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Relative strength and foreign direct investment in civil conflicts

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Abstract
What factors contribute to the differences in foreign direct investment (FDI) levels in environments characterized as high risk? While research shows that armed conflict influences foreign investment decisions, it remains unclear how conflict dynamics, specifically the relative power capabilities of warring parties, affect FDI. This study explores the effects of rebel strength relative to government forces on FDI. We argue that there is a reduction in foreign investments in civil conflict countries as rebels gain a military advantage relative to the government. Stronger insurgents send a signal that the government is losing its strength in the conflict, creating uncertainty regarding conflict outcomes and posing economic and security risks for investors. To avoid facing economic and property losses due to increasing rebel strength, investors are incentivized to decrease their investment in the conflict state. Using data on insurgent troop size relative to government forces and FDI, our findings show that higher military capabilities of rebel forces relative to the government are associated with less FDI inflows in conflict-affected countries.

Keywords: relative strength; foreign direct investment; military capabilities; state capacity; civil wars

Introduction

In response to the growing strength of the Tigray rebels during the recent civil conflict in Ethiopia between the government and the Tigray People's Liberation Front, Prime Minister Abiy Ahmed noted in a press statement that "we should know that our enemy's main strength is our weakness and unpreparedness."[1] The conflict, which started in November 2020, has escalated to different parts of the country as rebels have gained power in several cities, including those close to the country's capital.[2] These events have placed significant pressures on civilian populations and foreigners, including foreign investors, to leave the state. In fact, many investors in conflict-affected areas have ended their operations to avoid further losses. This includes investments made by Egyptian industrial firms located in the Tigray region.[3] Reflecting on the loss of millions of dollars in investments in Ethiopia as a result of the conflict and the weakening of the Ethiopian government, Alaa El-Sakty, vice chair of the Egyptian Federation of Investors Associations, claimed in an interview that "the Egyptian economy and investments will not be affected in any way, in the event that Egyptian investments exit from Ethiopia. In the meantime, it is possible to start business in another African country that does not suffer from the same security and protection problems."[4]

Variation in foreign direct investment (FDI) across high-risk environments is the subject of an emerging subliterature. This body of research explores the complex relationship between risk and FDI, acknowledging that while risk may generally reduce the levels of FDI, other factors come into

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[1]Anna (2021).
[2]Walsh and Dahir (2022).
[3]Al-Aees (2021).
[4]Al-Aees (2021).

play. Previous studies in this area suggest that the impact of risk on FDI is influenced by factors such as state capacity,[5] transparency,[6] conditions in the home country,[7] sector dynamics,[8] and even physical distance at the subnational level.[9] However, one area of research that remains unexplored is whether the military capabilities of warring parties relative to each other have any effect on the risk assessments made by foreign firms. As highlighted during the civil war in Ethiopia, investors take into account the increasing strength of insurgents during conflict when making their investment decisions. Governments that are militarily weaker relative to insurgent groups are pressured to funnel their resources into fighting the opposition, leaving them ill-equipped to provide foreign firms with the support and security they need to maintain their business. This can lead to material costs for investors and a decrease in confidence in such governments. Based on the concerns raised by foreign firms in conflicts such as the recent one in Ethiopia, we are interested in exploring the following question: in countries experiencing civil conflict, are the decisions made by foreign firms to invest in a country influenced by the military strength of rebel movements relative to government forces?

Armed conflict creates complicated conditions for foreign firms operating in a country, including potential economic losses and security dilemmas. While these issues are of concern in all conflict zones, investment decisions made by foreign firms vary across conflict states and over time. We seek to explain this variation. We propose the argument that intrastate wars in which insurgent groups are militarily strong relative to the state amplify the risks faced by foreign investors. Firms use state capacity as a signal of the stability of the government they are working with and the environment they are expected to do business in. States with stronger capacity are often associated with lower political and economic risks.[10] As the relative military capabilities of rebel groups increase, this poses a challenge to investors by creating conditions that can lead to commitment problems and possibly conflict renewal. These threats are expected to be factored into the decision-making calculus of foreign investors. We anticipate that firms withdraw their investments from conflicts where rebels have a military advantage relative to the government as a response to the security and economic uncertainties they face.

This work contributes to the study of variation in FDI across high-risk countries by concentrating on the dynamics of government capacity in conflict-affected states. First, we focus on a new aspect of government strength to understand the decisions made by foreign investors operating in civil conflict zones: the military capabilities of the government relative to the rebel groups they are at war with. While extant research has assessed the relationship between FDI and government capacity, most research focuses on political regime type, governance, and absolute government military power. In the case of civil wars, the balance of power between the government and rebels can serve as an indicator of government strength for foreign investors. Second, while most foreign investors are often hesitant to operate in conflict-torn countries, some still choose to do so. Our study provides insight into how the preferences of investors that decide to do business in a conflict-affected country may change during the course of a conflict once their government partner becomes weaker relative to its opponent. Lastly, we provide the first quantitative test exploring the effects of the relative power capabilities of rebel movements and governments on foreign capital using time-varying data on the relative troop size of warring parties.

Our article is organized in the following manner. The first section of the study covers existing works on determinants of FDI, including those specific to conflict environments. Building on the literature on civil wars and FDI, we put forth our theoretical framework. We argue that in intrastate conflicts in which the power balance is favorable to rebel groups, foreign firms are met with political and economic uncertainties. In response to these risks, they reduce their investments from the state. Following our

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[5]Coan and Kugler (2008).

[6]Barry and DiGiuseppe (2019).

[7]Beazer and Blake (2018).

[8]Wright and Zhu (2018).

[9]Dai, Eden, and Beamish (2013).

[10]Blanton and Blanton (2007); Brewer (1993); Globerman and Shapiro (2002, 2003); Jensen (2008); Li (2009); Li and Resnick (2003); Pinto and Zhu (2016); World Bank (1997).

discussion on the theoretical mechanisms linking FDI and the relative strength of governments to insurgent groups, we introduce our research design and empirical findings. Using data from the Uppsala Conflict Data Program on the relative military capabilities of rebels to state forces and FDI inflows, the results obtained yield support for the argument that civil war states receive less FDI when the relative military capabilities of rebels are a threat to the government they are in conflict with. This demonstrates that the relative military strength of the state is an aspect of government capacity that foreign investors are mindful of when operating in a country. The study concludes with suggestions for future research.

Determinants of foreign direct investment

Several factors determine foreign direct investments, including considerations of how much value such investments might have and the confidence that there will be no losses. These considerations are often contextualized as risks, and they mainly include financial and/or political risks.[11] Higher levels of political and economic threats create a disincentive for foreign firms as they produce added costs to doing business in such a country.[12] More recently, reputational risk has received increased attention for its growing potency in determining investment behavior, including reputational risks related to human rights and environmental concerns.[13] Scholars have categorized risks differently, but, generally speaking, economic and political risks tend to be the prime categories of factors found to influence FDI flow. The higher the risk in a country, the lower the amount of FDI it will host.

Economic risks deal with the economic performance of the host country, including risks associated with inflation, participation in international arrangements to resolve FDI disputes, and access to international credit.[14] Moreover, some works find that economic risk assessment tends to be the strongest predictor of inward FDI stock. Economic forces in a host country can weigh negatively on the fortunes of a foreign investor.[15]

There is usually an interplay between economic and political risks in determining whether to invest or how much to invest in a host country. Political risks include the likelihood that the FDI host nation will take political actions or experience political problems that will affect FDI fortunes.[16] They also include more detailed considerations like the transparency of institutions, the ability of firms to influence government policy, the stability of government policy, and the government's ability to expropriate FDI assets.[17] Ekpenyong and Umoren point to the need to consider a more extensive range of factors that could influence political risk, defining political risk as events that have a destabilizing effect on the ability of enterprises to function in a polity.[18] This includes political violence, inconsistency in political alignment, and shifts in the power balance among political parties. One can summarize political risks as involving changes in political forces and events, where the assessment of the host country is conditioned on uncertainty about the actions of government, political institutions, minority groups, and even separatist movements.[19] Sometimes, aside from the usual institutional characteristics that predict risk in the host country, investors depend on surveys by political risk analysts, risk insurance brokers, and business leaders to gauge a country's political risk.[20] Once investments have been made, the investors are at the mercy of the host government. Political instability and the fear of expropriation can alter the interests of foreign investors and motivate their reluctance to move their capital into a potential host country.[21]

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[11]Barry and DiGiuseppe (2019); Blanton and Blanton (2009, 472); Jensen (2008).
[12]Jensen (2008, 1040–42).
[13]Ballard (2020); Barry, Clay, and Flynn (2013); Nujen et al. (2021); Spence (2011).
[14]Lewandowski (1997).
[15]Goswami and Haider (2014); Levis (1979).
[16]Joshi and Quinn (2020).
[17]Barry and DiGiuseppe (2019); Barry (2016); Jensen (2008).
[18]Ekpenyong and Umoren (2010).
[19]Nelson, Sooreea, and Gokcek (2016).
[20]Lewandowski (1997).
[21]Li and Resnick (2003).

Much research shows that political risks significantly affect investments when it comes to developing countries. It has been established that foreign firms and, by extension, foreign investors prefer their host countries to be free of armed violence and tend to show a preference for institutional arrangements that reduce the likelihood of unpredictable policies and risks.[22] These factors may include the level of protection of property rights and the rule of law[23] and the host country's judicial system. Justice institutions are argued to be of particular importance for foreign firms from countries where these rights are well established or where the judicial system, for instance, enjoys independence from government interference.[24] In a study of French firms, Corcos et al. argue that stable justice institutions are essential factors considered even in trade within firms.[25] They represent a significant predictor of intrafirm trade, a significant component of FDI.

Researchers have historically debated the importance of political risks in FDI flow.[26] Not everyone agrees that these factors matter when it comes to the flow of inward FDI. Research has pointed to how economic factors such as market size, access to credit, and so on, tend to be the strongest predictors of FDI flow, explaining the gap in the amount of FDI hosted in industrialized countries compared to developing countries.[27] Some economic-focused research has found that political factors, such as government failure, do not influence FDI.[28] Others have argued that political considerations are second-order determinants of FDI as economic considerations remain the prime explanations for foreign direct investments.[29] In a study of FDI in Africa, Asiedu finds that while the usual economic factors like natural resources, market size, and inflation remain prime predictors of FDI, political and legal institutions and policies in the host government have similar effects, with corruption and political instability dissuading foreign investment.[30]

Research has shown that political risks are stronger predictors of FDI flow in emerging economies than in industrialized countries and that such risks have increased in recent years.[31] Lucas points to political risk as the primary reason for the FDI gap between industrialized and developing countries, despite the potential for significant marginal returns in developing countries.[32] Regionally focused research on FDI flows to the Middle East and North African countries has also found political risk factors to be significant determinants of differences in FDI attractiveness across countries.[33] Some have called for a more conditional approach to political risks, such as political violence. Li, Murshed, and Tanna point out that while economic factors are the strongest predictors of FDI flows, the impact of political factors is uneven across sectors, as FDI flows to extractive sectors are most unlikely to be affected by armed conflicts.[34]

The costs of divesting from a host country can dissuade investors from involving themselves in countries with domestic issues like political violence. However, although divestment comes with some costs to investors,[35] doing business in conflict-torn countries may come at a higher financial or even reputational cost. Material costs can be incurred as a result of attacks on infrastructure in these countries.[36] Investors can also face criticism from the international community for doing business with a country that is in active civil conflict.[37]

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[22]Bussmann (2010); Jensen (2008); Jensen and Young (2008); Li, Murshed, and Tanna (2017).
[23]Blanton and Blanton (2006, 2007); Svensson (1998).
[24]Beazer and Blake (2018).
[25]Corcos et al. (2013).
[26]Levis (1979).
[27]Qian and Baek (2011).
[28]Goswami and Haider (2014).
[29]Levis (1979).
[30]Asiedu (2005).
[31]Qian and Baek (2011).
[32]Lucas (1990).
[33]Nassour, Meftah, and Mirani (2020).
[34]Li, Murshed, and Tanna (2017)
[35]Guidolin and La Ferrara (2007).
[36]Li (2008).
[37]Adelaiye (2023); Adelaiye, Oluwatope, and Roy (2023); Barry, Clay, and Flynn (2013); Henisz (2017).

Evidence of the state losing ground as well as legitimacy is detrimental to investor confidence. With uncertainty regarding the government's capabilities, a potential loss of future investment opportunities if the rebels win, and any risk of conflict renewal,[38] foreign businesses are pressured to reassess their decision to remain in the host country. Most of this research assumes the need for foreign investors to find a safe investing environment. However, this precondition is challenged when investors engage in risky investment behavior. For example, Kolstad and Wiig write that increasing Chinese investments have been finding their way into unstable and natural resource-rich African countries, further destabilizing these regions.[39] However, by understanding that risks are constantly juxtaposed with benefits in investment decisions, one can get a clear picture of how the relationship between risks and investments is conditioned on potential benefits.[40]

While foreign firms face risks in nonconflict states, such risks are particularly prevalent in war-torn countries and conditioned by conflict-specific factors. In cases of civil war, we argue that one particular conflict characteristic that foreign investors should consider when determining a state's risk is the military strength of the government compared to the rebel movements it is at war with. This conflict feature can impact a foreign firm's confidence in the strength of the government it partners with. Next, we theorize how the balance of power between rebels and a government affects the investment decisions made by foreign businesses in a conflict state.

The risks associated with increasing rebel capabilities for foreign investors

FDI can serve as a crucial avenue for development and postconflict recovery in high-risk countries. Extensive research has demonstrated that foreign investments contribute to economic growth, both directly and indirectly. Countries grappling with armed conflict often require economic growth as they rebuild in the aftermath of turmoil, leading them to incentivize and attract foreign investors.[41] However, growth in the military capability of rebel groups could mean more intense conflict, which is linked to reduced economic growth. This could be through pathways that reduce public and private investment in the country experiencing conflict.[42] It is important to consider the extent to which these dynamics affect FDI.

The extant literature on FDI shows mixed findings on the relationship between armed conflict and FDI. Many works point out that foreign investors face significant risks in areas impacted by conflict and violence.[43] However, there is evidence that these concerns can be alleviated by strong state capacity, stable institutions, and military expenditure.[44] While studies have shown that the unique attributes of the state are important for explaining FDI,[45] research has yet to consider the role of rebels in shaping the views held by foreign investors regarding the strength and stability of a government during conflict. Rebel groups vary in terms of their characteristics, including their military strength relative to the government, which can impact the conflict and war outcomes.[46] As stated by Clayton, "the absolute strength of a belligerent is less important than their strength in relation to their opponent."[47] While we agree that government strength matters to foreign investors, we rely on the literature on FDI and civil conflict and argue that foreign investors consider whether the government is militarily stronger relative to the rebels that it is in conflict with and not just the overall military strength of a government. The power dynamics between warring parties can affect the environment of the conflict country and as a result, impact the investment choices of foreign firms.

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[38]Joshi and Quinn (2020).
[39]Kolstad and Wiig (2011).
[40]Jensen and Johnston (2011).
[41]Li and Liu (2005); Osabutey and Okoro (2015).
[42]Imai and Weinstein (2000).
[43]Bussmann (2010); Jensen (2008); Jensen and Young (2008); Li (2006b).
[44]Aziz and Khalid (2019); Globerman and Shapiro (2002, 2003); Norrlof (2010); World Bank (1997).
[45]Blanton and Blanton (2007); Brewer (1993); Jensen (2003, 2008); Li (2009); Li and Resnick (2003); Pinto and Zhu (2016).
[46]Buhaug, Gates, and Lujala (2009); Cunningham, Gleditsch, and Salehyan (2009).
[47]Clayton (2013, 611).

The reduction in FDI levels can occur through two pathways. First, it can happen as a result of relatively higher rates of divestment, as foreign firms withdraw their investments from a country. Divestment can be driven by a variety of factors, such as increased risks, political instability, unfavorable economic conditions, or concerns about the business environment. Research has shown that a deconstruction of firm-level decisions on disinvestment and decisions about how much to invest are not equally affected by political risks.[48] Unlike the decision to invest, withdrawing investment is more complex; foreign firms are at the mercy of the host government, and they are forced to be less responsive to political changes. Divestment could mean the loss of capital for some of these firms as FDI is less movable.[49] Firms that have already invested in the country might find it more difficult to exit the host government as a response to the political climate, and they tend to have a higher tolerance for political risks. However, they are still more likely to withdraw investment as political risks increase.[50]

Second, lower FDI levels can also result from relatively lower rates of new investment, as foreign firms become hesitant to make further investments in a particular country. This hesitation can stem from factors such as uncertain economic prospects, unfavorable government policies, regulatory barriers, or lack of confidence in the business climate. Countries may be forced to reevaluate their decision to enter a host country that presents risks and uncertainties. This is the more sensitive pathway as the current political situation is considered.[51] Foreign investors thus assess the features of a potential market and make investment decisions based on the host country's climate, understanding that withdrawals will be difficult once investments are made. Amid an uncertain political environment in a potential host state, investors may be reluctant to move capital there. This may result in a reduction in the level of FDI.

In our theory, we consider both pathways—divestment and reduced new investment—as potential factors contributing to the lower levels of FDI observed. By examining these two pathways, we aim to comprehensively understand how the balance of power in conflict influences FDI and its variations across conflict zones. The reduction in the volume of FDI could result from a reduction in the amount of new foreign investments coming into the host government. It could also be a result of an increase in the exit or withdrawal of foreign investors or firms from a host country. It is thus important to address how the power dynamics of the conflict affect the decision to withdraw investment, as well the incentives to invest in a host country that is already experiencing armed conflict.[52]

As pointed out by Li and Resnick, firms withdraw from areas where the costs of investment are high because of the risks they face.[53] We propose that the military capabilities of rebels relative to the government can create several concerns for foreign firms if the balance of power is tilted away from the government. First, rebel organizations that have a military advantage over the government can reveal the state's weakness in preventing its opponent from mobilizing and expanding its territorial control.[54] A shift in the balance of power between rebels and government forces in favor of rebels benefits the latter in that the rebels are able to gain control over territory, resources, and access to new recruits.[55] However, such shifts also suggest that state capacity is diminishing. As the literature has highlighted, a decline in government strength can send a negative signal to investors, influencing their decisions as to whether they should continue investing in the country.[56] While conflict itself creates a risky environment for foreign firms,[57] a government that is militarily weak relative to its enemy may create

[48]Haug, Nguyen, and Owen (2023).

[49]Jensen and Johnston (2011).

[50]Dai, Eden, and Beamish (2013).

[51]Osabutey and Okoro (2015).

[52]We thank an anonymous reviewer for highlighting the importance of discussing both pathways when explaining the reduced flow of FDI.

[53]Li and Resnick (2003).

[54]Clayton (2013); Wood (2010).

[55]Cunningham, Gleditsch, and Salehyan (2013); Kalyvas (2006); Wood (2010).

[56]Coan and Kugler (2008).

[57]Adelaiye (2022); Adelaiye, Roy, and Sarwari (2023); Collier (1999).

additional political and economic risks for investors, including enforcement of contracts and property rights.[58] Although a state's military power can help minimize these risks, this can change if a government faces strong rebels. Such governments must redirect their resources to deter the opposition from becoming even stronger, making it more difficult for investors to remain in the country.

Second, rebels with higher military capabilities relative to the government can pose security issues for investors. Governments that are challenged by rebels that have a military advantage are forced to allocate their available resources to fight their opponent. As a consequence, this affects their capacity to provide protection for local populations and businesses, including foreign firms and the individuals they employ, leaving them exposed to violence. Not only does this impact the personal security of investors and their workers, but it can also influence production and the ability of a foreign firm to make a profit.[59] Though some businesses may have the capacity to use their own capital to attain private security, not all investors have the means to do so. A decline in security measures by the state for foreign firms results in unexpected costs for investors and takes away from any earnings they may have gained while operating in the country.

Furthermore, the relative strength of a rebel group can influence the outcome of a conflict. States in conflict that have strong militaries are expected to pursue military victory as opposed to negotiating a deal with their opponent.[60] Stronger insurgents, on the other hand, are able to survive the costs of continued fighting and, as a result, threaten a government's ability to stay in power.[61] This can raise the costs of the conflict and lead to more violence and destruction of infrastructure.[62] While governments that face rebels with higher military capabilities are more likely to agree to mediation[63] and offer concessions[64] to avoid a possible rebel victory, the bargaining position of stronger rebels can prolong conflict as they try to obtain additional concessions or further increase their power capabilities to defeat the government.[65] With little clarity as to how the conflict will end, foreign firms can become discouraged from maintaining their investments in the state.

Additionally, as noted by Lee, "foreign investors are both backward-looking and forward-looking."[66] We therefore expect that increasing rebel strength and a potential rebel victory can raise concerns over future contract commitments for investors. Although it is difficult for investors to predict shifts in the fighting capabilities of conflict actors, any advancements in rebel military strength can put foreign investors in a difficult position. While a foreign firm may be familiar with the government in power and its business expectations and policies, the policy preferences of rebel groups will be less clear to foreign investors. If rebels were to defeat the government and win the conflict, it would be unknown to investors whether future contracts with the state would resume or remain credible given the likelihood of the state's institutions and policies changing.[67] To avoid having their capital and property affected if rebels were to achieve military victory, a foreign investor may find it beneficial to reduce their investments from a country on their own before they are forced out if the rebels are uninterested in maintaining ties with them.

Lastly, another factor that foreign investors consider when determining whether they should continue their investment in a country where rebels have stronger military capabilities relative to the government is the possibility of conflict reoccurrence.[68] While findings on the relationship between conflict outcomes and postconflict stability are mixed,[69] some studies show that conflict reoccurrence

[58]Papaioannou (2009); Drezner and Hite-Rubin (2016, 5–6).

[59]Bray (2010).

[60]Gent (2011).

[61]Clayton (2013); Nilsson (2010, 256).

[62]Clayton (2013).

[63]Clayton (2013).

[64]Buhaug, Gates, and Lujala (2009, 554); Cunningham, Gleditsch, and Salehyan (2009).

[65]Clayton (2013).

[66]Lee (2017, 171).

[67]Bak and Lee (2021); Clague et al. (1996).

[68]Bak and Lee (2021); Joshi and Quinn (2020).

[69]Bak and Lee (2021, 5).

is less likely if government forces achieve victory in comparison to a rebel defeat.[70] In situations in which conflict renewal is likely to occur, the confidence of firms in seeing any possible future stability may be affected.[71] As a response, they may try to withdraw from the country to avoid getting entangled in the dynamics and consequences of a renewed conflict that could be more violent and costly than the previous one.

Our analysis considers the level of FDI inflow in the host country, and it does not differentiate between the withdrawal of FDI and the inflow of new investments. However, based on the mechanisms for both pathways considered earlier, we propose the following hypothesis:

Hypothesis 1: The stronger the military capabilities of rebel forces are relative to the government, the less FDI inflows the conflict country will receive.

Research design

In this study, we seek to examine the effect of the relative military capabilities of rebel movements to government forces on FDI in intrastate conflicts. To determine the appropriate cases to use in our sample, we rely on data from the Uppsala Conflict Data Program (UCDP) Dyadic dataset v. 20.1.[72] Looking at civil wars during the period 1989–2009, our sample includes a total of 625 country-year cases.[73]

Dependent variable

To measure yearly *FDI Inflows* for civil conflict countries included in our sample, we rely on data from the World Development Indicator Database. We account for the positive skewness of these data by using the logged values of FDI net inflows (measured in millions of US dollars) to estimate our analyses.[74]

Independent variable

Our independent variable, *Relative Rebel Strength*, is measured as the ratio of the troop size of all rebel groups in a conflict to government forces. These data are drawn from the UCDP Conflict Encyclopedia.[75] To test our argument, we apply the measurement approach used by Wood and take the natural log of these data.[76] Negative values suggest that states forces are militarily stronger than the insurgents, whereas positive values suggest that rebel movements have a troop advantage over the government. In situations in which the power capabilities of the government and rebels are equal, such cases are assigned a value of 0.[77]

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[70]Kreutz (2010).

[71]Bak and Lee (2021); Joshi and Quinn (2020).

[72]Harbom, Melander, and Wallensteen (2008); Pettersson and Öberg (2020).

[73]This time frame was selected because of the availability of data for our *Size of Conflict Zone* variable. While our study accounts for 252 government-rebel movement dyads in 72 states, we are interested in testing how the overall military capacity of rebel groups relative to the government affects decisions made by foreign firms to invest in conflict countries. For this reason, we combine all rebel groups into one actor, which results in a total of 625 country-year cases.

[74]As pointed out in the literature on trade and conflict, there are often zero or negative values of trade flows in countries impacted by conflict, and thus it is important to use a poisson pseudo maximum likelihood (PPML) estimator when empirically testing this relationship (Kamin 2022). To account for similar concerns in the case of foreign direct investment, we use a PPML estimator and report our findings in Table 4 in the appendix. The results of our independent variable, *Relative Rebel Strength*, support our expectation that the stronger the military capabilities of rebels are relative to government forces, the lower the FDI inflows in a conflict country.

[75]UCDP (2022).

[76]Wood (2010).

[77]It is important to recognize that with respect to the relative military strength between rebels and governments, foreign investors may respond differently to the level of the relative ratio and changes in the relative ratio. While our study focuses on how the level of the relative ratio influences the investment decisions of foreign firms, future research should consider how the changes in the relative ratio affect foreign direct investment. We thank an anonymous reviewer for bringing this to our attention.

Control variables

We also include in our analysis additional factors that may be correlated with investment decisions made by foreign firms. We first consider conflict-specific characteristics. The literature has highlighted the deterring effects of violence on foreign investments.[78] Violence can pose economic and security risks for foreign firms[79] and disrupt peace processes,[80] creating uncertainty for investors. To control for this phenomenon, we use data on civilian victimization by state forces and rebels from the UCDP One-Sided Violence Dataset, v. 21.1, to create the variables *Government-Inflicted Violence* and *Rebel-Inflicted Violence*.[81] We also control for *Size of the Conflict Zone* (logged). It is possible that the larger a conflict area is, the more threats there will be to an investor's infrastructure, capital, and overall security, resulting in divestment from the conflict country. Data for this variable come from the International Peace Institute, Oslo (PRIO) Conflict Site Dataset v.3,[82] which captures the amount of territory impacted by conflict in square kilometers. Additionally, the variable *Conflict Duration* is included to consider any impact that the number of years a country has been in conflict has on FDI.[83]

The unique features of the country facing intrastate conflict are also taken into consideration. First, we expect that the economic characteristics of a state shape foreign investment decisions. For instance, states with higher economic development are able to signal to investors the economic stability of the state and create investment opportunities for foreign firms.[84] To measure the *Economic Capacity* of a country, we draw on yearly gross domestic product (GDP) per capita data from the World Bank. Moreover, it is expected that areas where natural resources are available receive more FDI. Relying on World Bank data, our *Natural Resources* variable captures how much of a country's economy relies on revenue from natural resources (percent of GDP). Research also points out that foreign firms take into account the political qualities and security structure of a state they seek to invest in. Countries with stronger militaries are able to provide protection to investors and their property.[85] Relying on data from the National Material Capabilities dataset v. 5.0 to create the variable *Troop Quality*, we use a state's military expenditure per military personnel to measure the strength of its military infrastructure. The *Political Regime* of a state serves as a strong indicator of the political risks of a country and its likelihood of protecting property rights.[86] To capture the influence of a country's regime type on FDI, we use Polity IV data to calculate X-Polity scores.[87] Lastly, there is empirical evidence showing higher amounts of FDI in states with independent judiciaries and rule of law.[88] To measure the *Judicial Quality* of a country, data on de facto judicial independence from the Comparative Constitutions Project[89] are used.

Model

To test the claims proposed in the study, an ordinary least squares regression model with country and year fixed effects is estimated. To address issues of endogeneity, our predictor variables are lagged by one year.[90]

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[78]Lee (2017); Li (2006b); Powers and Choi (2012); Schneider and Frey (1985).

[79]Blomberg, Hess, and Orphanides (2004); Lee (2017, 169–70).

[80]Findley and Young (2015); Fortna (2015).

[81]Eck and Hultman (2007); Pettersson et al. (2021).

[82]Hallberg (2012); Raleigh et al. (2006).

[83]Buhaug, Gates, and Lujala (2009) and Cunningham, Gleditsch, and Salehyan (2009) find that conflicts last longer when rebel groups are militarily weaker.

[84]Lee (2017, 197); Schneider and Frey (1985).

[85]Norrlof (2010).

[86]Jensen (2003, 2008); Li and Resnick (2003).

[87]Vreeland (2008).

[88]Staats and Biglaiser (2012).

[89]Melton and Ginsburg (2014).

[90]In addition to using one-year lags, we lag our predictor variables by two years as a robustness check and find similar results as our main analyses. We also conduct a two-stage least squares (2SLS) model to account for the potential endogenous relationship between the relative capabilities of government forces and rebels and foreign direct investment. In this model, we use two instrumental variables, foreign support to state governments and foreign support to rebels. The findings are presented in Table 5

Empirical analysis and discussion

Examining all civil conflicts that occurred between 1989 and 2009, we test the effect of relative rebel capabilities on foreign investment.[91] We estimate two models: one baseline model without control variables, to avoid introducing any bias (Model 1),[92] and a model that includes the control variables discussed in the previous section (Model 2). The results for these models are presented in Table 1. As shown in Table 1, our *Relative Rebel Strength* variable is negative and achieves statistical significance in both Models 1 and 2. In looking at the results of Model 1, our baseline model, the results indicate that a 1 percent increase in *Relative Rebel Strength* is associated with a 1.024 percent decrease in FDI inflows. As shown in Model 2, the effect that the relative strength of rebel groups has on FDI inflows becomes slightly smaller once we include our control variables in the model. Nevertheless, the findings show that foreign investors react to the military strength of rebel movements. Specifically, the coefficient for *Relative Rebel Strength* suggests that a 1 percent increase in rebel capabilities relative to the government results in a 0.853 percent decrease in FDI inflows. These findings yield support for our theoretical expectations that conflict-affected countries receive less investment from foreign firms as the military strength of rebels relative to government forces becomes stronger. Increasing rebel capabilities creates uncertainty for investors regarding the stability of the conflict environment and conflict outcomes and thus, discourages them from making investments in the state.

Using the results of Model 2, we calculate the predicted amounts of FDI inflow across different levels of relative rebel capabilities to illustrate the substantive effects of the balance of power between government forces and rebels on FDI.[93] These values are presented in Figure 1. As shown in the graph, when rebels are at parity with government forces (level 0), FDI inflows in the country are $3,639,948. However, in situations in which rebel movements are much stronger than the government (level 2), states receive $660,333 in FDI, a decrease of $2,979,615. This suggests that advances in military strength by rebels over state forces has reducing effects on foreign investments coming into a country.

Turning to the control variables included in Model 2, *Size of Conflict Zone* surprisingly has a positive and significant coefficient, suggesting that foreign investors are not necessarily deterred from countries where large amounts of territory are impacted by conflict. Larger conflict zones may be linked to larger countries having more territory. Further research will have to deconstruct what the expansion of conflict areas could mean for FDI and investors' assessments of the country experiencing conflict. The duration of conflict also has a positive and significant relationship with FDI inflows. As found by and Buhaug, Gates, and Lujala and by Cunningham, Gleditsch, and Salehyan, weaker rebels are associated with longer conflicts.[94] An argument can be made that foreign firms continue to operate in countries experiencing longer wars if rebels are weak. With respect to the country-specific variables we account for in our analysis, *Troop Quality* is positive and significant. As anticipated, investors are drawn to countries that have better equipped militaries which can be used to provide protection for them and their assets. Another factor that is positive and achieves statistical significance is *Judicial Quality*. Consistent with findings in extant literature on FDI, these results suggest that states that practice judicial independence are able to signal the presence of stronger political institutions and as a result, receive more foreign investment.

Robustness checks

There is a significant debate in the literature on FDI regarding measurement of foreign investment in a country.[95] To address concerns regarding the appropriate measure of FDI to use and confirm the robustness of our findings, we estimate additional models using alternative measures of FDI. We

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in the appendix. As shown by the results of our *Relative Rebel Strength* variable in the second stage of the 2SLS model, FDI inflows decrease as rebels become militarily stronger relative to the government.

[91]All analyses were conducted using Stata 14. Summary statistics are available in the supplementary appendix.

[92]Clarke (2005).

[93]Predictive values are calculated using SPOST (Long and Freese 2005).

[94]Buhaug, Gates, and Lujala (2009); Cunningham, Gleditsch, and Salehyan (2009).

[95]Lee (2017, 174).

Table 1. Effect of relative rebel military capabilities on FDI

	Model 1	Model 2
Relative Rebel Strength $_{t-1}$	1.024 (.254)***	−0.853 (.337)**
Government-Inflicted Violence (logged) $_{t-1}$		−0.106 (.178)
Rebel-Inflicted Violence (logged) $_{t-1}$		−0.083 (.143)
Size of Conflict Zone (logged) $_{t-1}$		0.577 (.310)*
Conflict Duration $_{t-1}$		0.168 (.044)***
Economic Capacity (logged) $_{t-1}$		−1.091 (.983)
Natural Resources $_{t-1}$		0.045 (.063)
Troop Quality (logged) $_{t-1}$		1.230 (.710)*
Political Regime $_{t-1}$		−0.229 (.166)
Judicial Quality $_{t-1}$		17.38 (7.33)**
R^2	0.1122	0.2394
N	468	347

Note: Standard errors in parentheses.
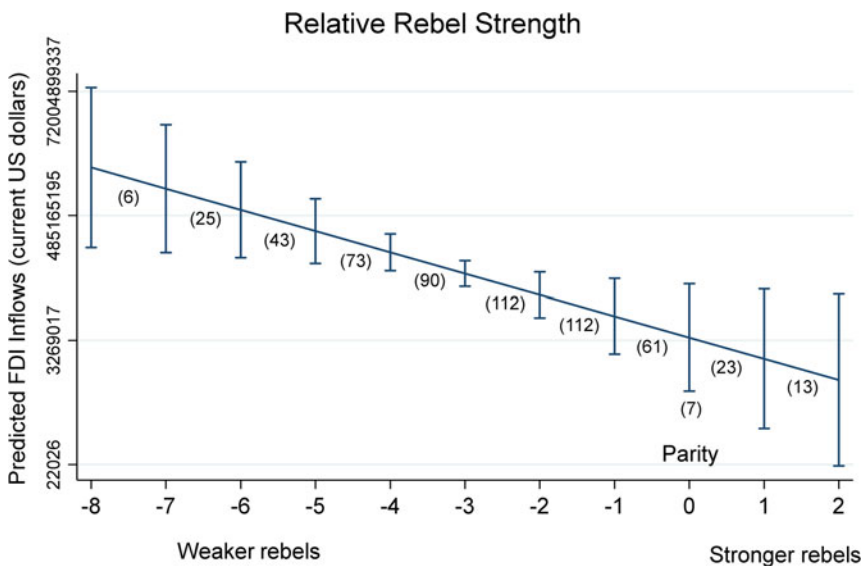* $p < .1$; ** $p < .05$; *** $p < .01$.

Figure 1. Predicted FDI inflows across different levels of relative rebel capabilities.
Note: number of cases within parentheses*

first consider FDI as a percentage of a country's GDP and present the results in Table 2. Consistent with the findings of our main analyses, *Relative Rebel Strength* has a negative coefficient and holds statistical significance. An additional model is conducted using FDI stocks as the dependent variable. As portrayed in Table 3, this alternative measurement of FDI is in the negative direction and significant, providing additional confidence in our argument that the relative power capabilities of warring parties influence how attractive a country is to foreign firms.[96]

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[96]We also provide coefficient plots to present the results of Model 2 (Table 1), Model 3 (Table 2), and Model 4 (Table 3) in the supplementary appendix (see Figures 2, 3 and 4).

Table 2. Effect of relative rebel military capabilities on FDI (using FDI/GDP)

	Model 3
Relative Rebel Strength $_{t-1}$	−0.546 (.257)**
Government-Inflicted Violence $_{t-1}$	−0.040 (.139)
Rebel-Inflicted Violence (logged) $_{t-1}$	−0.068 (.109)
Size of Conflict Zone (logged) $_{t-1}$	0.549 (.241)**
Conflict Duration $_{t-1}$	0.136 (.035)***
Economic Capacity (logged) $_{t-1}$	−1.421 (.769)*
Natural Resources $_{t-1}$	−0.069 (.050)
Troop Quality (logged) $_{t-1}$	-0.114 (.548)
Political Regime $_{t-1}$	-0.067 (.127)
Judicial Quality $_{t-1}$	1.604 (5.61)
R^2	0.0001
N	345

Note: Standard errors in parentheses.
* $p < .1$; ** $p < .05$; *** $p < .01$.

Table 3. Effect of relative rebel military capabilities on FDI (using FDI stocks)

	Model 4
Relative Rebel Strength $_{t-1}$	−0.113 (.054)**
Government-Inflicted Violence $_{t-1}$	−0.029 (.029)
Rebel-Inflicted Violence (logged) $_{t-1}$	−0.002 (.023)
Size of Conflict Zone (logged) $_{t-1}$	0.100 (.050)**
Conflict Duration $_{t-1}$	0.061 (.007)***
Economic Capacity (logged) $_{t-1}$	1.029 (.161)***
Natural Resources $_{t-1}$	0.043 (.010)***
Troop Quality (logged) $_{t-1}$	0.221 (.115)*
Political Regime $_{t-1}$	−0.152 (.027)***
Judicial Quality $_{t-1}$	6.317 (1.17)***
R^2	0.4957
N	345

Note: Standard errors in parentheses.
* $p < .1$; ** $p < .05$; *** $p < .01$.

Conclusion

In contrast with other research on government stability and foreign direct investment, our work looks at the power dynamics within a conflict and how they could signal investment risks. The role of the power of rebel groups vis-á-vis the incumbent government presents an essential issue for any assessment of political and economic risks in investment decision-making. We find evidence to support our theory that rebel forces' strength relative to the government of a state experiencing armed conflict disincentivizes inward FDI in civil war countries.

Our finding calls for more attention to how the power dynamics within a conflict affect investors' confidence. Even in countries that experience armed conflict, other characteristics of the conflict could

condition the perception of risk and the investment decisions made by foreign firms. Some research has cast doubt on the role of political instability on FDI, particularly pointing to investments in resource-rich countries despite existing armed conflicts. Our finding presents another layer to the argument and demonstrates that not all conflicts are equal. While foreign investors could ignore some risks in light of economic benefits and significant marginal gains, they may be unable to do so where rebel strength is high relative to state forces.

Beyond the impact of this on conflict time investments and economic development, this raises the importance of further research into how this could affect postconflict societies' economic trajectories, seeing the importance of foreign investment for economic development. Where conflict has ended, what are the long-term effects of rebel strength on FDI? Seeing how risk perceptions are sticky, it would be worth analyzing how much the presence of strong rebel groups in previous armed conflicts affects FDI inflows and other policy options associated with a state's economic performance in postconflict settings.

This research encourages further research in other aspects of investments and how it may be affected by the strength dynamics of government and rebel forces. Our research focuses on foreign investment; however, domestic investors also play a significant role in the growth and development of states. Further research could also look at how the power dynamics of rebel and government forces could influence the activities of domestic investors. In addition to this, while our research examines countries experiencing conflict, future research could consider how other forms of unrest that signal a host government's loss of influence or power could influence the inward flow of FDI.

Some researchers have advocated for greater emphasis on fixed capital investment, arguing that focusing solely on FDI flows provides a limited perspective on foreign direct investment.[97] One suggestion that has been provided in the literature to address this concern is using plant, property, and equipment (PPE) data.[98] PPE represents the total value of physical structures, land, machinery, and equipment, considering factors such as depreciation and depletion. It also encompasses the book value of land, timber, mineral, and similar rights owned by the foreign affiliate. Because of data availability constraints, we are unable to test our theoretical expectations using PPE data. However, further research could expand upon this by examining a broader range of fixed capital expenditures to assess the impact of political risks on the behavior of multinational corporations. Kerner suggests that focusing on FDI flows and stock provides only a partial understanding, which is even more pronounced when considering PPE analysis.[99] Acquiring data in conflict zones could facilitate a more comprehensive analysis of how the balance of power between government and rebel forces significantly influences the assessment made by foreign firms and investors.

We acknowledge the limitations of our work, and we do not analyze the different types of FDI, industry-specific FDI or FDI data at the subnational level due to data limitations. While arguments could be made for how the relative military capabilities of conflict actors may have varying levels of impact based on these factors, it does not take away from our argument that the relationship is negative as it relates to the amount of FDI hosted by a country as a whole. At a macro level, as the strength of rebel groups increases relative to the government, the country is likely to see reduced amounts of foreign investments flow inward. This could fill in the blanks in our understanding of the causal mechanisms in the relationship between economics and government strength as determinants of FDI in conflict environments.

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[97]Kerner and Lawrence (2014).
[98]Kerner (2014).
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Supplementary appendix

I. Descriptive statistics

| Variable	Observations	Mean	SD	Min	Max
FDI Inflows	606	17.08	6.448	0	26.57
Relative Rebel Strength	565	−2.729	1.901	−7.467	2.015
Government-Inflicted Violence	623	1.545	2.442	0	13.12
Rebel-Inflicted Violence (log)	625	1.812	2.496	0	10.33
Size of Conflict Zone (log)	557	11.62	1.821	6.109	14.65
Conflict Duration	607	13.58	12.34	0	47
Economic Capacity	561	6.778	1.347	4.631	10.79
Natural Resources (%GDP)	566	11.06	12.52	.0007	64.15
Troop Quality (log)	572	8.893	1.224	4.200	12.97
Political Regime	545	1.286	4.234	−6	7
Judicial Quality	594	.3336	.2357	.0193	.9694

II. Model 2 results (Table 1)
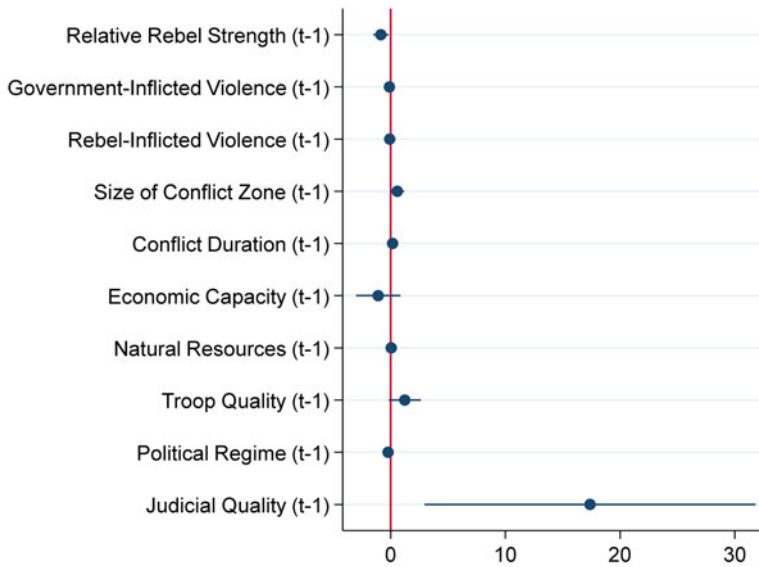
Figure 2. Effect of relative rebel strength on FDI inflows.

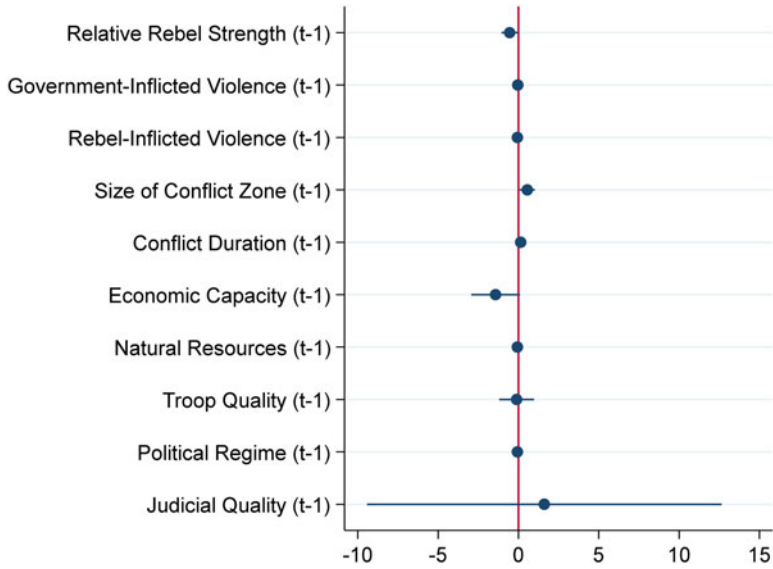### III. Model 3 results (using FDI/GDP variable) (Table 2)

Figure 3. Effect of relative rebel strength on FDI/GDP.

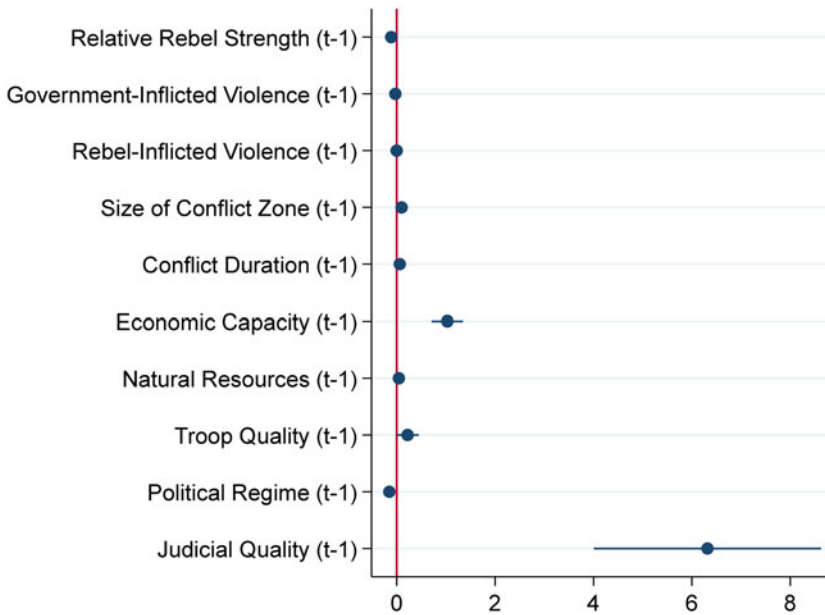### IV. Model 4 results (using FDI stocks variable) (Table 3)

Figure 4. Effect of relative rebel strength on FDI stocks.

V. Results using PPML estimator

Table 4. Effect of relative rebel military capabilities on FDI (using PPML estimator)

	Model 5
Relative Rebel Strength $_{t-1}$	−0.568 (.119)***
Government-Inflicted Violence $_{t-1}$	−0.099 (.048)**
Rebel-Inflicted Violence (logged) $_{t-1}$	−0.006 (.039)
Size of Conflict Zone (logged) $_{t-1}$	0.325 (.088)***
Conflict Duration $_{t-1}$	0.026 (.009)***
Economic Capacity (logged) $_{t-1}$	0.212 (.273)
Natural Resources $_{t-1}$	−0.022 (.018)
Troop Quality (logged) $_{t-1}$	1.093 (.298)***
Political Regime $_{t-1}$	0.125 (.055)**
Judicial Quality $_{t-1}$	−1.992 (1.14)
Pseudo R^2	0.6667
N	347

Note: Robust standard errors clustered by country in parentheses.
* $p < .1$; ** $p < .05$; *** $p < .01$.

VI. Results of two-stage least squares (2SLS) model (second stage)

Table 5. Effect of relative rebel military capabilities on FDI (2SLS model)

	Model 6
Relative Rebel Strength $_{t-1}$	−1.406 (.735)*
Government-Inflicted Violence $_{t-1}$	−0.317 (.209)
Rebel-Inflicted Violence (logged) $_{t-1}$	−0.337 (.135)**
Size of Conflict Zone (logged) $_{t-1}$	0.340 (.231)
Conflict Duration $_{t-1}$	0.127 (.031)***
Economic Capacity (logged) $_{t-1}$	−0.674 (.429)*
Natural Resources $_{t-1}$	−0.057 (.055)
Troop Quality (logged) $_{t-1}$	1.445 (.542)***
Political Regime $_{t-1}$	0.175 (.151)
Judicial Quality $_{t-1}$	0.010 (3.52)
R^2	0.2598
N	340

Note: Robust standard errors clustered by country in parentheses.
* $p < .1$; ** $p < .05$; *** $p < .01$.