multinational corporations. Government expropriations come in a number of forms. These events can be massive, country-wide expropriations that are coupled with regime changes such as the fall of the Shah in Iran and the nationalization of businesses in Cuba. Or these expropriations can be targeted at specific sectors or even individual firms. In some cases, governments made regulatory decisions that adversely affect firms to fall under the category of expropriation. Recent expropriations tend to fall under the banner of “creeping expropriation” where governments use relation, selective enforcement of

⁴For an overview see Rudra (2008).

⁵See United Nations Conference on Trade and Development (UNCTAD, 2008).

laws, to expropriate the assets or income streams of firms.⁶

What ever the form of expropriation, academic interest in expropriation and political risk may also be due to the complex pattern of tensions between governments and firms that have ebbed and flowed over time. Waves of government expropriations in the 1960s and 1970s, some as extreme as the mass nationalizations in Iran and Cuba, were followed by a period of calm in the 1980s.⁷ The warming of governments towards multinational corporations and the steep reductions in expropriations lead some scholars to predict a permanent change in the patterns of government expropriations (Minor, 1994).

This optimism has been shaken with recent expropriations of investments in Argentina, Bolivia and Venezuela, and major regulatory changes that breached contracts in Russia. In a survey of executives, MIGA (2012) finds that 37% and 9% of respondents had directly experienced a breach of contract and/or expropriation respectively in past three years. Executives also claimed that the potential for breach of contract and expropriations had a very high or high impact on firm operations in 57% and 34% respondents respectively.

Thus, while rare, expropriations are extremely important to firms and we only have a limited understanding of what triggers expropriation events. One common theme in political science scholarship is the role of democratic institutions in affecting political risk. Jensen (2003) and Li and Resnick (2003) examine the impact of democratic institutions on FDI flows. While Jensen (2003) argues that democratic institutions increase FDI flows, Li and Resnick (2003) show that this increase is through democracies having a stronger rule of law. Other aspects of democracies, for example stronger anti-monopoly laws, reduce FDI flows.

More recently, scholars have attempted to measure expropriation behavior more

⁶See Kobrin (1979, 1980, 1984); Jodice (1980); Jensen (2006)

⁷See Vernon (1998).

directly. Jensen (2008) uses political risk insurance pricing to examine how political institutions influence expropriation risk. He finds that constraints on the executive in democratic regimes are the key feature reducing political risk. Li (2009) examines expropriation events, showing that while democracies and authoritarian regimes both engage in expropriations, democracies have lower propensities to expropriate.⁸

Democracy isn't the only institutions capable of constraining elites. Staats and Biglaiser (2012) conduct an original survey of investors operating in Latin America, finding that judicial institutions have a major impact on political risk. The recent explosion of bilateral investment treaties (BITs) is partially attributed to their ability to both signal openness to FDI and to constrain governments from reneging on contracts.⁹

Yet these projects are limited in their ability to explain the puzzles on the timing of expropriations. Why is it that some high risk countries offer protections to foreign investors, while at other times they choose to expropriate? What time-varying factor explains these decisions to expropriate or to uphold contracts?

An excellent starting point to address this question is a classic paper on expropriation by Cole and English (1991). In a formal model of government decision-making, Cole and English (1991) examine government decisions to expropriate based on a cost benefit analysis of the current benefits of expropriation minus the future investment losses. Their theoretical model doesn't provide a clear prediction. On the one hand, risk accepting governments will often expropriate investments, specifically in the natural resource sector, when output prices are high. This is labeled "opportunistic" expropriation. On the other hand, certain levels of risk aversion can lead govern-

⁸See Oneal (1994); Li and Resnick (2003); Jensen (2003, 2006); Busse (2004); Busse and Hefeker (2007).

⁹Kerner (2009) provides an excellent overview and empirical test of these signalling and constraining aspects of BITs. See Guzman (2006) for a classic study on the diffusion of BITs. See Yackee (2008) and Allee and Peinhardt (2010) on the variation in dispute mechanisms across BITs. See UNCTAD (1998), Neumayer and Spess (2005), Salacuse and Sullivan (2005), and Kerner (2009) for published studies of the impact of BITs on FDI.

ments to expropriate when output prices are low. These are labeled “desperation” expropriations.

Recent evidence has suggested that “desperation” expropriations of FDI are common. Wells and Ahmed (2007) document a number of investment disputes, linking many of these disputes to economic crisis. In many cases, infrastructure investments become unviable in the wake of major financial crisis. Petrova and Bates (2012) argue that economic shocks can trigger increased political risks, although this is pronounced in intermediate regimes (neither fully democratic nor fully autocratic).

Argentina provides a clear example of expropriation behavior during periods of economic crisis. During the 2002 Argentinian financial crisis, the government broke numerous contracts with foreign companies, not only restricting their ability to repatriate capital, but the outright rewriting of contracts with electricity providers (Moran, 2004). In 2012 the Argentinian President, along with both chambers of the legislature, enacted legislation authorizing the expropriation of a major oil investment. This expropriation is occurring during what has been described as a looming fiscal crisis.

Despite these obvious cases of expropriating during times of economic distress, alternative arguments have stressed the role of markets in tempering government decisions. In a highly contentious area of research, scholars have used similar arguments to linking economic crisis to neoliberal reforms. Haggard and Maxfield (1996) argue that governments often liberalize their capital account during periods of crisis, signaling promarket position of the government. Similar arguments have been made about the role of economic crisis in triggering neoliberal reform more generally (Abiad and Mody, 2003; Biglaiser and DeRouen, 2004)

While there is a clear logic to this argument, empirical work in the area is highly contested. A series of empirical studies find no or weak relationships between crises and capital account liberalization. For example, Allan Drazen (2001) find a positive relationship between inflation and economic reform, but this doesn’t hold for other

measures of economic distress. In a recent study, Pepinsky (2012) finds that governments are more likely to close their capital account during crisis. Although the empirical debate remains unsettled, this literature provides clear guidance on the opposing empirical predictions of different theoretical arguments on the relationship between crisis and economic liberalization.

Much of the academic literature on investment expropriation has been divorced from these debates, despite the obvious parallels. While the fundamental features of foreign direct investment are quite different from other forms of capital in a number of important ways, political risk is still a major factor in investment decisions. Government decisions to expropriate investments are tempered by reputational costs. During periods of crisis, what choice does a government make?

Links between crisis and increased investment disputes have been noted by non-academics. In a volume on political risk insurance, (Hansen, 2005, 12) notes: "Emerging markets, particularly Indonesia, Pakistan, Thailand, the Russian Federation and Argentina during their respective economic crises have been a rich source of troubled investments." A recent survey by the Multilateral Investment Guarantee Agency (MIGA) finds that investors believe that crisis increases risk. When asked about the impact of a financial crisis on expropriation risk, 29% and 37% indicated that crisis had a major or minor increase risk respectively. Only 10% of respondents thought that financial crisis lead to decreased (7% minor, 3% major) risk. Similar results hold for the impact of recession on expropriation risk. 15% of respondents indicated recession had a major increase in political risk and 44% indicated it lead to a minor increase in risk.

In this paper we argue that although there is a temptation for governments to use expropriations as a form of redistribution during crisis, the potential reaction of international financial markets constrains this behavior. The same MIGA survey found that one of the biggest blows to government reputation is the expropriation of an in-

vestment. While this finding may seem obvious, the important point is that even a selective expropriation (for example, a single power provider or oil producer) sends a powerful signal to markets that has serious repercussions for the government's ability to attract capital.

3 A Model of Political Risk and Economic Crisis

In this section we provide a decision-theoretic model that examines host government behavior towards FDI. We are specifically interested in finding the conditions under which it is optimal for a host government to expropriate assets from their foreign investors. Once these conditions are expressed, we analyze how their behavior changes during an economic crisis.

3.1 The Model

In this simple model, we assume that foreign investors enter prior to the unfolding of an economic crisis. Rather than model the full process of choosing an investment location, we simplify our model by examining how economic crisis affects the treatment of existing investors. This behavior towards existing investors then has effects on future FDI flows.

Given our assumption the existence of FDI, our model starts where nature (N) determines whether or not an economic crisis occurs in the host country. This assumption of exogenous crisis may seem strong, but existing work on economic crisis supports the view that while many speculative bubbles emerge through a combination of private decisions and government policies, the timing of when these bubbles burst are much more difficult to predict.¹⁰ For simplicity we assume that the economic

¹⁰See Kerner (2009)

crisis is exogenous and focus on leader decisions in the wake of a crisis.

In response to a crisis, a leader in the host government (L) decides whether or not to expropriate the foreign investment.¹¹ To capture the rich variance in potential government involvement in the investment, denote G ($G \geq 0$) as the amount L contributes to the average foreign investment project and α ($\alpha \geq 0$) as the return on that contribution.¹² Let ω_i ($\omega_i \geq 0$) be the value of the investment upon expropriation, where $i \in \{1, 2\}$ is the state of the world selected by nature in the previous move (let $i = 1$ be ‘crisis’ and $i = 2$ be ‘no crisis’).

This first part of the model addresses the decision of governments with regard to the benefits of expropriation. Yet upon expropriation, however, government’s are subject to direct and indirect costs. The most direct cost is retaliation from foreign actors (R ; where $R \geq 0$). This most likely takes the form of indirect sanctions from the home government of the investor, forcing compensation through investment arbitrations, withheld foreign aid, IMF intervention, or diplomatic pressure.

A less direct cost is that expropriation can disrupt post-crisis revenue streams from FDI.¹³ In words, if the host government can avoid expropriation (by playing $\neg E$), they can receive the benefit of continued investment during the recovery phase, albeit at a rate discounted by their regard for post-crisis investment. Denote $\delta \in (0, 1)$ as the degree to which L discounts this future investment. Thus, in a non-crisis state ($i = 2$), governments who do not expropriate receive a payoff of: $G\alpha + \delta G\alpha = G\alpha(1 + \delta)$. Governments who expropriate receive a payoff of: $\omega_2 - R$.

¹¹We focus on the decision of the individual leader. Jensen (2008) argues that powerful executives, as opposed to legislatures or other actors, are likely to expropriate from investors. In a survey of investors, MIGA (2012) finds that vast majority of investors believe that expropriations originate from the executive branch.

¹² G may vary from country to country, depending on the costs of building infrastructure for investment, marketing/investment promotion, joint ventures, etc. We envision α as a composite of tax revenue from the international corporations, profits from joint ventures, and income tax revenue from the public (we allow for the possibility that FDI increases the domestic productivity of workers, raising incomes, thus generating more income tax revenue for a given tax rate).

¹³For simplicity we focus on the impact of expropriation on future government revenue. This model is general enough to include other benefits, such as job creation or technology transfer.

In a crisis, governments face the same decision to expropriate, but often with significantly less revenue coming from domestic sources. Relative to domestic revenue, FDI and other sources of foreign income may represent an even more valuable revenue stream during a crisis, particularly when they deliver a stable flow of rents or provide a social function, such as employment (generating tax revenue from domestic citizens).¹⁴ For this reason, we assume that during a crisis the relative value of FDI is, in general, greater by a factor of π , where $\pi > 1$. We believe that this is not a controversial assumption, but one that relates to existing scholarship on the role of crisis in triggering expropriation. Yet we believe that the following is less clearly recognized in the literature. We argue that the prospect of retaliation (from countries or international organizations that contribute to revenue generation) is also more daunting.

The value of *expropriated* foreign assets (ω) may also shift during a crisis. However, unlike collecting the revenue stream from FDI (i.e. when L plays $\neg E$), expropriation entails the transaction costs of seizure, new operation costs, and the costs of learning; all of which may be more costly during a crisis because of resource and time constraints. Thus, while foreign assets may represent a relatively higher expropriation value during a crisis, they likely carry inflated costs as well. For this reason, while the expropriation value is likely to change during a crisis, it is generally unclear in which direction (we elaborate more below). Integrating π into the payoffs, we see that, in a crisis state ($i = 1$), government's who do not expropriate receive a payoff of: $\pi G\alpha + \delta\pi G\alpha = \pi G\alpha(1 + \delta)$. Government's who expropriate receive a payoff of: $\omega_2 - \pi R$. Figure 1 provides an overview of the structure.

With this logic, we next determine the conditions under which a government will

¹⁴During most economic crises, government's may experience higher unemployment rates, tighter credit markets, depreciated currencies, or domestic bankruptcies. In short, their ability to generate revenue from domestic sources is affected, often dramatically. Notice that this is not necessarily the case with foreign inputs, which may stem from countries which are unaffected by the crisis.

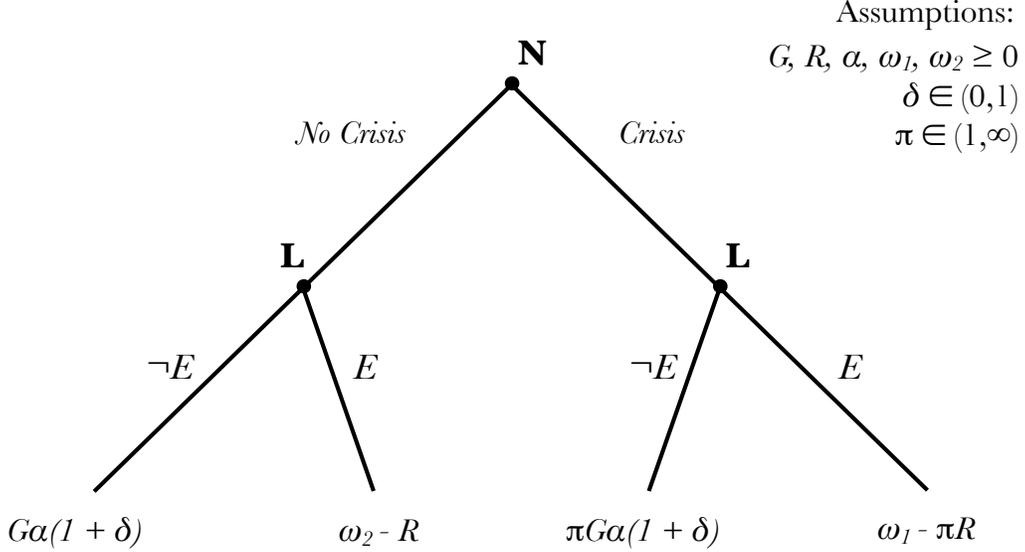


Figure 1: An illustration of the logic. Following the determination of the economic climate by nature (N), a host government (L) chooses whether or not to expropriate that investment.

be incentivized to expropriate. Let us begin with the non-crisis state of the world ($i = 2$). Looking at figure 1, we see that L will choose E when: $\omega_2 - R > G\alpha(1 - \delta)$. Solving for δ , this reduces to:

$$\delta < \frac{\omega_2 - R}{\alpha G} - 1. \quad (1)$$

Thus, L will only expropriate in non-crisis time when their regard for future investment is sufficiently low to satisfy equation 1. Flipping the inequality provides the condition for which reputation with investors will be sufficiently important to prevent expropriation.

Now suppose that N determines the state of the world is an economic crisis ($i = 1$). Following the same process, we see that L will choose E when: $\omega_1 - \pi R > \pi G\alpha(1 - \delta)$. Solving for δ , this reduces to:

$$\delta < \frac{\omega_1 - \pi R}{\pi \alpha G} - 1. \quad (2)$$

Like condition 1, condition 2 shows that L will only expropriate during a crisis when their regard for future investment is sufficiently low. Here again, reputation with investors can be critical to preventing expropriation. Next, we examine how economic crisis affects the expropriation response from the host government. We then briefly discuss how foreign aid dependence and the prospect of IMF intervention can affect expropriation behavior.

3.2 The Effect of Crisis and Foreign Dependence on Expropriation

In the previous section we focused on a leader's decision to expropriate from investors using a relatively straightforward cost-benefit calculation. During an economic crisis, do the benefits of expropriating outweigh the costs, or does the future loss of investment weigh even more heavily on a government's decisions to expropriate during a crisis? Our model provides a clear prediction on this question. Comparing equations 1 and 2, we see that crisis will make expropriation less likely when:

$$\begin{aligned} \frac{\omega_1 - \pi R}{\pi \alpha G} - 1 &< \frac{\omega_2 - R}{\alpha G} - 1 \\ \Rightarrow \pi &> \frac{\omega_1}{\omega_2}. \end{aligned} \tag{3}$$

Above, we assume that $\pi > 1$. Thus, this equation will be satisfied if the expropriation value (including the costs) of the average foreign investment project is no greater in crisis (ω_1) than it is in non-crisis times (ω_2). While some projects may offer relatively higher benefits during a crisis, such as the value of nationalizing an industry to generate employment, this expropriations entail costs as well. we suggested above that the costs of expropriation may also be higher. Many expropriated businesses require injections of new capital, or other costs to the government in the short term. Thus, while there may be projects that go against our expectation of less expropriation dur-

ing a crisis (e.g. projects that are vital to infrastructure and which must be controlled during a crisis), for a large subset of FDI, expropriation may be more hassle than it's worth during a crisis.

Note that, while this logic would apply if $\pi = 1$, π may be large enough that even more critical projects will no longer be expropriated: the condition will be satisfied so long as ω_1 is less than $\pi \cdot \omega_2$. Our empirical section will adjudicate this point but, for now, our logic suggests that an economic crisis should have a mitigating effect on the likelihood of expropriation. Thus, our first empirically testable hypothesis is the following:

***Hypothesis 1:** During an economic crisis, host governments will be less likely to expropriate from foreign investors.*

There are a variety of other implications that can be drawn from this simple theory, and one of the most straightforward, and we believe most important, is about the role of home government pressure on countries that expropriate. We specifically focus on the bilateral tool of withholding aid and the multilateral tool of cutting a government off from IMF support. In the derivation of equation 1 ($\delta < \frac{\omega_2 - R}{\alpha G} - 1$) and equation 2 ($\delta < \frac{\omega_2 - \pi R}{\pi \alpha G} - 1$), we see that increasing R (the retaliatory potential) decreases the numerator, making it more difficult for the δ -criterion to be satisfied. This leads to our second empirically testable hypothesis:

***Hypothesis 2:** Dependence on foreign aid and signing IMF agreements will decrease the likelihood of expropriation.*

Our simple logic tells a story about how regard for future investment interacts with economic duress, given the domestic resource constraints and the inflated costs of destabilization during a crisis, but also how, in both economic crisis and non-crisis times, the prospect of a costly response from foreign nations and organizations can decrease the likelihood of expropriation, strengthening property rights abroad.

4 Research Design, Data, and Methodology

The previous section builds a decision theoretical model on a leader's choice to expropriate. We note that there are countervailing forces during a crisis. On one hand, there may be greater incentives to expropriate; on the other hand, the direct and indirect costs of expropriating increase. We argue that these increases in costs dominate the government's decision, but ultimately, this is an empirical question.

As a first to test our two hypotheses, we utilize existing expropriation events data that has been used by numerous scholars. Our dependent variable is the number of expropriations in a country in a given year. The data are from Li (2009) and Hajzler (2011) which include expropriations in 66 developing countries from 1975 to 2002.¹⁵

To examine the effect of financial crises on the timing of expropriations, we use the dataset from Laeven and Valencia (2008), which details three types of financial crises—banking crises, currency crises, and debt crises. While the measurement of crisis requires judgement, we utilize an existing measure of crisis that has been used in numerous studies. We operationalize crisis as the total number of *financial crises* starting in the previous year as the key independent variable. Our results aren't especially sensitive to different codings of crisis or alternative lag structures.¹⁶

To test our second hypothesis we examine how IMF support and foreign aid dependence affect expropriation propensity. We employ two variables—*IMF agreement* and *foreign aid*. The data on the IMF agreements are from Dreher (2006), which provides information about four IMF arrangements.¹⁷ We code this variable as 1 when

¹⁵The data from Li (2009) are originally gathered from Kobrin (1980), Kobrin (1984), and Minor (1994), and cover time period 1971-1990. We supplement the data up to 2005 with the expropriation data taken from Hajzler (2011). Due to the missingness and time periods covered in other variables, the final sample covers 66 countries and 28 years, from 1975 to 2002.

¹⁶We also dichotomized crisis into 1, indicating at least one crisis, and 0 otherwise. As an alternative to a one-year lag, we also tested all models using two-year and three-year lags. The results remain robust when different measures of crises are used.

¹⁷These four arrangements are IMF Standby Arrangement, IMF Extended Fund Facility Arrangement, IMF Structural Adjustment Facility Arrangement, and IMF Poverty Reduction and Growth Fa-

a country is under at least one of these arrangements for at least 5 months in a particular year and 0 otherwise. The foreign aid variable is the logarithm of total aid a country received in a given year, and the data are from the World Bank's World Development Indicators (WDI).

We also include a number of control variables motivated by theory and previous research on expropriation. We include a measure of government partisanship, to examine if there are differences between left and right governments. We use a binary variable *left government* indicating the years when the government is left-oriented with respect to economic policy. The data on left governments are from the Database of Political Institutions (Keefer, 2010). Leftist parties or politicians are more likely to launch anti-market policy right after their inauguration, so we also code another variable *shift to left* indicating the years when there is a shift to the left. The measurement of partisanship isn't without criticism, where the focus on left versus right both ignores other dimensions of partisanship, and undoubtedly has errors due to the simply coding of partisanship across a large number of countries. We note that our results are robust with the exclusion of this control variable.

In addition, we include a battery of other control variables. *FDI* is the total amount of inward of FDI as a percentage of GDP. This variable measures a country's dependence on foreign capital. The logarithm of *GDP per capita* and its squared term are used to examine if the relationship between development and expropriations is curvilinear (Jodice, 1980). *Economic growth* is the annual GDP growth rate. *Trade openness* is the total amount of import plus export as a percentage of GDP. *Government spending* is the annual amount of government consumption as a percentage of GDP. All the data for these variables are from the WDI database.

The level of *democracy*, measured by the standard 0-20 Polity index, is used to test whether democratic countries are less likely to expropriate. *Resource rent* is the logged

cility Arrangement.

amount of rents from energy resources, and the data are from Hamilton and Clemens (1999). Resource rich countries may be more likely to expropriate because they are less sensitive to reputational costs (Jensen and Johnston, 2011). We also include a variable *Post Cold War* indicating years after 1991, because the international system and thus the pattern of expropriations have changed rapidly since the end of Cold War (Li, 2009).

The dependent variable is discrete and nonnegative count of the occurrence of expropriations; the data are time-series cross-sectional, which is a structure of multilevel data. We thus employ a multilevel Poisson model and allow for varying intercepts across the country to control for country heterogeneity (Gelman and Hill, 2007). All the independent variable, except for *IMF agreement*, *left government* and *shift to left*, are lagged one year behind the dependent variable to avoid simultaneity or reverse relations.

5 Analysis of Expropriation Events

Table 1 presents the results. Model 1 is the baseline model, in which we include only control variables. In Model 2, we allow *financial crises* to enter the model. As can be seen, the effect of crises on expropriations is negative and statistically significant, meaning that governments are less likely to expropriate foreign assets following a financial crisis, supporting our first hypothesis. Other things being equal, a financial crisis in the previous year leads to a 67% reduction of expropriation acts.

In Model 3 and Model 4, we examine the mechanisms through which crises reduce expropriations. In Model 3, we include *IMF agreement*, and the result shows that it has a negative and statistically significant effect on expropriations. This means that governments are less likely to expropriate when they are under IMF arrangements. Other things being equal, when a country is under at least one IMF agreement, the

Table 1: Determinants of investment expropriations, 1975-2002

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Financial crises		-1.015 (0.459) **	-0.752 (0.462)	-0.885 (0.455)*	-1.016 (0.460) **	-0.942 (0.472) **
IMF agreement			-1.495 (0.295) ***			
Foreign aid (logged)				-0.694 (0.121) ***		
Left governments					0.523 (0.304)*	
Shift to left						1.996 (0.292) ***
FDI (% GDP)	0.056 (0.065)	0.055 (0.065)	0.068 (0.065)	0.078 (0.064)	0.058 (0.064)	0.066 (0.065)
log(GDP per capita)	3.240 (1.793)*	3.302 (1.788)*	3.058 (1.782)*	5.508 (2.283) **	3.441 (1.822)*	3.012 (1.759)*
log(GDP per capita) squared	-0.202 (0.126)	-0.207 (0.125)*	-0.198 (0.125)*	-0.409 (0.166) **	-0.214 (0.127)*	-0.186 (0.123)
Economic growth	0.001 (0.023)	-0.011 (0.024)	-0.009 (0.023)	-0.020 (0.024)	-0.014 (0.024)	-0.008 (0.023)
Trade openness	-0.001 (0.007)	-0.001 (0.007)	0.001 (0.007)	-0.004 (0.007)	0.000 (0.007)	-0.002 (0.007)
Government spending	-0.019 (0.023)	-0.020 (0.024)	-0.024 (0.024)	-0.018 (0.024)	-0.026 (0.024)	-0.013 (0.024)
Democracy	-0.045 (0.024)*	-0.041 (0.024)*	-0.040 (0.024)*	-0.017 (0.026)	-0.052 (0.025) **	-0.064 (0.025) ***
Resource rent (logged)	-0.040 (0.022)*	-0.039 (0.022)*	-0.043 (0.023)*	-0.024 (0.025)	-0.041 (0.022)*	-0.041 (0.022)*
Post Cold War	-1.165 (0.330) ***	-1.207 (0.330) ***	-1.158 (0.334) ***	-1.028 (0.360) ***	-1.154 (0.332) ***	-1.049 (0.330) ***
Number of observations	1,545	1,545	1,545	1,513	1,540	1,540
Number of countries	66	66	66	66	66	66
Log likelihood	-278.9	-275.2	-258.6	-247.7	-270.6	-254
AIC	579.9	574.4	543	570	567	534
BIC	638.7	638.5	613	640	636.5	603

Notes. Standard errors are in parentheses. * p < .1; ** p < .05; *** p < .01.

number of expropriations is reduced by 78%. It is also noteworthy that, in Model 3, the coefficient of *financial crises* turns statistically insignificant, indicating that *IMF agreement* may account for the effect of *financial crises*. In other words, it is likely that governments abstain from expropriating during crises because they turn to IMF for support in crisis times.

In Model 4, we replace *IMF agreement* with *foreign aid*. The result shows that foreign aid has a negative and statistically significant effect on expropriations, suggesting that governments are less likely to expropriate foreign investments when they receive more aid from abroad. Notice that after *foreign aid* enters the model, the magnitude of the coefficient for *financial crises* decreases, implying that governments may avoid expropriating FDI during crisis times because they need foreign assistance. This coefficient, however, remains statistically significant, meaning that the need for foreign aid is only a partial explanation of governments' reduced expropriations during crises.

In Model 5 and Model 6, we test the effect of political changes on expropriations. Model 4 includes *left government*, which has a positive and statistically significant coefficient, suggesting that left-oriented governments are more likely to expropriate. Other things being equal, when a left government is in power, there is a 69% increase in the number of expropriations. Model 6 includes *shift to left* instead, and the result indicates a much stronger effect on expropriations in the year when there is a shift to the left. Overall, both Model 5 and Model 6 suggest that left governments are more likely to engage in expropriations than right or centrist governments and that they are even more likely to carry out expropriations in the year they are inaugurated.

In addition to the main findings, Table 1 indicates some results that are worth mentioning. First, economic development and expropriations have an inverted-U relationship. Countries of medium wealth are more likely to expropriate than poor countries, but this likelihood decreases when countries are more developed. One plausible explanation for this is that the poorest countries of the world attract very

little FDI and thus have very little opportunity to expropriate from investors. Second, democratic governments are less likely to expropriate, consistent with the theoretical expectation that democracies care more about reputation. Third, contrary to our expectation, resource rents have a negative effect on expropriations. Finally, the number of expropriations is largely decreased in the post Cold War period, which may be attributed to the rapid increase in international institutions since the 1990s.

6 Survival Analysis of US Investments

The previous section examines the likelihood of expropriation events in a given country year. Our main finding is that we are less likely to observe expropriations during periods of economic crisis and that countries that are dependent on foreign aid or IMF support are also less likely to expropriate in a given year. Unfortunately, this research design isn't without flaws. Specifically, we do not know which investors were not expropriated, and thus our statistical models only tell half of the story. Some countries, such as Argentina, have attracted a large number of investors. During periods of crisis, some of these investors have been expropriated. But for a given investor, do periods of economic crisis trigger expropriations?

To investigate the robustness of the results in Table 1, we replicate the analysis with a new dataset and an alternative statistical estimator. Existing scholarship has counted the number of expropriations in a country and our analysis in Table 1 follows this literature. But, in this section we will examine individual investment projects in high risk emerging markets. The data on these investments are from Overseas Private Investment Corporation (OPIC) and contain information on every investment insured through the agency from 1973 to 2000.¹⁸ The data also include information on claims

¹⁸OPIC is a government agency providing political risk insurance contracts to United States private investors against the risks of expropriations, currency inconvertibility and risks of war in developing countries and countries in transition from non-market to market economies (Koven, 1981).

and claim settlements. During this period, out of the total 2,602 investments, there were 23 expropriation acts. Thus, even in these high risk countries expropriations are rare events.

Previous scholarship on multinational corporations shows that over time host countries increase their negotiation power against foreign investment (Grieco, 1982). Thus, it is pertinent to include duration of time in analyzing expropriation acts. Moreover, we do not observe some of the expropriations acts, although the most current foreign investments continue to face expropriation risk. Our data are generally censored. One can choose to discard missing information, but this may cause bias and loss of information in parameter estimates (Allison, 2010; Yamaguchi, 1999). Survival models can deal with censored observations adequately and involve the modeling of time to event data (Yamaguchi, 1999). And OPIC data, because of its structure, provides us a unique opportunity to use survival models to analyze expropriation acts.

We organize the data as time-series cross-sectional, and the unit of analysis is investment year. To model expropriation risk we define both the outcome and duration of investments. The outcome variable is the investment status. Investment status is equal to 1 if the investment was expropriated by the host country, equal to 2 if the investment period ended without expropriation and 0 if the data are censored. While we do not have information about the exact ending timing of the investment period, we know the starting year and that most investment insurance contracts are for no more than 15 years in duration.¹⁹ Thus we assume that investments are not expropriated (survived) if there is no expropriation event within 15 years. Our measure of duration is the number of years the investment survives before exiting from the host

¹⁹In the data, there are several investments that are clearly short term projects such as construction of a dam, modernization of a power plant. Assuming that these investments face an expropriation risk after 15 years may bias our results. Therefore, we believe that 15 years is acceptable time-span for the investments.

country with either expropriation or termination of the investment period.

In our data we have two modes of termination: investments can end with expropriations or by the termination of the investment period and the occurrence of one of these events prevents the occurrence of the other. We employ a competing risk model to consider these multiple outcomes. The competing risk model we use in this paper implements a semiparametric proportional hazard model for subdistribution (also known as cumulative incidence function) as proposed by Fine and Gray (1999). The cumulative incidence estimate of the model is a function of the hazard of both failures (Gooley et al., 1999). Thus it estimates the probability of expropriation when competing risks are present. Moreover, as in the Cox Model, this model does not require the researcher to specify or parameterize time-dependency. Thus, we do not have to make assumptions about the nature and shape of the baseline model.

Table 2 reports the results from the competing risks survival analysis. As can be seen, although the results on *financial crises* are in the expected direction, they fail to achieve statistical significance. One possibility is that expropriations are rare events, and that even countries that experience a crisis may only expropriate an investor or two from a potentially large pool of existing investors. In any case, our results do not find a clear relationship between crisis and expropriations. Alternatively, the results on *IMF agreements* and *foreign aid* strongly support the findings in Table 1. They both reduce the likelihood of expropriation acts.

Figure 2a shows that within five years of investment the probability of expropriation in a country under an IMF program is approximately five times less than in a country that is not in an IMF program. Similarly, Figure 2a shows that the risk of expropriation decreases significantly in countries that receive more than the mean value of foreign aid. On the other hand, the probability of expropriation in a country that receives minimum amount of aid is 0.1 percent within five years of investment.

With regard to control variables, the results from competing risk analysis confirm

Table 2: Determinants of expropriations, competing risk survival model 1973-2008

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Financial crises		-0.341 (0.512)	-0.327 (0.681)	-0.321 (0.537)	-0.372 (0.546)	-0.322 (0.447)
IMF agreement			-1.423 (0.559)**			
Foreign aid (logged)				-0.360 (0.122)***		
Left governments					0.263 (0.770)	
Shift to left						-0.269 (0.986)
FDI (% GDP)	-0.005 (0.094)	-0.007 (0.092)	-0.016 (0.083)	-0.018 (0.108)	-0.013 (0.088)	-0.001 (0.010)
log(GDP per capita)	11.276 (5.632)**	11.848 (6.123)**	11.196 (5.235)**	11.569 (5.234)**	11.288 (5.801)*	11.332 (5.725)**
log(GDP per capita) squared	-0.794 (0.378)**	-0.795 (0.371)**	-0.796 (0.344)**	-0.833 (0.336)***	-0.794 (0.385)**	-0.798 (0.377)**
Economic growth	-0.174 (0.037)***	-0.180 (0.038)***	-0.179 (0.037)***	-0.172 (0.038)***	-0.180 (0.038)***	-0.185 (0.045)***
Government spending	0.060 (0.062)	0.057 (0.061)	0.037 (0.052)	-0.037 (0.057)	0.054 (0.069)	0.056 (0.063)
Trade openness	-0.015 (0.017)	-0.014 (0.017)	-0.009 (0.015)	-0.010 (0.015)	-0.013 (0.019)	-0.013 (0.018)
Democracy	-0.165 (0.081)**	-0.161 (0.078)**	-0.137 (0.068)**	-0.144 (0.079)*	-0.165 (0.077)**	-0.159 (0.079)**
Resource rent(logged)	-0.027 (0.038)	-0.028 (0.037)	-0.016 (0.038)	-0.011 (0.032)	-0.026 (0.037)	-0.030 (0.035)
Post Cold War	0.479 (0.704)	0.484 (0.708)	0.601 (0.657)	0.795 (0.696)	0.507 (0.721)	0.472 (0.714)
Number of observations	26519	26519	26273	25116	26444	23989
Number of countries	93	93	91	91	93	93
Log likelihood	-97.3	-97.0	-94.5	-95.2	-96.9	-96.9

Notes. Standard errors are in parentheses. * p < .1; ** p < .05; *** p < .01.

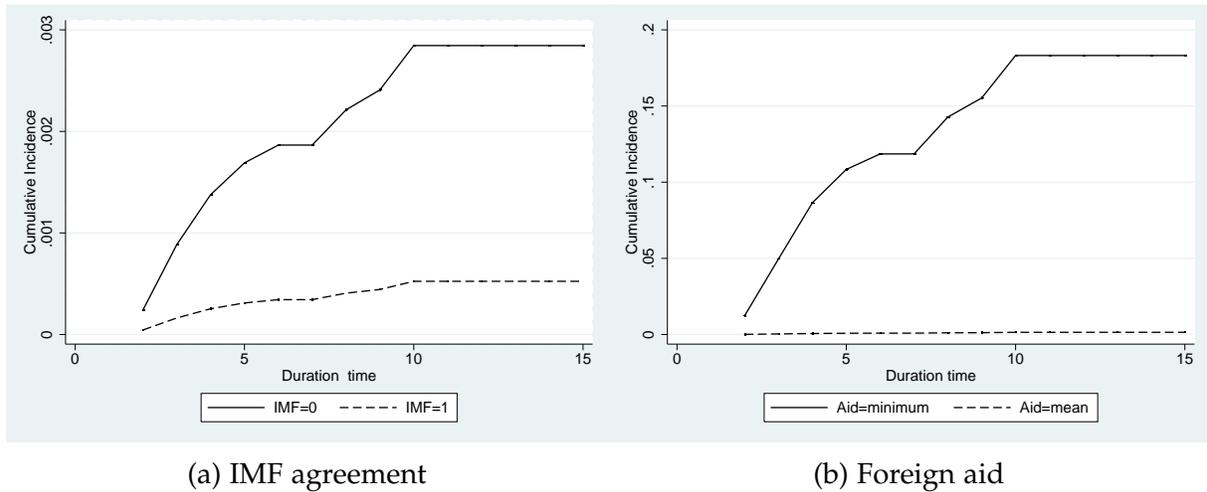


Figure 2: Cumulative hazard function

the findings in Table 1 that the effect of GDP per capita on expropriation is curvilinear. Countries with low and high level of economic development are less likely to expropriate than countries with medium wealth. Similarly, democracies remain less appropriative than autocracies. One striking difference from Table 1 is that economic growth now reduces expropriation risk across all models, which could be due to different samples.

7 Conclusion

The choice of governments to break the rule of law is an unexplored topic in international political economy research. While numerous projects have examined how political institutions limit the ability of governments to expropriate from foreign investors, these time invariant factors can not explain waves of expropriations over time. In this paper we directly address the timing of investment expropriations, arguing that external factors largely shape government decisions to expropriate from investors.

Contrary to the conventional wisdom on the link between economic crisis and the breaking of contracts, we argue that governments are less likely to expropriate from

investors during times of financial crisis. One explanation for this is indirect. Cash strapped governments are less likely to renege on contracts during a crisis in ways that harm present and future investment flows. Thus international financial markets discipline governments from expropriating of investors.

Second, we argue that home governments have the ability to punish host governments that expropriate from investors through the suspension of aid or the blocking of International Monetary Fund allocations. While crisis may increase the benefits of expropriating from investors, the ability of home governments to impose costs on the expropriating government are even greater during a crisis.

We test our hypotheses through two data sets on the expropriations of investors. Our empirical results provide partial support for link between crisis and decreased propensity to expropriate, and a strong support for the link between aid and IMF support limiting government propensities to expropriate.

Our findings have broader implications for the literature on the relationship between markets and government sovereignty. Consistent with existing literature on economic liberalization and crisis, we find that economic crisis disciplines governments from the breaking of contracts. Yet market mechanisms aren't enough to stop investment expropriations. We show that home government foreign aid and dependence on the International Monetary Fund both have disciplining effects on government behavior.

8 Appendix

Table 3: Correlation matrix of variables for the sample in Table 1

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Expropriations	1														
2. Financial crises	-0.033	1													
3. IMF agreement	-0.095	0.093	1												
4. Foreign aid (logged)	-0.045	0.047	0.169	1											
5. Left governments	0.062	0.041	-0.0004	0.012	1										
6. Shift to left	0.199	-0.005	-0.044	0.012	0.257	1									
7. FDI (%GDP)	-0.016	-0.043	0.032	-0.039	0.042	-0.015	1								
8. log(GDP per capita)	0.005	-0.012	-0.255	-0.350	-0.069	0.028	0.098	1							
9. [log(GDP per capita)] ²	0.002	-0.016	-0.258	-0.368	-0.077	0.024	0.089	0.995	1						
10. Economic growth	-0.016	-0.160	-0.027	-0.053	-0.040	-0.011	0.116	0.032	0.019	1					
11. Govt spending	-0.012	-0.006	-0.099	-0.096	0.067	-0.038	-0.005	0.188	0.189	-0.171	1				
12. Trade openness	-0.024	-0.062	-0.030	-0.195	-0.033	-0.024	0.238	0.317	0.317	0.037	0.357	1			
13. Democracy	-0.028	0.044	0.071	0.024	0.171	0.108	0.225	0.132	0.109	0.086	-0.243	0.005	1		
14. Resource rent (logged)	-0.018	0.017	-0.248	-0.136	-0.011	0.001	0.034	0.507	0.500	0.037	0.052	-0.105	-0.045	1	
15. Post Cold War	-0.095	-0.051	0.092	0.033	-0.050	-0.035	0.243	-0.014	-0.008	0.060	-0.157	0.108	0.306	-0.0182	1

Table 4: Correlation matrix of variables for the sample in Table 2

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Financial crises	1													
2. IMF agreement	0.126	1												
3. Foreign aid (logged)	0.037	0.150	1											
4. Left governments	0.004	-0.083	0.136	1										
5. Shift to left	0.028	0.001	0.011	0.269	1									
6. FDI (% GDP)	-0.027	0.028	0.032	0.177	-0.001	1								
7. log(GDP per capita)	0.024	-0.129	-0.531	-0.133	0.035	0.159	1							
8. [log(GDP per capita)] ²	0.018	-0.140	-0.539	-0.125	0.035	0.146	0.997	1						
9. Economic growth	-0.284	-0.214	0.093	0.082	-0.011	0.051	-0.077	-0.078	1					
10. Gov spending	0.003	-0.131	-0.17	0.019	0.027	-0.004	0.395	0.420	-0.147	1				
11. Trade openness	-0.006	-0.001	-0.172	-0.136	-0.001	0.242	0.298	0.285	-0.010	0.282	1			
12. Democracy	0.053	0.090	0.039	0.233	0.137	0.204	0.217	0.208	-0.022	-0.200	0.039	1		
13. log(Resource rent)	-0.037	-0.175	0.182	-0.038	-0.056	0.040	0.065	0.070	0.087	0.128	-0.295	-0.201	1	
14. Post Cold War	0.030	0.107	0.138	0.093	0.030	0.296	0.087	0.082	-0.056	-0.068	0.061	0.339	0.047	1

Table 5: Descriptive statistics for the sample in Table 1

Variables	Mean	Std. Dev.	Min	Max
Expropriations	0.099	0.750	0	25
Financial crises	0.109	0.345	0	3
IMF agreement	0.392	0.488	0	1
Foreign aid (logged)	17.801	4.979	-19.935	22.214
Left governments	0.312	0.463	0	1
Shift to left	0.027	0.163	0	1
FDI (% GDP)	1.320	2.780	-28.624	40.157
GDP per capita (logged)	6.815	1.268	4.390	10.769
GDP per capita (logged) squared	48.056	18.139	19.270	115.980
Economic growth	0.783	5.711	-42.884	35.965
Government spending (% GDP)	13.954	6.854	2.976	76.222
Trade openness	59.658	32.455	0.979	220.407
Democracy	-1.603	6.746	-10	10
Resource rent (logged)	11.911	10.190	0	25.647
Post Cold War	0.397	0.489	0	1

Table 6: Descriptive statistics for the sample in Table 2

Variables	Mean	Std. Dev.	Min	Max
Financial crises	0.109	0.370	0	3
IMF agreement	0.392	0.488	0	1
Foreign aid (logged)	19.098	1.570	11.8	23.1
Left governments	0.253	0.435	0	1
Shift to left	0.025	0.156	0	1
FDI (% GDP)	1.908	3.598	-82.9	145.2
GDP per capita (logged)	7.414	1.116	4.1	10.3
GDP per capita (logged) squared	56.214	16.469	17.1	107.2
Economic growth	4.368	5.069	-51.0	106.3
Government spending(% GDP)	14.030	5.982	2.3	76.2
Trade openness	60.054	32.401	6.3	280.4
Democracy	1.735	7.109	-10	10
Resource rent(logged)	16.248	8.910	0	27.3
Post Cold War	0.512	0.500	0	1

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