

Hierarchy and Sovereign Debt: Crises and Consequences in International Capital Markets*

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The COVID-19 pandemic has spurred historic debts across the world. Lower tax revenues, coupled with increased spending have put at least 50 countries at moderate or higher risk for debt distress, as defined by the IMF.¹ This number will only increase. Even before the pandemic, states were struggling with debt burdens, as we observed economic crises in Argentina and Lebanon. During the pandemic, Zambia defaulted, while Tanzania, Chad, and Ethiopia requested debt relief to avoid the same fate.

Access to sovereign credit provides states a myriad of political and economic benefits. Credit allows states to address short-term fiscal shortfalls during financial crises and smooth out government consumption. In addition, debt provides leaders with important fiscal resources to satisfy key constituents and stave off political opposition. States largely avoid repudiating their debt obligations to maintain their access. But what happens when states fail to repay their debt? According to economic theory, the financial market should punish defaulters with higher borrowing costs or even exclusion (Eaton and Gersovitz 1981). Empirically, the results are mixed (Panizza, Sturzenegger and Zettelmeyer 2009, Gelos, Sahay and Sandleris 2011, Sandleris 2016). Why this disconnect? Some have argued that investors have short memories and forget the lessons learned from previous financial crises (Reinhart and Rogoff 2008). Others argue that private investors face collective action problems and thus fail to effectively organize punishments against defaulters (North and Weingast 1989*b*).

In this study, we present an alternative explanation of why some states largely escape the punitive consequences of default: Borrowing states' relationship with the United States will affect markets' perceptions of states post-default. The US's influence on the international system is far-reaching. Whether through security agreements, the power of the dollar, or its influence on international organizations, the US shapes the interactions of many, if not most states. The structure of the relationships through which the US exerts is hierarchy, as defined by David Lake (Lake 2009). The US dominates some states, while others are relatively free of American influence. The question we address here is how developing states' hierarchical relationships with the US affects

¹<https://www.imf.org/external/Pubs/ft/dsa/>

debt management policies and interactions with market actors.

We argue that strong hierarchical relationships provide developing states incentives to break debt obligations. This is not because of expectations of American bailout, but because these supported states face less punishment from the lending market. US support repairs states' reputations faster than non-supported states. As a result, supported states have less to fear to abandon their debt obligations.

We test our argument with a series of empirical analyses using data on debt restructuring episodes from 1975 to 2012. We find that states with stronger hierarchical relationships with the United States are more likely to restructure existing debt obligations and are more likely to force large losses on investors. Yet these same states largely avoid the harsh consequences normally associated with debt restructuring. Supported states face lower borrowing costs and wait shorter periods of time to re-enter the bond market after a debt restructure.

Our argument and findings have several implications for the existing debt literature. First, the debt literature often focuses on state-centered explanations of debt. For example, democratic institutions and partisan preferences are strong predictors of behavior in lending markets (Beaulieu, Cox and Saiegh 2012, DiGiuseppe and Shea 2019). Our argument shows the importance of how international factors such as hierarchical relations change the incentives on how states address debt problems. In doing so, we build off previous literature to show how external factors affect debt decisions (Gray 2013, Aklin and Kern 2019, Lipsy and Lee 2019) without minimizing the importance of domestic factors. Domestic politics may affect how these hierarchical relationship operate, allowing different levels of analysis to interact with each other.

Second, our results show how important great power politics matters at the international financial markets. Previous examinations on the effects of default and restructuring have focused on domestic economic conditions and outcomes. Our analysis shows how the political relationships of states - even when states are not directly negotiating over debt - matter to financial markets.

Finally, our study has implications on security and alliance politics. American hierarchy is often predicated on security issues, as states that offer the US some type of geo-political advan-

tage (i.e. access to ports, military bases, etc) will be more attractive allies. As a result, security dynamics may shift hierarchical relationships, changing states' incentives on how to handle debt. Similarly, debt has large security implications, as credit access affords huge security advantages. For example, access to credit provides advantages in war and international bargaining (Shea and Poast 2018). Thus our findings have implications for the IPE-conflict nexus.

1 The (international) politics of debt

The ability to borrow allows governments to raise more resources, more quickly than they could with tax revenue alone. This additional revenues comes without the political repercussions of raising taxes. Debt can be used to provide private benefits to supporters, curry favor with opposition groups, or smooth domestic consumption more generally, all of which increases the incumbent's likelihood of maintaining political power (Barro 1979, DiGiuseppe and Shea 2015, 2018, Ballard-Rosa 2016). The ability to borrow, and at low rates, not only aids domestic security but it also has positive implications for international security. Borrowing relaxes governments' budget constraints, allowing them to increase investment in security without sacrificing domestic goals (DiGiuseppe 2015). This ability helps explain why states with better credit access, often democracies, are more likely to win wars (Rasler and Thompson 1983, Schultz and Weingast 2003, Shea 2014). In sum, sovereign debt is an important revenue stream for states, explaining why over 20 percent of all international financial flows involve sovereign debt (Tomz and Wright 2013).

While debt is important, it must be repaid. Yet, sovereign immunity and lack of collateralized bonds, makes the legal enforcement of sovereign debt exceptionally weak. For this reason, significant research has puzzled over why lenders lend and why borrowers repay. As an explanation for lending, international investors are willing to provide capital as long as the return compensates for the riskiness of the investment. Lenders attempt to detect the likelihood of cheating ex-ante by screening for debtors' ability and willingness to repay (Stiglitz and Weiss 1983). Ability to pay – or whether or not a state has the financial resources to meet its obligations – is driven by factors

like public debt, inflation, the current account balance, and GDP growth (Manasse and Roubini 2009). Willingness to pay on the other hand is political – whether or not governments are willing to elevate foreign commitments over domestic objectives. Investors care about willingness to pay because the decision to repudiate ultimately lies with the sovereign, and creditors must be able to manage and price risk effectively. Unfortunately, investors lack complete information because states’ willingness to pay is private information, for which leaders have an incentive to misrepresent (McGillivray and Smith 2008, Van Rijckeghem and Weder 2009).

Given incomplete information, investors rely on a variety of heuristics to determine how likely a government is to repay its foreign commitments (Tomz 2007). The bulk of scholarship on political determinants has focused on the role of domestic political institutions. For example, democracies appear to be more creditworthy, winning an “advantage” in international capital markets (Schultz and Weingast 2003). Whether it is because of executive constraints (North and Weingast 1989*a*), electoral punishment (Schultz and Weingast 2003, Saiegh 2005), strong rule of law (Biglaiser and Staats 2012), or heightened transparency (Copelovitch, Vandrud and Hallerberg 2018), democracies receive better credit access and ratings (Beaulieu, Cox and Saiegh 2012). Once they have credit, democracies may also default more (Saiegh 2005), act more coercively towards their creditors (Enderlein, Trebesch and von Daniels 2012), and receive larger creditor haircuts (Mamone 2020).

Part of these conflicting findings may be because the relationship between debt and democracy is contingent on those who have a stake in the outcome having access to political power (Stasavage 2011). Thus, distributional preferences, and the diversity of distributional preferences, also matter. For example, unemployed citizens are less likely to support debt repayment, while those dependent on capital inflows or who own assets sensitive to devaluation are more likely to support repayment (Tomz 2004, Curtis, Jupille and LeBlang 2014). These preferences usually map onto partisan politics (Nelson and Steinberg 2018), and help explain why right leaning governments, because they are generally supported by pro-repayment constituencies, receive better credit ratings (Campello 2013, 2015). Partisanship also explains the terms under which governments are willing

to borrow (Ballard-Rosa, Mosley and Wellhausen 2021a) and how they negotiate debt restructurings (DiGiuseppe and Shea 2019).

While much of the literature has focused on how domestic factors impact states' access to credit, investors also consider international conditions, both economic and political, when screening potential borrowers. For example, global capital liquidity impacts access to and the cost of sovereign credit. When the supply of global capital is high, creditors are willing to provide credit to riskier markers at lower rates. When supply is low, even "good" governments might find it difficult to borrow (Mosley 2003, DiGiuseppe and Shea 2016). The financial health of regional neighbors may also lead to credit restrictions with significant spillover implications.

International considerations, and how they impact investors' lending decisions, are also present in arguments of moral hazard. The presence of third parties, usually the IMF, willing to bail out governments who experience financial trouble, acts as subsidized insurance and incentivizes states to borrow with less caution for the future (Vaubel 1983, Dreher 2004, Dreher, Sturm and Vreeland 2015, Stone 2008). The ability to borrow quickly and easily from the IMF may unintentionally decrease financial stability and increase financial crises (Lipsey and Lee 2019).² In this vein, Aklin and Kern (2019) are among the first to argue that political commitments can incentivize the same type of risky behavior. US support provides a seal of approval to credit markets, who extend credit to US allies at lower interest rates. Ambrocio and Hasan (2021) also find that US political ties are associated with higher credit ratings and lower bond yields. Whether this incentivizes overlending on the part of investors or overly expansionary policy on the part of borrowers, US support increases the likelihood of experiencing a financial crisis (Aklin and Kern 2019).

Despite domestic and international factors that increase the risk of default, financial crises are still rare. In part because where screening fails to match risk with return, investors possess alternative tools to deter sovereigns from repudiating their foreign commitments. Specifically, borrowers may repay their debts because investors can punish cheaters ex post. The canonical argument is that default should increase future borrowing costs up to the point of capital market exclusion

²Empirical evidence on IMF-facilitated moral hazard is mixed. For example, see Jeanne and Zettelmeyer (2005).

(Eaton and Gersovitz 1981). Yet, empirical evidence has been mixed (Panizza, Sturzenegger and Zettelmeyer 2009, Gelos, Sahay and Sandleris 2011, Sandleris 2016). Bulow and Rogoff (1989, 49) go so far as to claim that “debts which are forgiven are forgotten,” meaning that fear of punishment may not be a sufficient disincentive for sovereign default.

In what follows, we provide one potential explanation for these inconsistent findings, focusing on the role of international politics. While previous studies consider how international political support impacts access to credit, the impact of political ties on post-default behavior has largely remained unexamined. We argue that the same mechanisms linking US support to better credit market access, more expansionary policies, and higher rates of financial crisis, also lead to heterogeneous treatment in post-default markets. The lack of evidence for a lasting punishment effect may be explained by the fact that borrowers in the US sphere of influence receive preferential treatment from investors, even after default. Our argument highlights how system-level variation provides an important, and often overlooked, explanation for sovereign credit behavior.

2 Hierarchy and debt

Our theoretical argument centers on how the hierarchical relationships in the financial system conditions sovereign credit outcomes. We assume that states benefit from access to international capital markets and that private investors benefit from the profits that lending generates. However, sovereign lending is more than a two-player bargaining game because outside actors can intervene. Third-parties – here we focus on major powers like the United States – shape the beliefs of both borrowers and lenders, with observable implications in international capital markets.

We follow Lake (2009, 9) and conceptualize hierarchy as “the extent of the authority exercised by the ruler over the ruled.” This leads to a system where major powers, like the United States, maintain relationships with a network of protégés. These subordinate states grant access to the major powers’ military forces, provide political and economic concessions, and promote the major powers’ ideas and values. In exchange, subordinate states increase their territorial integrity, reduce

security uncertainty, and receive the benefits of a rule-based system (Lake 2009, McDonald 2015, Nieman 2016).

Because major powers benefit from their hierarchical relations, they have strong incentives to protect the security of their subordinates, and to signal their support to international audiences as a means of deterrence (McManus and Nieman 2019). This does not mean that guarantees from a dominant state are absolute. Indeed, dominant states are well aware that such guarantees would incentivize riskier behavior in subordinate states and facilitate moral hazard (Lake 2009). Obligations under hierarchy are not ironclad, creating uncertainty, and are therefore more akin to a signal than a promise. While support can be signaled in many ways (McManus 2018, Yarhi-Milo, Lanoszka and Cooper 2016, Machain and Morgan 2013), it implies that a major power *might* be willing to intervene on behalf of its protégé.

We focus specifically on how the United States' relationships with subordinate states. The US has played the largest role in shaping the post World War II financial system, and remains one of the only countries with the economic resources required to intervene on behalf of a subordinate state in fiscal distress. Aklin and Kern (2019) go so far as to call the United States the “actual lender of last resort.” Previous work has also established the importance of US debt, the US dollar, and US monetary policy to the workings of the international financial system (Miranda-Agrippino and Rey 2020, Gourinchas, Rey and Sauzet 2019).

Our central argument is that US supported states are incentivized to engage in riskier behavior, leading to a higher probability of default. However, expectations of continued American support allow protégé states to benefit from preferential treatment in international capital markets even after default, leaving the moral hazard problem unchecked. For this to occur, US support must update the rational expectations of both borrowers and creditors. We argue that this occurs through two mechanisms, which are neither mutually exclusive nor empirically distinguishable in the context of this paper.

First, US support relaxes borrowers' budget constraints, through both direct and indirect channels. For debtors, being in the US sphere of influence can lead to direct transfers, which are often

viewed as compensation for the surrender of authority (Lake 2009, 2013). This compensation can come in the form of construction or employment contracts surrounding US security forces (Cooley 2008). In other cases, like the Philippines, it can also be accompanied by significant humanitarian aid and disaster relief. President Duterte’s decision to cancel, and then renegotiate its Visiting Forces Agreement with the United States conditional on increased financial assistance, provides an example of how protégé states may even leverage major powers’ support for increased cash benefits.³ Empirically, the United States sends significantly greater aid to its allies (Alesina and Dollar 2000, Dunning 2004) and to strengthen this point, Figure 1 depicts the relationship for broader measures of US support. Countries with above average levels of US support receive significantly more economic and military aid.⁴

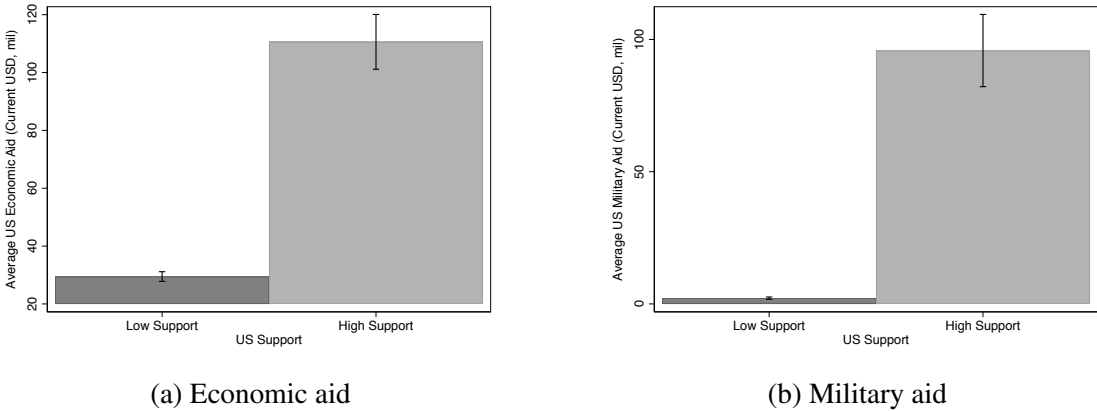


Figure 1: Average US Aid (Current USD, mil) by US support (high/low)

Being in the US sphere of influence can also provide an indirect fiscal cushion, assuming that government resources are fungible. US support can increase international interactions with the private sector. For example, troop deployments serve as a “seal of approval” increasing both foreign direct investment and trade between home and host countries (Biglaiser and DeRouen Jr 2007, Biglaiser and DeRouen 2009). It thus has a catalytic effect whereby foreign capital owners are more confident in the security of their assets and are willing to increase their investment in a

³“Philippines Demands More US Security Aid to Retain Pact.” *ABC News*. February 15, 2021.

⁴Data on US support comes from McManus and Nieman (2019) and is described in Section 3. Data on economic and military aid is from the World Bank. Since this is not the main part of the paper, we present simple correlations in support of the proposed mechanism. See Appendix A1 for bivariate regression models with country and year fixed effects.

host country. US support can also decrease spending, primarily through the substitution of foreign security guarantees for domestic military expenditures. Lake (2009) claims that not only will dominant states be more likely to join conflicts in which a subordinate is involved, but that this incentivizes subordinate states to reduce their own defense efforts. DiGiuseppe and Shea (2021) find that US support coupled with a formal alliance indeed decreases military spending in partner states. Funds originally earmarked for security can be reallocated towards other aspects of the domestic budget.

Second, and relatedly, US support also implies that the US would provide bailouts in the event of economic distress. In other words, US support signals both continued actions (direct and indirect cash transfers) and default specific actions (bailouts). States who find themselves in debt distress often turn to external actors for help in the form of international bailouts. Bailouts act as an insurance scheme to transfer (part of) the financial cost away from domestic taxpayers and to foreign ones. The typical answer to liquidity problems is an IMF program, which were designed to serve as a lender of last resort for countries experiencing short-term balance of payments difficulties. Yet the IMF is not impartial and the unparalleled size of the US economy allows it to sway IMF decisions to the benefit of strategically important states. Countries that are important to the US are more likely to receive an IMF program (Dreher, Sturm and Vreeland 2009). Programs are also larger (Oatley and Yackee 2004), with fewer conditions (Dreher and Jensen 2007) and shorter suspensions (Stone 2004). The US influence also carries over to other lending institutions like the World Bank (Fleck and Kilby 2006) and the Asian Development Bank (Kilby 2006).

The US also has the ability to bailout countries directly. For instance, Schneider and Tobin (2020) argue that major powers should be more likely to provide a direct (bilateral) bailout when they are politically exposed to a crisis country. Supporting allies during financial crises provides the US with important benefits, like maintaining favorable governments in debtor countries who will continue to support the US preferred trade and military policies. Allies of the United States are thus more likely to receive a bilateral bailout and Figure 2 demonstrates that this correlation is robust to our preferred measure of latent US support. On average, countries who receive an

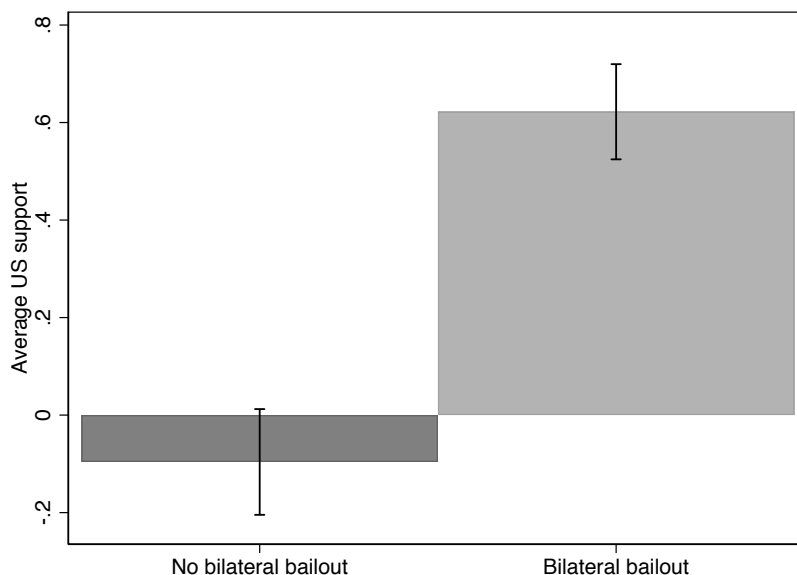


Figure 2: Average level of US support by US bilateral bailout

American bailout during a financial crisis also receive higher levels of US support.⁵ Similarly, Aizenman, Ito and Pasricha (2021) find that US is more likely to provide Central Bank Swap Arrangements to its allies. Swap lines provide another opportunity to inject rapid liquidity into markets that the US has deemed important to its strategic interests.

International hierarchy thus links security with economic outcomes, providing both a fiscal cushion and subsidized insurance to subordinate states. Incumbent governments benefit from both of these mechanisms (for example, higher growth is rewarded electorally (Lewis-Beck 1988, Powell and Whitten 1993)), but it may also give them false confidence to pursue lax regulations or over-expansive macroeconomic policies. By creating an alternative stream of revenue in normal and default situations, US support incentivizes less fiscal prudence. This in turn can lead to over-leveraging domestic financial systems. If macroeconomic principles are lax enough, deep seated financial instabilities are created (Reinhart and Rogoff 2008, Schularick and Taylor 102). US support therefore signals to borrowers that they can pursue expansionary policy without having their financial house in order. For example, Aklin and Kern (2019) find that US troop deployments

⁵Data on bilateral bailouts is from Schneider and Tobin (2020). Observations are limited to countries experiencing a financial crisis and a bivariate regression model with year time trend is available in Appendix A2.

lead to lower capital controls and the increased likelihood of implementing a deposit insurance mechanism. In other words, both mechanisms can lead to moral hazard. Borrower states have rational expectations that they won't bear the full cost of imprudent economic policy in normal and abnormal situations.

Yet, moral hazard is only a concern if US support also changes the expectations of creditors. Creditors have ex-ante (screening) and ex-post (punishment) tools to encourage repayment. Therefore, creditors must share borrowers' beliefs about the link between hierarchy and economic intervention, otherwise they would not be willing to extend credit or would do so at higher rates. We argue that fiscal transfers and bailouts not only encourage riskier economic behavior for borrowers, but they also provide heightened assurances for creditors. Both mechanisms reduce lenders' incentives to scrutinize borrowers under the US political umbrella.

For example, by relaxing subordinate states' budget constraints (directly or indirectly), US hierarchy signals to creditors a greater ability to pay. If American-provided resources are fungible, fiscal benefits of hierarchy can be redistributed. They free up other areas of the government budget that can be used to repay foreign creditors. They also impact many of the macroeconomic indicators, like the current account balance and GDP growth, that creditors rely on as a heuristic for creditworthiness. Looser budget constraints may indeed make US supported borrowers look better "on paper" while at the same time generating economic vulnerabilities.

Similarly, if creditors believe that US support will be forthcoming in crisis situations, then direct or US-pressured international bailouts continue to signal an increased ability to pay. They provide revenue that, while not directly earmarked for investor repayment, free up alternative areas of government spending.⁶ In this case, repayment comes from international taxpayers rather than domestic ones, but nonetheless the bill is more likely to get paid. Even better for creditors, Aklin and Kern (2019) demonstrate a correlation between troop deployments and lower economic downturns following financial crises. While less robust, IMF programs are also linked to favorable growth outcomes when controlling for adverse selection (Bas and Stone 2014). If US support leads

⁶This is an integral part of the global push for burden sharing between creditor groups. It has long been argued that bailouts from official creditors subsidize repayment to private creditors, specifically bondholders.

to additional funds for creditor repayment, and if those funds help restore debtors' solvency faster, creditors should prefer to lend to friends of the United States. International political relationships should be an important factor in how closely creditors scrutinize potential borrowers.

Our theory about hierarchy and sovereign debt is a general one with implications for multiple stages of the lending relationship. Hierarchy impacts both lenders' incentives to lend and borrowers' incentives to borrow. For lenders, it impacts both incentives to screen and incentives to punish. One implication of our theory is that US hierarchy and its implied support should improve sovereign borrowing conditions. US support signals an increased ability to pay during good and bad times and creditors should therefore extend more credit at better terms to US protege states. This expectation is consistent with Ambrocio and Hasan (2021), who find that US political ties lead to better sovereign credit ratings and lower bond yields.

Our empirical focus is testing hierarchy's importance after the creditor has already agreed to extend credit and at what rate. First, when US support is a credible signal to debtors' about the flow of resources, debtors should pursue riskier financial behavior, leading to higher rates of default.

H₁: US support will be associated with an increased of risk of external default

But what happens after default? US support should also impact creditors' use of sanctioning mechanisms. While default, and the circumstances of default, reveal new information to creditors about a debtor's priorities for repayment (Tomz 2007), it shouldn't change the the underlying signal of US hierarchy. Therefore, if there is a reasonable expectation that US support will continue and potentially ameliorate the crisis, US supported states should continue to receive preferential treatment in international markets relative to states outside the US' hierarchy. The second implication of our theory is that the impact of US support should carry over to the post-default period, lessening the punishment that US supported defaulting states must pay.

H₂: Given default, US support will be associated with decreased punishment in international financial markets

3 Empirical Analysis

To evaluate our expectation about the role of hierarchy in sovereign debt dynamics, we compile country-year data for developing states from the year 1970 to 2012. We conduct a number of tests. First, we examine whether US supported states are more likely to experience a debt crisis. We then examine how states are treated in the financial markets post-crisis. Specifically, we examine how long US supported states wait to re-enter capital markets and how much their credit costs change.

3.1 Data

Dependent variables We first want to explain debt crisis behavior of US supported states. The existing literature measures crises in several ways. For example, many scholars use Reinhart and Rogoff's crisis data (Reinhart and Rogoff 2008). The authors define debt crises as when states fail to make a payment, even a partial one. Tomz and Wright (2013) advocate for a broader definition; one that includes threats of default that result in restructuring. The Bank of Canada default database has an even broader definition: Even if a state continues to make payments on its debt without interruption, other government policies may cause investor losses (Beers and Nadeau 2014). For example, if governments purchase back part of their debt obligations that are trading below value in secondary market, this technically causes investor losses and thus is coded as a default.

Default can be an opaque event, where governments have incentives to hide information from its creditors. In addition, governments have a variety of tools relating to financial repression and inflation that undercut debt obligations without necessarily interrupting payments (Reinhart and Rogoff 2008). As a result, whether a state enters a crisis or not is not always easily observable. In addition, given that debt crises often end with some type of prolonged restructuring negotiations, the start and end dates of a debt crisis episodes are not always clear (Reinhart and Rogoff 2013).

Because of heterogeneity and ambiguity surrounding debt crises, we focus on one particular debt event: restructuring. When governments restructure their debt, old obligations are exchanged for new terms. These new terms usually reduce the principal or interest owed. As a result, investors

take a loss or a “haircut” (Cruces and Trebesch 2013).

There are several advantages to focusing on haircuts. First, it limits debt dynamics between governments and private investors. Since our argument focuses on how international capital markets treat states that are supported by the United States, we want to exclude debt crises that involve bilateral or multilateral lending. While these types of lending are important, we suspect that the hierarchy’s role in those debt dynamics will differ from private lending dynamics.

Second, there are clearer indications when a restructuring episode begins and ends, and the outcomes for government and investor are usually formalized and observable (Cruces and Trebesch 2013, Asonuma and Trebesch 2016). Using this information, we can measure how long states and investors negotiate and ultimately what cost reductions states receive. This latter point is important when analyzing the effects of a debt crisis on states’ future borrowing behavior. Instead of treating each debt crisis as a homogenous treatment, we can differentiate between those restructurings that lead to large investor losses and those restructuring that do not.

In the aftermath of a restructuring, we expect states to have difficulty in re-entering the debt market and/or face higher borrowing costs. To measure these outcomes, we first use Ballard-Rosa, Mosley and Wellhausen’s (2021*b*) data on bond issuance. We measure the time from the end of debt restructuring episode to a new issue in the bond market.

In addition, we measure the financial market’s reaction to debt restructuring episodes. Following Cruces and Trebesch (2013), we focus on bond spreads in secondary markets, using J.P. Morgan’s emerging markets bond spread data available through the World Bank. This measure is used widely in debt research to proxy both government borrowing costs and domestic credit markets (Cruces and Trebesch 2013, Eichengreen and Mody 2000, Durbin and Ng 2005).

Independent variables To capture the hierarchical relationship between the US and potential subordinate states, we use McManus and Nieman’s (2019) measure of major power support. Instead of focusing on one or two indicators of US hierarchical relationships, the authors use a Bayesian latent measurement model, using several observable components including leader visits,

alliances, military exercises, statements of support, arms transfers, troop deployment, and nuclear deployment.

Control variables In our various tests, we control for factors that may confound the relationship between hierarchy and debt crisis outcomes. It may be the case that characteristics of states that help predict whether a state enters a crisis or how the financial market perceives states' creditworthiness as a consequence of a crisis are the same characteristics that predict the strength of hierarchical relationships between the US and other states.

To begin, we control of the size of a state's economy using World Bank data on GDP (World Bank 2019). Larger states offer larger economic markets, and as a results tend to trade more. Trade markets are attractive to American firms and offer states more resources to manage debt issues. Similarly, we control for a countries' wealth using GDP per capita. We expect that wealthier states have more fiscal resources to manage debt and may prove to be attractive subordinate states to the United States. These data are also drawn from the World Bank.

States trade for a myriad of reasons besides simply the size and wealth a country. But trade increases the demand for American dollars given the dollarization of commodity markets. States that trade may also be more motivated to maintain debt obligations (Rose 2005). Therefore, we control for trade levels using World Bank data.

Our final economic control is natural resource wealth. Oil and other natural resources are important components to the American economy. As a result, the United States has incentives to develop strong relationships with natural resource abundant countries. In addition, natural resources provide states non-taxable income with which to manage their debt issues. Consistent with this, research shows that oil producing states receive better terms of credit, though this advantage may be contingent on the price of oil (Beaulieu, Cox and Saiegh 2012, Wegener et al. 2016).

Finally, we control for states' democratic institutions. There is a robust literature that connects democracy to debt behavior. Democracies are more prone to crises, yet receive borrowing advantages in the lending market (Beaulieu, Cox and Saiegh 2012, Saiegh 2005, Lipsy 2018,

Ballard-Rosa, Mosley and Wellhausen 2021*b*). Democracies may be more attractive subordinate states to the US as well (McDonald 2015). Democratic institutions afford protections of property rights for American investments abroad, along with providing more credibility to security agreements (Leeds 1999, Diguseppe and Poast 2018).

3.2 Main Results

We begin the analysis by examining the likelihood a state enters a debt crisis as a function of American hierarchical relationships in Table 1. Our focus is whether US support increases the proclivity of restructuring event. With a binary dependent variable, we use a logit model. To model the relationship between US support and states' debt crises, we add potential confounding variables discussed above. We also included two additional elements to this model. First, we include unit fixed effects to focus on within-country variation, while controlling for time invariant confounders. The US may support states based on time-invariant characteristics – such as geography – that also affects their connection with the global financial market. Unit fixed effects allows us to block these potential confounding paths.⁷ Second, we include linear, squared, and cubic time splines, following Carter and Signorino (2010). These are intended to address both linear and non-linear temporal dependencies in the data.

With these modelling specifications in place, our estimated effect of hierarchy on the probability of a restructuring event is positive and statistically significant. Substantively, a standard deviation increase (0.65) in US support increases the odds of a restructuring event by 64 percent.

Model 2 examines the likelihood of default instead of restructuring. While most debt crises enter into some type of restructuring episode, they do not necessarily have to. In addition, some states use default as a bargaining tactic in order to gain better terms in a debt restructure deal, while others do not (Asonuma and Trebesch 2016). To ensure that we are not picking up on some of these strategic elements by only focusing on restructuring events, model 2 examines default. We

⁷One downside of using unit fixed effects for our model is that states with time invariant outcomes (i.e. never default) are dropped from the sample. To ensure that this sample selection processes is not affecting our inferences, we run random effects and pooled-unit analyses as well. We find similar results.

Table 1: US Support and Debt Crises

	Restructure Crisis (1)	Default Crisis (2)	Haircut (3)
US Support	0.753*	0.801*	0.079*
	(0.244)	(0.269)	(0.037)
log GDP per capita	0.439	0.895	-0.141*
	(0.644)	(0.663)	(0.031)
log GDP	-1.919*	-1.921*	-0.027
	(0.541)	(0.544)	(0.022)
log Trade levels	0.415	-0.515	-0.009
	(0.413)	(0.440)	(0.051)
Resource Rents	-0.034	-0.030	0.004
	(0.022)	(0.023)	(0.002)
Democracy	0.433	-0.154	0.294*
	(0.603)	(0.635)	(0.089)
Years Since Crisis	-0.075		0.007
	(0.080)		(0.016)
Years Since Crisis		-0.357*	
		(0.091)	
Constant			1.898*
			(0.582)
Log-Like	-391.53	-309.50	
R-sq			0.33
N	1959	1458	141

* $p < 0.05$; Models 1 and 2 have unit fixed effects. Cubic and squared time spline estimates not shown. Standard errors reported in parentheses.

find similar results as model one. Substantively, a one standard deviation increase in US support increases the odds of default in a state by 69 percent.

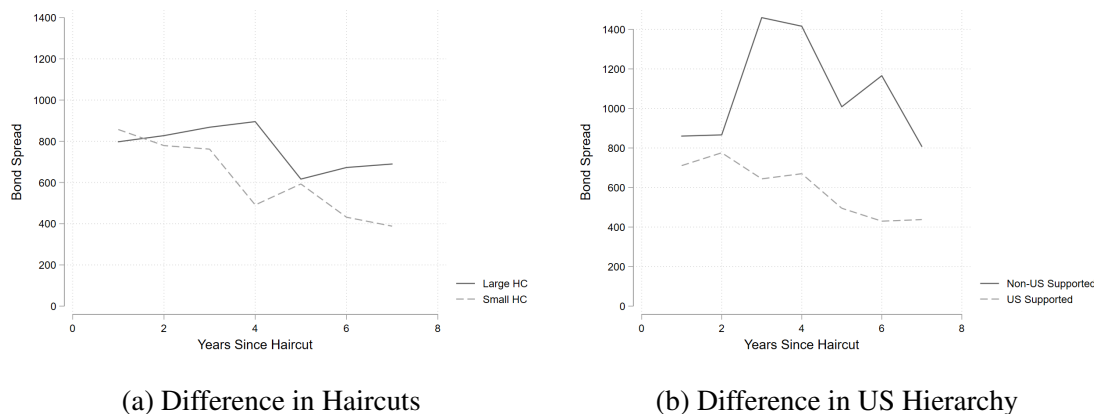
Model 3 examines the level of haircuts investors take when restructuring debt obligations with states. Higher haircuts represent higher investor losses and lower debt obligations for states. Strong hierarchical relationships with the United States results in higher haircut levels for states.

While higher haircuts temporarily relieves states' debt obligations, there are consequences in debt markets. States that negotiate higher haircuts face punishments in the lending markets: either higher lending prices on future loans or exclusion from the lending market altogether. However, if states believe that they will not suffer these punishments, they may be more forceful in negotiating high haircuts. We expect that states with strong hierarchical relationship with the United States

will not suffer the harshest of punishments following a restructuring event. Because of this, states with US support will negotiate higher haircuts.

To begin to analyze this component of our argument, we examine how secondary bond markets react to states exiting restructuring episodes using JP Morgan’s emerging market bond spreads. As a point of comparison, we replicate Cruces and Trebesch’s (2013) comparison of those states that negotiated large haircuts (above the mean of 37 percent) and those with smaller haircuts (below the mean). Consistent with the authors, Figure 3a shows that states with larger haircuts have higher bond spreads following restructuring. When we compare US supported states (again, using the mean as the delineator), we find a much larger difference in bond spreads between supported and non-supported states.

Figure 3: **Emerging Market Bond Spreads**



While the bond spread difference between supported and non-supported states is suggestive, we analyze the role of American support in a more systematic way. We regress bond spreads on US support, while controlling for potential confounders discussed above. Model 1 in Table 2 examines all countries where data is available, and we observe a negative relationship between US support and bond spreads. Substantively, a standard deviation increase in US support decreases bonds spreads by 93 basis points.

Model 2 limits the sample to country years after a restructuring episode. We observe a similar relationship as model 1, with larger substantive effect: a one standard deviation increase in US

Table 2: US Support and Bond Spreads

	Full Sample (1)	Post Restructure (2)	Post Restructure (1-7 yrs) (3)
US Support	-142.886* (59.479)	-201.136* (36.412)	-194.300* (56.977)
log GDP per capita	-2383.148* (619.949)	-1550.492* (427.628)	-3633.087* (907.783)
log GDP	553.503 (468.490)	199.443 (325.475)	1694.769* (728.586)
log Trade levels	384.697* (175.630)	19.991 (116.774)	-395.599 (221.508)
Democracy	618.094 (382.186)	393.801 (225.733)	21.580 (336.383)
Resource Rents	-13.221 (8.548)	-10.095* (5.017)	-13.160 (9.263)
Great Recession	299.172* (69.014)	327.270* (44.454)	385.191* (85.612)
R2	0.19	0.42	0.56
N	399	236	91

* $p < 0.05$; All models have unit fixed effects. Standard errors reported in parentheses.

support decrease bond spreads by 131 basis points. Model 3 limits the sample further, examining only the first seven years after a restructuring event, following Cruces and Trebesch's (2013) analysis. We find consistent results as the other models: states with US support face more favorable treatment in the bond market, even after a restructuring event.

Besides higher borrowing costs, another potential consequence of debt crises is exclusion from re-entering the bond market. Default and restructuring episodes demonstrate that states will not always repay all their obligations, which should make lenders wary to provide new lines of credit. As a result, we expect that states with restructuring episodes to be excluded from bond markets for longer periods of time. However, within the sample of restructuring crises, we again expect that US supported states to face less consequences. To measure this exclusion, we count the number of years from the end of the restructuring crisis to the time the state issues its next bond, using Ballard-Rosa, Mosley and Wellhausen's (2021b) data. We use a Cox Proportional Hazard survival model to analyze this time dynamic. Table 3 shows that states with more US support are more at

“risk” for entering the bond market. In other words, US supported states spend less time waiting to enter the bond market after a restructuring episode. Model 2 in Table 3 replicates model 1, but controls for the size of the haircut. We observe similar results.

Table 3: US Support and Re-entry into Bond Market

	(1)	(2)
US Support	2.569*	2.621*
	(1.071)	(1.128)
Haircut Size		-0.017
		(0.016)
log GDP per capita	0.307	-0.273
	(0.429)	(0.493)
log GDP	-0.369	-0.403
	(0.499)	(0.447)
log Trade levels	0.054	-0.277
	(0.970)	(0.962)
Resource Rents	-0.035	-0.003
	(0.032)	(0.036)
Democracy	-7.398*	-5.587
	(3.509)	(3.178)
Log-Like	-16.57	-16.18
N	107	107

* $p < 0.05$; Coefficients reported. Standard errors reported in parentheses.

The various empirical tests produce consistent results: states supported by the United States are more likely to enter a debt crises; are more likely to extract greater investor losses; face more favorable lending conditions in bond markets; and re-enter bond markets quicker than non-supported states after a debt crisis. These results point to the importance of global conditions when explaining fiscal decisions and state-investor dynamics.

4 Conclusion

In this study, we argue that international hierarchical relationships with the United States shape states’ incentives on how they handle debt. These same relationships affect how markets perceive borrowing states. We find that US supported states are more likely to enter debt crises and are better at negotiating higher investor losses. In addition, US supported states largely avoid the negative

punitive consequences of these debt crises. Supported states face lower bond spreads and shorter wait times re-entering the bond market.

Scholars have examined the role of a myriad of international factors and default, ranging from concerns for international reputation, to contagion effects, to the role of international organizations. The importance of focusing on external factors in understanding debt dynamics has been stressed elsewhere (Cohen 2017, Chaudoin and Milner 2017). We not only hope to add to this approach by focusing on hierarchical relationships, but we think that our argument can help us understand other international dynamics of debt as well. For example, the lending policies of the World Bank or IMF condition how states address debt problems (Lipsy and Lee 2019), those lending policies are shaped by the US and other powerful states (Clark and Dolan 2021). US intervention into global financial crises can also affect contagion dynamics and reputational consequences.

We acknowledge that this study does not – and cannot – incorporate all aspects of American hierarchy and debt dynamics. For example, Lake’s conceptualization of hierarchy runs along separate security and economic dimensions. Our treatment of hierarchy in this study is general, while our measure of US support is focused mostly on security dynamics. In future research, we plan to separate different dimensions of hierarchy, both conceptually and empirically.

In addition, we plan to analyze debt in conjunction with other linked policies. The United States commonly uses security agreements to facilitate American investment and trade abroad (Berger et al. 2013, Leeds et al. 2002). We expect that US involvement in other states’ debt problems may also lead to policies advantageous to American security or economic interests, but not necessarily beneficial to sovereign lenders. For example, when the United States guaranteed a \$1 billion private loan to Iraq, the US specified that Iraq must pay arrears to the Basrah Gas Company, which is partially owned by the Shell Oil Company.

Finally, our study purposefully focuses on the effects of American hierarchy on states’ debt dynamics with private lenders. This limited focus was designed to simplify the lending dynamics. Yet, the sovereign lending market is full of different actors: private investors, international organizations, and other states. On the latter category, more and more new countries are offering new

loans to other countries. Most notably, China's lending has transformed the market, giving states once reliant on the IMF as a lender-of-last-resort, another line of credit. We plan to open our analysis to focus on bilateral lending, and acknowledge that their other hierarchical relationships in the world that shape debt dynamics. Up until recently, studies focusing on hierarchy in international relations focused mostly on security outcomes. We think that in order to understand how sovereign debt works, we need an understanding of the role of hierarchy in international finance.

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A US Support and Foreign Aid

Table A1: US Economic and Military Aid

	(1) Economic Aid	(2) Military Aid
US support (t-1)	156.088*** (8.294)	212.571*** (4.537)
N	4542	4542
Year FE	Y	Y
Country FE	Y	Y

Standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

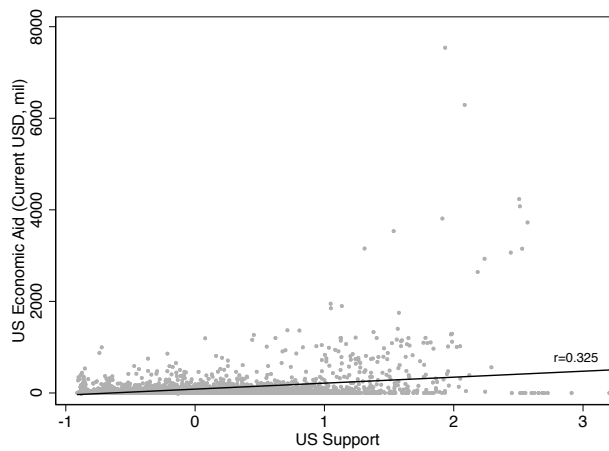


Figure 4: US Economic Aid

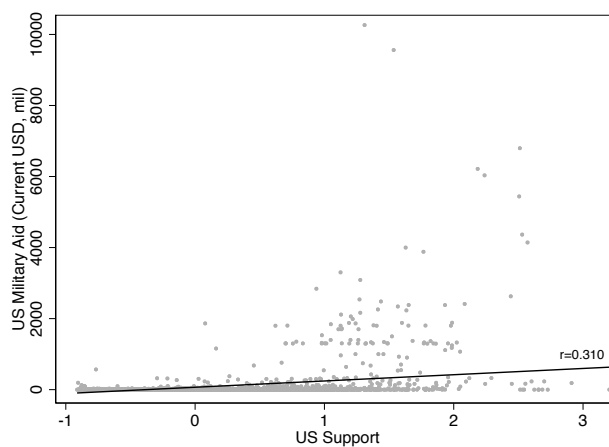


Figure 5: US Military Aid

B US Support and Bilateral Bailouts

Table A2: US Bilateral Bailouts

	(1) Bilateral Bailout
US support (t-1)	1.646*** (0.516)
Year	-0.010 (0.049)
N	97

Standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$