
ANTICIPATING VENEZUELA'S DEBT CRISIS: HIDDEN HOLDOUTS AND THE PROBLEM OF PRICING COLLECTIVE ACTION CLAUSES

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ABSTRACT

A creditor who asks for stronger enforcement rights upon its debtor's default will rationally accept a lower interest rate reflecting the greater expected recovery the exercise of those rights provides. Over a dozen studies, however, have failed to document this basic relationship in the context of the collective action clause, a key provision in sovereign bonds. We conjecture that this failure is because enforcing the rights in question requires collective decision-making among anonymous creditors with different interests, impeding market predictions regarding future price effects. The pricing of rights that require collective enforcement thus turns on whether the market observes an activist creditor willing to serve as a collectivizing agent to enforce the relevant rights in litigation. When activist creditors, intent on litigating, hide from the market in order to enhance their returns, the market lacks the information to price the collective rights accurately. In this Article, we use data from Venezuela's ongoing debt crisis to test this collective action story. Our data provides evidence of the absence of price differences in contract terms that require collective decision-making for enforcement. Conversely, we find that in those situations where the market identifies the presence of an activist creditor, the relevant rights do get priced. This evidence sheds light on how the absence of efficient pricing of terms in these collective markets can impede efforts by defaulting sovereign debtors, like Venezuela, to restructure their obligations. Moreover, the timing of when such terms are priced is critical for social welfare. Because collective action clauses that provide strong enforcement rights are not priced at the time the sovereign issues bonds, sovereigns are not given the right incentives to adopt these terms at the outset.

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INTRODUCTION

Venezuela's political and economic difficulties are familiar and well reported in the popular press.¹ What is less understood, however, is the role that Venezuela's ability to restructure its sovereign debt will ultimately play in the country's capacity to overcome the effects of the current crisis. Venezuela's current inability to restructure its debt derives from several sources, including the current regime's efforts to forestall acceleration of the debt as well as the impact of U.S. sanctions on creditors engaging with the current regime.² But if and when the current regime is replaced by a more benign government, the question once again will be at the forefront: Can Venezuela reach agreement with its creditors who claim the right to accelerated payment of over \$140 billion in defaulted loans? Answering that question requires scholars to better understand the impediments to bargaining that prevent individual creditors of sovereign debtors who hold rights of enforcement upon default from rationally agreeing to accept debt reduction in exchange for the promise of payment.

Understanding the impediments to a future Venezuelan government successfully restructuring its massive sovereign debt requires an appreciation of the differences between individual contract rights and collective contract rights. In the typical bilateral debt contract, breach occurs when the debtor fails to make a scheduled payment or takes some action that makes future payment less likely. After breach, the creditor demands full payment and, in the event that is not forthcoming, seeks a judgment in court.³ In commercial debt contracts, key terms—such as what events trigger a default, when payments can be accelerated, where one can sue, how one can enforce, and what remedies one can request—are governed by specific contractual provisions. The stronger the enforcement rights granted to the creditor under the contract, the greater the recovery the creditor can expect to obtain in the event of default and, therefore, the lower the interest rate the creditor will demand. Moreover, when a debt obligation is sold to a third-party purchaser, different rights of enforcement will command different prices.⁴ All things equal, a debt obligation with stronger rights of enforcement will trade at a higher price than one with weaker rights. We refer to this standard view of the relationship between interest rates, market prices, and contractual enforcement rights as the “bilateral model.”

As a theoretical matter, the assumption that different contract rights have varying effects and thus trade at different prices works well in bilateral debtor-creditor-third party purchaser relationships, where the incentives and actions of

¹ See, e.g., Colby Smith, *Venezuela's Welter of Debt Will Mean a Messy Restructuring*, FIN. TIMES (Asia), Feb. 2, 2019, at 12, <https://www.ft.com/content/4f78b714-25f2-11e9-b329-c7e6ceb5ffdf>.

² For more background, see Ben Bartenstein, *Investors Trapped as Venezuela Sanctions Put End to Bond Trading*, BLOOMBERG (Feb. 4, 2019, 2:05 PM), <https://www.bloomberg.com/news/articles/2019-02-04/investors-trapped-as-venezuela-sanctions-put-end-to-bond-trading>.

³ See Robert E. Scott, *A Relational Theory of Secured Financing*, 86 COLUM. L. REV. 901, 922 (1986).

⁴ *Id.* at 959.

each party are readily predictable. But much of commercial lending occurs through multilateral debt obligations where there are many anonymous and dispersed creditors with different characteristics, each of these creditors having participation interests in a single, standardized debt contract. To the extent that the rights in question operate through collective decision-making among anonymous creditors with different interests, making predictions regarding the future price effects of those contract rights is a difficult task. Any single holder of a bond, for example, may wonder whether sufficient other bondholders will act in concert to meet the required threshold to trigger a collective-action contract term (such as changing payment-related terms for the bond). And the task becomes more difficult when most investors are passive and will not choose to enforce collective contractual rights, requiring the single bondholder to assess whether activist creditors will choose to enforce those rights. This is particularly true when the activist creditors have financial incentives to remain hidden to maximize their returns from accumulating a position in the bond.

Our focus is the standardized sovereign bond contract that is characterized by a single debtor and many thousands of dispersed creditors, each of whom may have different interests and capabilities. In prior work, we analyzed the activities of activist creditors acting in sovereign bond markets as contract arbitrageurs.⁵ These activist hedge funds specialize in unearthing and then enforcing contract provisions that the market may not have fully priced, paid attention to, or even understood.⁶ The rents that these activist creditors capture are a function of the arbitrage services they perform for the market.⁷ But what are the consequences if the market does not absorb the pricing efficiencies that arbitrage services typically provide because the arbitrage is hidden from the market's view? In this Article, we explore the case in which activist creditors are able to capture rents while hiding from the market. Addressing the significance of hidden activist arbitrage for market pricing and debt restructuring allows us to take a further step in understanding in what ways and under what circumstances activist creditors influence the value of collective, as contrasted with individual, contract rights.⁸

We advance a theory of how creditors' contractual rights of enforcement are priced by the sovereign debt market—a theory we call the “collective action” model.⁹ We distinguish between those contract rights that a creditor receives

⁵ See, e.g., Stephen J. Choi, Mitu Gulati & Robert E. Scott, *The Black Hole Problem in Commercial Boilerplate*, 67 DUKE L.J. 1, 72 (2017).

⁶ MITU GULATI & ROBERT E. SCOTT, *THE THREE AND A HALF MINUTE TRANSACTION: BOILERPLATE AND THE LIMITS OF CONTRACT DESIGN* 9-17 (2013) (describing case of *pari passu* clause and Elliott Associates' litigation against Republics of Peru and Argentina).

⁷ See Choi, Gulati & Scott, *supra* note 5, at 70.

⁸ For two articles that previously identified the need to differentiate individual and collective contract rights in the corporate bond context, see Marcel Kahan, *Rethinking Corporate Bonds: The Trade-Off Between Individual and Collective Rights*, 77 N.Y.U. L. REV. 1040, 1070-85 (2002) and Marcel Kahan & Edward Rock, *Hedge Fund Activism in the Enforcement of Bondholder Rights*, 103 NW. U. L. REV. 281, 282-83 (2009).

⁹ See *infra* Part I (discussing collective action model of pricing contract terms).

directly and individually (a “unilateral right”) and those that require collective action among a group of parties to the same contract (a “collective action right”). We posit that markets will price differences in unilateral rights when the participants are sophisticated commercial parties. For example, take the unilateral right to sue under the law of the jurisdiction specified in the contract. If German law is more predictably protective of creditors’ contract rights than Italian law, then other things equal, creditors will consider debt contracts written under German law to be more valuable than those written under Italian law and thus will pay more to acquire those debt obligations on the market.

In contrast, where a contractual right requires a group of contracting parties to coordinate in order to invoke the right—such as a term that requires a certain percentage of bondholders to agree to change payment-related terms—the pricing of variations in this collective action term will depend not only on the explicit contractual language but also on the range of investors in the market. A debt contract that by its explicit terms is more difficult for a group of contracting parties to modify (e.g., one requiring a 90% vote of the creditors for a modification as compared to one requiring a 75% vote) may nonetheless have a higher likelihood of modification if the parties to the first contract are more concentrated and willing to act collectively.¹⁰ Collective action requires coordination, and coordination requires sufficient access to information to predict the actions of other creditors. Consider, for example, a party who contemplates purchasing a debt obligation that provides for the right to sue the debtor for nonpayment if a stated percentage of all of the creditors agree to declare the debtor in default. The value of the right to enforce the debt is a function of what those other creditors will do. Estimating that value requires the prospective purchaser of the obligation to determine the probability that the requisite number of creditors will join in the default declaration.

But imagine that predicting what the other creditors will do depends on knowing the intentions of a few activist creditors whose identity is unknown and who may have the incentive to block the default declaration (for example, because they sold credit default swaps on that debt).¹¹ Now the value of the contract right is highly uncertain and may not be capable of determination until these few creditors reveal themselves to the market. A bond requiring 90% of the creditors to agree may not in fact provide greater protection against a change in payment terms compared with a bond requiring only 75% of the creditors to agree if the market is unaware of the precise positions of the activist creditors with the incentives to assemble a holdout block. In short, where the market is uncertain of the composition and the incentives of the parties to debt obligations with collective action terms, explicit differences among contracts in the rights embodied in their collective action terms may not get priced at all.

¹⁰ See *infra* Part I.

¹¹ For such an example, see Matt Levine, Opinion, *Maybe Companies Will Get Rid of CDS*, BLOOMBERG: MONEY STUFF (May 23, 2019, 12:00 PM), <https://www.bloomberg.com/opinion/articles/2019-05-23/maybe-companies-will-get-rid-of-cds> (discussing U.S. Bank Nat’l Ass’n v. Windstream Servs., LLC (*Windstream v. Aurelius*), No. 17-cv-07857, 2019 WL 948120 (S.D.N.Y. Feb. 15, 2019)).

To test the predictions of this collective action model against the bilateral model, we collect data on Venezuela's sovereign bond offerings as well as information about the creditors who were holding those bonds. Over the past two decades, more than a dozen empirical studies have examined the pricing of "modification" terms, a key set of contract terms in sovereign bond contracts that set the vote thresholds required for modifying the payment terms of a bond (such as principal amounts, interest rates, and dates when payments are due). Such modification terms are known as "collective action clauses" ("CACs").¹² CAC thresholds generally range from a high of 100% (unanimity) to a low of 75% of the principal amount of the bonds.¹³ Achieving the necessary voting threshold is a precondition to the defaulting sovereign's ability to bargain for a reduction in its payment obligations. These restructuring efforts can be thwarted, however, if a sufficient number of bondholders obtain the votes to block a modification and elect instead to pursue litigation to recover the principal amount of the debt. This, of course, is the holdout strategy pursued by the activist creditors who seek to capture rents at the expense of more passive creditors (and the citizens of the defaulting sovereign). Given the greater leverage a blocking position affords an activist creditor, the prediction from the bilateral model is straightforward: the higher the vote threshold required for a modification, the stronger the bargaining position of any given creditor upon default. Therefore, bonds with the 100% vote requirement should command a higher price than those with the 85% requirement, and those in turn should be more valued by creditors than bonds with the 75% threshold.

There are two reasons why, in theory, differences among these provisions—whether a sovereign bond's payment terms require a vote of 100%, 85%, or 75% of the creditors for modification—should affect the price of the bond: First, other things equal, because an 85% vote threshold is harder for the sovereign debtor to obtain than a 75% threshold, the sovereign seeking to restructure its debt is motivated to offer holders of the 85% bond a larger payment to obtain their consent. Second, on the flip side, because it is easier for activist creditors holding the 85% bond to organize collectively to block a sovereign's restructuring attempt, they can more easily hold out and, by litigating, coerce the debtor into offering a potentially greater recovery.

¹² The primary reason for the research interest in CACs and their pricing is that they have been seen on multiple occasions by public-sector institutions as important policy tools to help reduce the social costs of holdout creditors disrupting sovereign restructurings. See generally W. Mark C. Weidemaier, Mitu Gulati & Anna Gelpern, *When Governments Write Contracts: Policy and Expertise in Sovereign Debt Markets*, in *CONTRACTUAL KNOWLEDGE: ONE HUNDRED YEARS OF LEGAL EXPERIMENTATION IN GLOBAL MARKETS* 92 (Grégoire Mallard & Jérôme Sgard eds., 2016).

¹³ Sometimes these collective provisions operate across all of an issuer's bonds ("aggregated" clauses) and sometimes they operate on an individual, bond-by-bond basis. See Anna Gelpern, Ben Heller & Brad Setser, *Count the Limbs: Designing Robust Aggregation Clauses in Sovereign Bonds*, in *TOO LITTLE, TOO LATE: THE QUEST TO RESOLVE SOVEREIGN DEBT CRISES* 109, 109-112 (Martin Guzman, José Antonio Ocampo & Joseph E. Stiglitz eds., 2016).

Despite the importance of these CAC thresholds, virtually none of a dozen or so prior studies of price effects among different CAC terms find evidence supporting the prediction that the markets will value bonds with the 100% vote requirement more highly than the 75% bonds. Instead, the majority of studies report the price effect of particular CAC terms to be somewhere between negligible and zero.¹⁴ And for those papers that do find price effects, the direction of the price movement is inconsistent and only for subsets of the data: some studies show small positive effects, others show small negative effects, and yet others find results like U-shaped curves.¹⁵ Even though a holdout strategy (a) requires strong contract rights (so a creditor does not get crammed down involuntarily) and (b) provides returns that are as high or higher than if the creditor is unable to hold out, the empirical research consistently fails to show that bonds with stronger collective action contract terms command higher prices than those with weaker terms. In short, the empirical analysis of sovereign bond contracts has failed to map on to the bilateral model of debt pricing.

We build on these prior empirical studies by using a natural experiment thrown up by the Venezuelan debt crisis of 2014-2019 to test the predictions of

¹⁴ See, e.g., INT'L MONETARY FUND, STRENGTHENING THE CONTRACTUAL FRAMEWORK TO ADDRESS COLLECTIVE ACTION PROBLEMS IN SOVEREIGN DEBT RESTRUCTURING 15-19 (2014), <https://www.imf.org/external/np/pp/eng/2014/090214.pdf> [<https://perma.cc/QAT9-U5XB>]; INT'L MONETARY FUND, THIRD PROGRESS REPORT ON INCLUSION OF ENHANCED CONTRACTUAL PROVISIONS IN INTERNATIONAL SOVEREIGN BOND CONTRACTS 6 (2017) [hereinafter IMF THIRD REPORT], <https://www.imf.org/en/Publications/Policy-Papers/Issues/2017/12/15/pp113017third-progress-report-on-cacs> [<https://perma.cc/8MQU-5RBN>]; Sönke Häselser, *Collective Action Clauses in International Sovereign Bond Contracts—Whence the Opposition?*, 23 J. ECON. SURVS. 882, 898-906 (2009).

¹⁵ See generally Alfredo Barozzetti & Davide Dottori, *Collective Action Clauses: How Do They Affect Sovereign Bond Yields?*, 92 J. INT'L ECON. 286 (2014); Torbjörn Becker, Anthony Richards & Yunyong Thaicharoen, *Bond Restructuring and Moral Hazard: Are Collective Action Clauses Costly?*, 61 J. INT'L ECON. 127 (2003); Michael Bradley & Mitu Gulati, *Collective Action Clauses for the Eurozone*, 18 REV. FIN. 2045 (2014); Barry Eichengreen & Ashoka Mody, *Do Collective Action Clauses Raise Borrowing Costs?*, 114 ECON. J. 247 (2004); Christoph Grosse Steffen, Sebastian Grund & Julian Schumacher, *Collective Action Clauses in the Euro Area: A Law and Economic Analysis of the First Five Years*, 14 CAP. MKTS. L.J. 134 (2019); Christoph Große Steffen & Julian Schumacher, *Debt Restructuring in the Euro Area: How Can Sovereign Debt Be Restructured More Effectively?*, 4 DIW ECON. BULL. 19 (2014); Mattia Osvaldo Picarelli, Aitor Erce & Xu Jiang, *The Benefits of Reducing Holdout Risk: Evidence from the Euro CAC Experiment, 2013-2018*, 14 CAP. MKTS. L.J. 155 (2019); Dilip Ratha, Supriyo De & Sergio Kurlat, *Does Governing Law Affect Bond Spreads?*, 36 EMERGING MKTS. REV. 60 (2018); Anthony Richards & Mark Gugiatti, *Do Collective Action Clauses Influence Bond Yields? New Evidence from Emerging Markets*, 6 INT'L FIN. 415 (2003); Federico Weinschelbaum & José Wynne, *Renegotiation, Collective Action Clauses and Sovereign Debt Markets*, 67 J. INT'L ECON. 47 (2005); Kostas Tsatsaronis, *The Effect of Collective Action Clauses on Sovereign Bond Spreads*, BIS Q. REV., Nov. 1999, at 22, 22-23; Elena Carletti et al., *The Price of Law: The Case of the Eurozone Collective Action Clauses* (Feb. 16, 2019) (unpublished manuscript), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2817041 [<https://perma.cc/W2BL-AQDA>].

the collective action model against the bilateral model and other explanations for the absence of price effects. The Venezuelan natural experiment addresses the data infirmities that may explain why prior attempts to test the differences between individual and collective contract rights in the context of these modification terms have failed: most of the empirical papers compared bond covenants issued by different sovereigns, leading to questions such as whether the lack of observed differences in pricing was due to variations not captured in the empirical models across sovereigns rather than variations in CAC modification terms. Looking only at variations in contract terms in bonds issued by Venezuela allows us to control for any differences across sovereigns.

The data support the claim that differences in the terms of Venezuelan bonds that require collective action are not priced when the presence of activist creditors with the reputation, ability, and capacity to hold out and function as a collectivizing agent is unknown. As a backdrop, the research on sovereign restructurings shows that these holdout creditors (usually fewer than 5% of the bondholders) have been a consistent feature of sovereign restructurings over the past two decades and that the activist creditors who have successfully held out have, in many instances, received lucrative recoveries.¹⁶ But lacking knowledge of where these activist creditors are building a position, the market is unable to distinguish among bonds with legally relevant differences in collective rights. In contrast, we find that bond terms that either provide unilateral rights to creditors or for which collective rights are supported by the known presence of a collectivizing agent are priced by the market.

There are normative implications to the market's inability to price variations in the strength of creditors' rights of enforcement until the presence of collectivizing agents is known. While activist holdouts may decrease social welfare to the extent that they block value-increasing restructurings, holdouts also arguably increase social welfare to the extent that the threat of costly

¹⁶ See Julian Schumacher, Christoph Trebesch & Henrik Enderlein, *Sovereign Defaults in Court* 38-44 (European Cent. Bank, Working Paper No. 2135, 2018), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3134528 [<https://perma.cc/FL4G-M6TG>]. In Greece's 2012 restructuring, creditors who successfully held out were paid 100% of their claims, whereas the other creditors received haircuts of 60% or more. See *id.* at 47. And those who held out were able to do so in part because their CACs had higher vote thresholds than those who were unable to hold out. Similarly, in Ecuador in 2000 and Argentina in 2016, those who held out were paid close to 100% of their claims, while those who voluntarily restructured received haircuts of between 60% and 40%. See *id.* at 63-66 (representing tabular results of creditor suits in multiple countries). A rigorous comparison of the returns from holding out as opposed to voluntarily participating in a restructuring requires adjusting returns in the two scenarios for opportunity costs and the risk that the holdout's legal costs will not be awarded. As Juan Cruces and Tim Samples show in their analysis of Argentina's recent battle with holdout creditors, the basic observation in the text holds. Juan J. Cruces & Tim R. Samples, *Settling Sovereign Debt's "Trial of the Century,"* 31 EMORY INT'L L. REV. 5, 28-36 (2016); see also Kartik Anand & Prasanna Gai, *Pre-emptive Sovereign Debt Restructuring and Holdout Litigation,* 71 OXFORD ECON. PAPERS 364, 364-68 (2019) (modeling optimality of paying holdout creditors in full).

holdout litigation leads sovereigns to adopt budgetary policies *ex ante* that reduce the likelihood of future default. Absent the threat of holdouts, sovereigns who expect low cost restructuring *ex post* may succumb to moral hazard and undertake excessive spending. In order to reduce this moral-hazard risk, sovereigns may willingly accept stronger enforcement rights in return for lower upfront interest rates. However, where the market does not price variation in enforcement rights at the time sovereign bonds are issued, the sovereign will not have the incentive to adopt optimally stringent enforcement rights even if, in a world where such rights were priced, the sovereign would be motivated to do so.

The Article proceeds as follows: Part I expands on our collective action theory, discards several of the explanations for the failure of prior studies on CACs to find robust price effects, and discusses an alternative explanation for why the literature has failed to show price effects from different CAC terms. Part II sets out the empirical predictions about differences in the pricing of contract terms that are generated by the bilateral and collective action stories, respectively. In Part III, we report results. Part IV then reports the reactions of investment managers to the evidence of collective action impediments to efficient pricing and restructuring. That evidence raises normative questions about the role of contract arbitrageurs in this and other similar markets.¹⁷ In considering these questions, we conclude that firms that specialize in the close reading of contract provisions in order to enforce contract rights aggressively often are able to capture rents at the expense of more passive investors as well as the citizens of the defaulting sovereign state. This practice also impacts social welfare: the absence of a price mechanism undermines the sovereign's incentives to adopt enforcement rights at the time bonds are issued that optimally balance the *ex ante* benefits of reducing moral hazard against the *ex post* costs of rent seeking by holdouts.

I. A COLLECTIVE ACTION THEORY OF PRICING MULTILATERAL CONTRACT TERMS

We argue that the reported absence of price effects in CAC terms with different voting thresholds is due to the effects of impediments that prevent the bond market from being fully informed on terms that require collective action. While the value of an individual contract right to a bondholder is relatively easy to estimate, the value of a collective right whose exercise depends on the support of other creditors is more uncertain. And that is especially so if it is difficult to determine whether other creditors have the same incentives to join in the collective exercise of the contract right. Litigation is costly, both in terms of direct litigation costs and in terms of indirect reputational costs for the litigating parties. We posit that many institutional investors who purchase sovereign bonds (termed "passive creditors") will not view pursuing a sovereign in court as a viable option because of both the desire to maintain good relationships with sovereigns and the burden of justifying large front-end litigation costs to their investors. Rather, if no other option is available, passive creditors will simply

¹⁷ See Choi, Gulati & Scott, *supra* note 5, at 65.

accept the restructuring offer of the sovereign. Another option is available, however, if one or more of several institutional investors who have developed expertise as activist creditors are motivated to hold out from restructuring offers and aggressively litigate their position.¹⁸ Then the passive creditors may free ride on the activists' litigation efforts. In this case, the primary value of the CAC contract rights is the option to pursue a holdout strategy. But that option has value to a passive creditor (who, by definition, is reluctant to reject the restructuring offer of the sovereign) only if it can predict which bond offerings activists will choose.¹⁹

To illustrate, consider the market pricing of a bond with an 85% CAC as against a bond with a 75% CAC and ask whether a passive creditor²⁰ would value the former more than the latter. At first cut, because it is harder for the debtor to squeeze the creditors in the 85% bond than the 75% bond, one would expect passive creditors to feel more protected if they are in the 85% bond, where the greater risk of a holdout will more effectively constrain the sovereign's restructuring efforts. That is the basic reason why the market should rationally reflect the preference of most creditors for the 85% bond, thus causing the price of those bonds to rise relative to the less favorable 75% bond.

But for both the bond with an 85% CAC and the bond with a 75% CAC, the passive creditor must assess whether, in fact, a holdout is likely to materialize. To be sure, holding out is easier in theory with the 85% CAC since an activist creditor need only acquire 15% of the outstanding bonds to achieve a blocking position. But in practice the motivations of the other bondholders are critical to determining whether holding out is plausible. The passive creditor must predict whether there are activist creditors among the bondholders for that bond offering who possess the litigation expertise and capital resources to sustain the front-

¹⁸ For discussion of the role of activist creditors in previous sovereign bond restructuring efforts, see Elaine Moore, *Sovereign Debt Plan Takes On Holdouts*, FIN. TIMES (Asia), Sept. 3, 2014, at 22, <https://www.ft.com/content/05718380-2df4-11e4-b330-00144feabdc0>; Julian Schumacher, Christoph Trebesch & Henrik Enderlein, *The Legal Cost of Default: How Creditor Lawsuits Are Reshaping Sovereign Debt Markets*, VOX: CEPR POL'Y PORTAL (July 16, 2018), <https://voxeu.org/article/how-creditor-lawsuits-are-reshaping-sovereign-debt-markets> [<https://perma.cc/T7BS-BNCC?type=image>].

¹⁹ A threshold question is whether one should expect contract provisions to be priced at all in a sovereign context given that sovereigns generally have legal immunities that make them difficult to sue. And there was a time when litigation against sovereigns was nearly impossible because of the immunities that sovereign debtors enjoyed. This changed in the mid-1970s when the leading jurisdictions where sovereign bonds are issued—the United States and the United Kingdom—passed sovereign immunity laws that allowed sovereigns acting in a commercial capacity to be sued in the same fashion as other commercial actors. See Julian Schumacher, Christoph Trebesch & Henrik Enderlein, *What Explains Sovereign Debt Litigation?*, 58 J.L. & ECON. 585, 590-92 (2015); Schumacher, Trebesch & Enderlein, *supra* note 16, at 4.

²⁰ By “passive creditor” we mean bondholders who have neither the inclination (owing to their status as repeat players in the market) nor the capital resources to pursue the holdout strategy of declining a restructuring offer and aggressively pursuing the sovereign through litigation and other extralegal collection efforts.

end costs necessary to resist successfully the sovereign's efforts to restructure. Ordinarily, one might think that the CAC itself would provide the basis for such a prediction. Passive creditors could examine the contract terms in different bonds and predict that the bonds with the strongest holdout rights would be those that the activists would target. From this perspective, the bond with the 85% CAC would be a better bet than the bond with the 75% CAC.

The fly in the buttermilk is that the strategy that generates the highest expected payoff for the activist creditor depends on it remaining hidden from the market until after the restructuring deal is done. Activist creditors are able to extract a larger return from holding out if they wait until the debtor first negotiates a significant haircut with the other creditors and only then litigate against both the debtor and the holders of the restructured bonds until a settlement is achieved. Put differently, holding out works best if the population of holdouts is relatively small so that it is in the financial interest of the debtor to pay the holdouts in full in order to settle with the other creditors at the restructured rate. This means that a holdout creditor has an incentive to hide its plans, including which bonds it plans to target, until after the other creditors have settled their claims with the sovereign. If the passive creditors believe that an activist creditor will purchase a blocking position in the 85% bond because it requires a smaller investment, the activist may choose instead to invest in the 75% bond in order to obtain a larger net recovery. And that hidden information likely will prevent the market price from reflecting the true value of the bond that will be selected for litigation by the holdout creditor. In short, because the activists are hidden, there should be little differentiation in bond prices notwithstanding different CAC terms until the holdout creditors are revealed—which typically does not occur until after the restructuring deal is complete and there is no longer any trading on the market.

A. *Competing Explanations: Econometric Issues and Confounding Effects*

There are several competing explanations for why the CAC pricing studies find little in the way of price effects. These explanations share a common characteristic that helps us in our study: they are inapplicable in the case of Venezuela's debt crisis.

One such explanation derives from the limitations of the data on which prior studies were based. The existing sovereign bond empirical literature focuses on terms for bond covenants from varying bonds across different sovereigns. Bonds issued in different legal settings tend to contain numerous differences in their contract terms in addition to having different rules and norms of interpretation for those terms. Given the number and the difficulty of controlling for these differences in contract terms, let alone country characteristics, these cross-sectional studies are not able to control for all of the endogenous variables.²¹ Without proper controls for sovereign- and bond-level differences, the cross-sectional studies' findings on the relationship (or lack thereof) between CAC bond terms and market prices are suspect.

²¹ See Carletti et al., *supra* note 15, at 3 (explaining issue with cross-country—as opposed to single-country—analyses of CAC pricing effects).

A related explanation for the lack of price effects when using cross-sectional data across different sovereigns has to do with the possibility of confounding effects. The argument here is that when a sovereign issues new bonds with different contract terms (for example, switching from a 100% modification requirement to a 75% threshold), this change produces offsetting price effects. On the one hand, because it is easier to restructure a 75% bond than a 100% bond, the change may signal to the market an increased likelihood that the particular sovereign will default (the classic debtor moral-hazard problem). On the other hand, the sovereign potentially has earned savings in the future by including a CAC to ensure that any future restructuring will face fewer threats from holdout creditors.²² If there are indeed such savings from reducing future restructuring costs, investors should increase the price they are willing to pay for all of the particular sovereign's bonds relative to the bonds of other sovereigns.²³ With potential price impacts that move in opposite directions when looking at cross-sectional data, the overall direction of the price change when comparing different sovereigns is ambiguous. In short, the argument is that when comparing the bonds of different sovereigns, the CAC's effects are canceling each other out.²⁴

The third explanation for the puzzling results concerns the presence of bailouts. If international institutions—such as the International Monetary Fund (“IMF”)—that are concerned about contagion are motivated to bail out countries that are in crisis, then the contract terms become irrelevant.²⁵ One possible explanation, therefore, for the lack of results in the previous CAC studies is that scholars have not sufficiently controlled for bailout likelihood.

The solution to the deficiencies in the existing studies is to examine bond contracts with different CAC terms, issued by the same issuer who is in the bad graces of the IMF, during crisis times, under the same law, and identical in all other respects except for the CAC threshold. But until Venezuela's current crisis, data meeting these criteria were not available.

²² See Bradley & Gulati, *supra* note 15, at 2045-46 (discussing effectiveness of CACs at reducing impact of holdout creditors); Richards & Gugiatti, *supra* note 15, at 418-23. In theory, there might also be positive behavioral effects on both the sovereign and creditors if the presence of CACs reduces the likelihood of future bailouts by the “Official Sector.” See Bradley & Gulati, *supra* note 15, at 2047. Absent the moral-hazard effects of future bailouts, sovereigns then will be more careful in their borrowing decisions as will creditors in their lending decisions.

²³ The most likely net impact of CACs or similar schemes is to increase the sovereign's borrowing costs: the market will observe the change that makes it easier for a sovereign to restructure as a signal that the sovereign will be more eager to restructure. See Andrei Shleifer, *Will the Sovereign Debt Market Survive?*, 93 AM. ECON. REV. 85, 85 (2003).

²⁴ See Anna Gelpern & Mitu Gulati, *Public Symbol in Private Contract: A Case Study*, 84 WASH. U. L. REV. 1627, 1648-707 (2006) (reporting interviews with policymakers on possible reasons for lack of pricing effects).

²⁵ Weinschelbaum & Wynne, *supra* note 15, at 47-50.

B. *Low Default Risk and Agency Costs in the Initial Market for Sovereign Bonds*

Almost all of the prior CAC studies examine bond prices prior to the time when the sovereigns were experiencing repayment difficulties and approaching default. During the time when the probability of default is low, it is difficult to discern the price impact of any particular contract term whose impact will only be relevant in the event of default.²⁶ Even if there is a pricing difference between bonds with varying contract terms, the remote risk of default will obscure such pricing differences.

Compounding the difficulty in observing pricing differences when the probability of default is low are the agency costs of actors that are responsible for the initial pricing of sovereign bonds. These agency costs may obscure pricing differences particularly at the time new sovereign bonds are issued.

The private interests of the lawyers, managers, and initial investors who dominate the sovereign bond market are to process bond issues at the least cost at the time of issuance and as quickly as possible, notwithstanding expected future default costs.²⁷ This single-minded focus on front-end contracting costs is simply a reflection of the fact that the “legal terms” for which the lawyers are responsible and which form the standard boilerplate are seen as immaterial in the initial pricing of the bonds.²⁸ Thus, any change in the ability of an investor to recover in the event of a default owing to differences in the legal terms of the contract is ignored by both the debt managers (who act as agents for the sovereign) and the investment bank (that serves as agent for the investors). The debt managers for the sovereigns do not care about the legal terms at the time of issuance; they do not regard the legal terms as relevant to the initial pricing of their bonds because they know that the investment banks charged with marketing the bonds only care about having the standard form.²⁹

But why don't the investors who buy the bonds care about their expected recovery in the event of default? One hypothesis is that it is too costly to try and match a given sovereign with the optimal CAC. Some sovereigns may present a measurable default risk while others may not, and the information to make particularized ex ante calculations is costly to acquire. Another consideration is the fact that this is a liquid market. Because bonds can easily be resold on the secondary market and many institutional investors are required by their investment standards to sell their bonds when the sovereigns are near default, these initial bondholders are never participants in the holdup game. Even so, one might expect there to be arbitrage in the primary market where informed

²⁶ IMF THIRD REPORT, *supra* note 14, at 6.

²⁷ See GULATI & SCOTT, *supra* note 6, at 143.

²⁸ See Anna Gelpern, Mitu Gulati & Jeromin Zettelmeyer, *If Boilerplate Could Talk: The Work of Standard Terms in Sovereign Bond Contracts*, 44 LAW & SOC. INQUIRY 617, 644 (2019).

²⁹ See *id.* at 634 (reporting on interviews with market participants); Mark Gugliatti & Anthony Richards, *The Use of Collective Action Clauses in New York Law Bonds of Sovereign Borrowers*, 35 GEO. J. INT'L L. 815, 816-36 (2004) (reporting on interviews with market participants, along with quantitative evidence).

investors buy bonds selectively based on their reading of the legal terms. Even if these arbitrageurs do not plan to be there when the sovereign defaults, they know that others will pay a higher price for the bonds with better contract terms in that near-default scenario. But perhaps not. The tradeoff between the moral-hazard risk of inviting a future restructuring with weak contract terms and the increase in returns to creditors from a successful restructuring owing to the same terms is difficult to resolve *ex ante*. So long as the initial investors only bear a portion of any price distortion from purchasing bonds with contract terms that make the bond less valuable upon default, it may still be rational for their agents to buy and sell bonds without discriminating among legal terms that influence the costs of default.

But the corollary of this proposition is that arbitrage should occur once the risk of default becomes salient to the market. This agency-cost story thus predicts, consistent with the bilateral story, that there will be price effects from different CAC terms but that those effects will not appear until the sovereign debtor nears default, the bonds fall into the junk category, and conservative investors such as pension funds exit.³⁰ We focus in this study on the pricing of Venezuelan bonds as Venezuela approaches default, exactly when the agency-cost story predicts that pricing effects for bonds with different contract terms will appear with increasing clarity.

II. TESTING THE BILATERAL AND COLLECTIVE ACTION MODELS

The bilateral model predicts that bonds with different contract enforcement terms will be priced differently in the market. We expect to see those differences most clearly as the sovereign nears default. In contrast, the collective action model predicts that, for contract terms that require an activist creditor to lead a holdout strategy, we should not see pricing effects even as the debtor gets closer to default. This is true so long as the market lacks information on which bonds the activist, who is acting as a collectivizing agent, has targeted. It is only when such information leaks into the market that pricing differences should appear. Finally, price effects should appear much earlier for contract terms that permit individual parties to assert default rights unilaterally.

For our study, we use bonds issued by a single sovereign, Venezuela, that are governed by the same choice-of-law and forum provisions (thereby controlling for unobservable variations across sovereigns and bonds governed by different laws and jurisdictions). We also focus on the pricing of the bonds as Venezuela nears and then enters default, a period when the contract terms should be of heightened salience to the market. Finally, we looked to various industry sources for information on who the creditors in these bonds were and, specifically, whether a bond had creditors with the ability and inclination to effectively litigate their contract rights.

As of this writing, Venezuela has over \$60 billion in bond debt outstanding, approximately \$35 billion of which was issued directly by the sovereign

³⁰ Gelpert & Gulati, *supra* note 24, at 1648-707 (reporting on interviews with issuers, underwriters, investors, and lawyers on both sides of early CAC deals).

(“Republic” bonds) and \$25 billion of which was issued by Venezuela’s state-owned oil company, *Petróleos de Venezuela, S.A.* (“PDVSA”), which produces roughly 95% of the state’s foreign currency revenues.³¹ Helpfully, these various bonds (Republic and PDVSA) have differences in key contract terms despite both being issued under the jurisdiction of New York. In particular, the currently outstanding Venezuelan bonds have been issued over a period of more than twenty years, during which the standard form for sovereign bonds in the broader market has changed significantly. Of greatest interest to us, the voting threshold on modification clauses in the Republic’s CAC bonds changed from 100% (in the mid-1990s) to 85% (in 2003-2004) to 75% (since 2005). This same feature applies to all sovereigns that have issued bonds consistently during this time period, but Venezuela is the only one that both has issued bonds consistently during the two-decade period *and* has gone into default.

The variations in the Republic and PDVSA bonds yield two sets of tests for comparing the market pricing of Venezuelan bonds that carry distinctly different legal risks. We supplement these tests with an additional test that examines the market effect of a rumor that activist creditors were targeting one particular bond that materialized at the end of our data period. We are able to run the foregoing comparisons during a period in which the probability of default has been high and the bond rating low (CCC+ and below), precisely the time period when we would expect the market to care about the ability to restructure Venezuelan bonds and to price legal terms that limit restructuring accordingly. Using six-month Credit Default Swap (“CDS”) prices, the probability of Venezuela’s default has been in the range of 70%-95% during the period of September 16, 2014 (when Venezuelan bonds dropped into junk status), to December 15, 2017.

The primary focus of our inquiry is the impact of different voting thresholds on the pricing of bonds. As noted, this question has generated a significant amount of academic and policy interest. It is worth noting as well that the market has evinced considerable interest in the differences in voting thresholds in Venezuelan bonds. During 2017 and 2018, there were multiple research reports issued by Bank of America, Citigroup, Deutsche Bank, Morgan Stanley, Nomura, and Torino Capital updating clients on the situation in Venezuela.³² Each of these reports included a discussion of relevant legal issues, of which the voting thresholds were the most discussed.³³

The first set of tests looks at differences in Venezuelan Republic bond terms requiring collective action. These tests compare (1) UACs versus CACs (Prediction One); (2) CACs with differing vote thresholds (85% versus 75%) (Prediction Two); and (3) the relative pricing of UACs and CACs before and after a shock due to the Second Circuit’s opinion in *Marblegate Asset*

³¹ See Adam Lerrick, *Venezuela’s Debt: Untying the PDVSA Knot*, 13 CAP. MKTS. L.J. 131, 131-33 (2018).

³² See Andrea E. Kropp, W. Mark C. Weidemaier & Mitu Gulati, *Sovereign Bond Contracts: Flaws in the Public Data?*, 4 J. FIN. REG. 190 app. C at 207-08 (2018).

³³ See *id.*

Management, LLC v. Education Management Finance Corp.,³⁴ which increased the availability of exit consents to modify payment terms for bonds with UACs (Prediction Three).³⁵ For these tests, we find no price effects for what, in theory, should be legally significant disparities in the bondholders' rights upon default. Over this period, we also find no information in any of the various industry sources on the presence of activist creditors in any particular bonds who might be expected to take an effective holdout position. The lack of pricing is consistent with the hidden holdouts story that pricing of collective action terms depends on information in the market about the specific presence of activists in a particular bond.

The second set of tests looks at the pricing for PDVSA bond terms that either provide a unilateral enforcement right or for which there is a known collectivizing agent to assist in enforcing collective rights. The two PDVSA bonds where we expect pricing to occur are: (1) a bond with collateral protection in the form of stock in Citgo, a US subsidiary of PDVSA (the "Collateral Bond") (Prediction Four); and (2) a bond where accusations of legal infirmity surrounding its issuance increased the risk of nonpayment (known in the market as the "Hunger Bond") (Prediction Five).³⁶ In the first of these bonds, the Collateral Bond, the enforcement of the right to the collateral requires that at least 25% of the creditors (in principal amount) ask the trustee to act.³⁷ Despite the need for collective action, there was a well-known creditor holding a sufficient percentage of the Collateral Bonds who was able to enforce the right. Because this well-known creditor had announced a willingness to enforce its rights against the collateral, we expect the market to have priced in the value to the other bondholders of the right to collateral. In the second case of the Hunger Bond, the rights in question would be exercised by the debtor, who would face no collective action problem. In our tests of whether there is pricing of contract terms that either provide a unilateral enforcement right or for which there is a known collectivizing agent to assist in enforcing collective rights, we find evidence of price effects unlike those of collective action terms where there is no known collectivizing agent.

In addition to these two sets of comparisons of the pricing of contract terms, we examine whether contract terms that otherwise are not priced become priced for a specific bond once there are credible rumors of activist creditors targeting the bond for purchase (referred to as the "Rumor" bond). If the lack of

³⁴ 846 F.3d 1 (2d Cir. 2017).

³⁵ *Id.* at 17.

³⁶ The bond was issued at an artificially high principal value and low yield, as compared to what the market rates would have predicted. That artificiality puts the creditors holding these bonds at risk of being accused of having engineered something akin to a fraudulent transfer. These accusations will likely result in future Venezuelan governments refusing to give this Hunger Bond the same recovery rate as other comparable bonds. See Alistair Gray & Gideon Long, *Goldman's Venezuela Bond Buy Stirs Anger*, FIN. TIMES (Asia), May 31, 2017, at 2, <https://www.ft.com/content/c2f0fc3c-466b-11e7-8519-9f94ee97d996>.

³⁷ See *Petróleos de Venezuela, S.A.*, Prospectus: \$6.15 Billion, 8.5% Coupon, Due Oct 27, 2020, at 152 (Sept. 16, 2016) [hereinafter PDVSA Prospectus] (on file with authors).

information on hidden holdouts drives the lack of pricing for collective action-related terms, then we expect that the market will price legal differences in collective action provisions only when the information reaches the market that an activist creditor is likely to operationalize those provisions for that specific bond.

Even though the PDVSA and Republic bonds are backed by essentially the same credit (i.e., Venezuela's oil assets), they use different contract terms. The Republic's bonds are sovereign bonds under a Fiscal Agency structure, carrying standard sovereign bond contract terms and receiving the standard sovereign-immunity protections of a sovereign contract. In contrast, the PDVSA bonds are under a Trust Structure, and PDVSA—while 100% state-owned—is a corporation that, in theory, could be subject to a bankruptcy proceeding (from which the sovereign is immune). Hence, we separate both types of bonds in analyzing whether the market differentially prices contract terms in the bonds of the Republic and PDVSA.³⁸

A. *Republic Bonds*

1. Prediction One: Unanimity v. Supermajority (UAC v. CAC)

Here we examine the price impact of a sovereign debt contract requiring a 100% or unanimous vote of the creditors for the modification of “payment” terms (a UAC) versus the price impact of a sovereign debt contract with a lower threshold (a CAC with either an 85% or 75% vote). Given that “payment” terms include principal and interest amounts and times of payment along with currency, a restriction on changing these terms without unanimous consent from the bondholders predictably should make these bonds more difficult to restructure and correspondingly easier for a holdout to succeed in blocking that attempt by the sovereign. We focus our test of Prediction One on the time period when the sovereign, Venezuela, approaches default.

Even though securing the necessary consent to modify 100% bonds is more difficult to achieve, these bonds do not provide creditors with effective unilateral rights. To be sure, the 100% vote bond gives every bondholder a veto right (in theory an individual right), thus this bond should be more valuable than, for example, a 75% vote bond. A passive creditor need not calculate whether this is the bond over which a sufficient number of other activists are willing to hold out and litigate against the sovereign. It is likely, however, that many creditors are otherwise constrained from exercising their litigation rights. Typical sovereign bonds require a 25% vote of the creditors for acceleration in the event of a default (and acceleration can usually be reversed by a 50% vote of the creditors). Absent acceleration, a creditor is left with litigating only over unpaid coupon payments, which is not likely to be a cost-effective strategy for most creditors. The holdout strategy in the sovereign context is most effective for those activist creditors—

³⁸ For a discussion of the differences between Trust Indentures and Fiscal Agency agreements, see Lee C. Buchheit, *Trustees Versus Fiscal Agents for Sovereign Bonds*, 13 *CAP. Mkts.* L.J. 410, 412 (2018).

the contract arbitrageurs—who can threaten not only to hold out but also to disrupt through litigation any subsequent settlement made with the other creditors.³⁹ Hence, if a credible litigation threat requires the support of other activist creditors, a bond that requires a 100% vote to change payment terms in effect requires the exercise of collective rights. And of course, the same conclusion holds for the bond that requires a 75% vote to change payment terms.

Our dataset contains two UAC Venezuelan Republic bonds with 100% vote requirements for changes to key bond terms. The other fourteen Republic bonds have CACs and require either 75% (twelve bonds) or 85% (two bonds) of the creditors in the principal amount for a debt write-down to take effect. Other things equal, under standard economic assumptions about a bilateral debtor-creditor relationship, the 100% bonds should be more valuable in a near-default scenario than the 75% or the 85% bonds, and, reflecting this greater value, the yield of the 100% Republic bonds should be *lower* as compared to the yields of the 75% and 85% Republic bonds.⁴⁰

Along these lines, a Citigroup research analyst stated in 2019:

In the context of a potential restructuring of Venezuelan debt, we attempt to utilize the natural difference in collective action clause between the Venezuela 9 ¼ 2027 bond and the Venezuela 9 ¼ 2028 bond to determine the market value of the CAC and its effect on the pricing of the debt instruments.

In the event of a default and debt restructuring, the holder of a bond with a CAC has more to lose than a holder of a bond without a CAC (or a bond with a 100% CAC). This is because CAC bonds may be restructured without unanimous consent; rather, a supermajority – usually 75% – must approve the proposed changes. Once that threshold is met, the restructuring is binding for all bondholders, not just those who have approved it. Those who disapprove of the restructuring may not litigate if the voting threshold is met, since they agreed to collective action at the time of purchase.

For bonds without a CAC – or a CAC with a 100% voting threshold – if a restructuring occurs without unanimous consent, the “hold-outs,” or those not willing to participate in the restructuring, retain the right to hold the old bonds and take legal action against the issuer. Because litigation likely

³⁹ See Schumacher, Trebesch & Enderlein, *supra* note 16, at 8 (“In the official sector, holdout litigation is now seen as a serious obstacle for sovereign debt renegotiations and as a risk for the functioning of international payment systems.” (citations omitted)).

⁴⁰ One factor that might alter the calculation as to which bonds are easier to hold out on vis-à-vis a restructuring offer is the size of the debt stock that has the particular legal characteristic. If, for example, the majority of the Venezuelan debt stock was made up of 100% vote bonds, the restructuring team would be forced to focus its attention on developing a strategy to force holdouts on those bonds to agree to a deal. But here the two 100% vote bonds are but a small fraction of the overall debt stock of Venezuela’s bond debt (less than 5% of the overall bond debt).

leads to a higher recovery value than a debt restructuring, the bond described above is more valuable to the owner.⁴¹

2. Prediction Two: 85% v. 75%

Similar to Prediction One, the 85% bond should be more attractive to the market than the 75% bond. The reasoning is the same: the 15% vote required to block the operation of a CAC is easier for holdout creditors to achieve than a 25% threshold. In the near-default scenario, the yield on the 85% Republic bonds should be *lower* than the yield on the 75% Republic bonds. We focus our test of Prediction Two on the time period when the sovereign, Venezuela, approaches default.

To quote a veteran of the sovereign debt markets at the Paris Club meetings of June 30, 2016, where Venezuelan debt and strategies to deter holdout creditors were the topic:

The two 85% bonds are among the ones to watch. They are not as easy to hold out on as the 100% bonds. But they are easier to get a blocking position on than many of the 75% bonds, especially the one \$500 million bond that was issued in 2004 . . . that was a small issue. Everyone is focuse[d] on the 2027 bond—without CACs—but I suspect that real (smart?) holdouts have their eyes focused on the 85% bond too.⁴²

In this Article, our tests of Predictions One and Two focus in particular on the period as Venezuela neared default through December 2017. This time period is critical because the voting threshold to change payment and payment-related terms becomes important to investors as a sovereign nears default.⁴³

3. Prediction Three: Exit Consents and the Second Circuit's *Marblegate* Opinion

Prior to the early 2004 emergence in New York law bonds of CACs with 75% voting requirements for changing payment terms, almost all sovereign bonds issued in New York had 100% vote requirements for modifying their payment terms. The Exit Consent technique was the primary solution to solving the holdout problem with these 100% bonds. In these transactions, creditors accepting a restructuring offer simultaneously agree to modify the nonfinancial terms of the original bonds, making those bonds less valuable and thus

⁴¹ E-mail from Analyst, Citigroup, to Mitu Gulati, Professor of Law, Duke Univ. (Feb. 19, 2019, 2:29 PM) (on file with authors).

⁴² Mitu Gulati, Professor of Law, Duke Univ., Notes on Paris Club Meeting (June 30, 2016) (on file with authors).

⁴³ A prior article tested the pricing of different voting thresholds using Venezuelan sovereign-bond data in the 2014-2016 period—that is, prior to the defaults on the various Venezuelan bonds that began in November 2017. See Elena Carletti et al., *Pricing Contract Terms in a Crisis: Venezuelan Bonds in 2016*, 11 CAP. MKTS. L.J. 540, 555 (2016).

encouraging potential holdouts to accept the settlement offer.⁴⁴ As discussed, Venezuela has two of these pre-2004 bonds with 100% vote requirements outstanding. Restructuring them in the presence of potential holdouts, therefore, requires the use of the Exit Consent technique. Our third empirical test of pricing effects examines how the prices of these two Venezuelan bonds were impacted by a New York Court of Appeals decision that significantly increased the viability of the Exit Consent technique.

This Exit Consent technique was used successfully in a number of sovereign restructurings between 2000 and 2006.⁴⁵ But in the years following this period, three trial court decisions in the New York courts (and one in England) cast doubt on the technique's viability.⁴⁶ Based on the results of these cases, the two 100%-vote Venezuelan sovereign bonds were essentially restructuring-proof.

On January 17, 2017, this state of affairs changed when the Second Circuit reversed the position taken by the three trial courts.⁴⁷ This was a significant legal change, and its importance supports the prediction that the bonds for which the Exit Consent technique could be used (the two Venezuela 100% vote bonds) would experience a relative drop in value as compared to the bonds for which the Exit Consent technique was neither necessary nor viable (such as the two 85% bonds and all the 75% bonds).

Prediction Three, therefore, is that the yields for the 100% Republic bonds should *rise* relative to the 85% and 75% bonds at the point at which the *Marblegate* decision from the Second Circuit was released.⁴⁸

⁴⁴ For descriptions of this technique, see Lee C. Buchheit & G. Mitu Gulati, *Exit Consents in Sovereign Bond Exchanges*, 48 UCLA L. REV. 59, 65-66 (2000); Lee C. Buchheit, *How Ecuador Escaped the Brady Bond Trap*, INT'L FIN. L. REV., Dec. 2000, at 17, 18 (summarizing process of modifying nonfinancial terms in order to encourage holdouts to accept settlement).

⁴⁵ See Ran Bi, Marcos Chamon & Jeromin Zettelmeyer, *The Problem that Wasn't: Coordination Failures in Sovereign Debt Restructurings*, 64 IMF ECON. REV. 471, 477 (2016) (listing sovereign restructurings in Dominican Republic, Ecuador, and Uruguay as successful examples of Exit Consent technique).

⁴⁶ William W. Bratton & Adam J. Levitin, *The New Bond Workouts*, 166 U. PA. L. REV. 1597, 1601, 1650 (2018); Marcel Kahan, *The Scope of Section 316(b) After Marblegate*, 13 CAP. MKTS. L.J. 136, 137-41 (2018).

⁴⁷ *Marblegate Asset Mgmt., LLC v. Educ. Mgmt. Fin. Corp.*, 846 F.3d 1, 17 (2d Cir. 2017).

⁴⁸ While the Exit Consent strategy provides a possible pathway for restructuring the sovereign's debt, for two reasons the strategy is a second-best solution to clauses (such as CACs) that directly allow for changes to payment terms: First, the Exit Consent mechanism cannot force holdouts to take lower payment amounts. And second, if used too aggressively (which is when it is most effective) the strategy is vulnerable to legal challenge. See generally Isabelle Sawhney, *The Hidden Law Guiding the Sovereign's Use of Exit Consents* (Apr. 1, 2019) (unpublished manuscript), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3363957 [<https://perma.cc/L944-9RKK>]. Because Exit Consents are a second-best solution, we conjecture that the possibility of Exit Consents, while diluting the advantage of a 100% bond, does not change the relative advantage for holdouts of a 100% bond compared with those of bonds with CACs.

B. *PDVSA Bonds*

Predictions Four and Five concern the bonds of PDVSA, Venezuela's state-owned oil company. Given that Venezuela receives over 90% of its foreign revenues from the oil industry, PDVSA risk is essentially the sovereign risk.⁴⁹ What is significant for our purposes is that two of the PDVSA bonds have legal features that create unilateral default rights in the sense that they accrue directly to the individual creditor independent of whether a subset of other creditors chooses to enforce them. Below we examine whether the market prices those legal features.

1. Prediction Four: The Collateral Bond

PDVSA placed its last bond issue in October 2016 shortly before the market for Venezuelan bonds collapsed. Investors demanded and received collateral as additional protection for buying this bond. Specifically, the bond is backed by a 51% stake in the shares of Citgo, a Delaware corporation that is a wholly owned subsidiary of PDVSA and that operates a significant portion of PDVSA's U.S. refineries.⁵⁰ Access to collateral should decrease the default risk of holders of the Collateral Bond, reducing the yield of the Collateral Bond relative to other PDVSA bonds.

At first cut, in terms of its contract terms alone, this collateral feature seems to be subject to the need for collective action. That is because the enforcement of the right to collateral cannot occur unless 25% of the creditors (in principal amount) ask the trustee to act.⁵¹ However, from the time the Collateral Bond was issued there was one large bondholder, Ashmore Capital, with the size and willingness to be able to enforce the right to collateral. And because this was a bondholder with public disclosure requirements, the size of its holdings was visible to all on Bloomberg screens.⁵² Hence, because the collective action problem with enforcing the rights in question was effectively solved, the right to collateral was priced by the market all through the period of our study.

The holders of the bond with rights to collateral can exercise those rights when the debtor defaults; the trustee, upon instruction, will conduct a sale of the

⁴⁹ The Third Circuit recently ruled, in a case involving a holder of an arbitration claim against the Republic, that the holder could reach PDVSA assets because PDVSA is, as a legal matter, the alter ego of Venezuela. See *Crystallex Int'l Corp. v. Bolivarian Republic of Venez.*, 932 F.3d 126, 151-52 (3d Cir. 2019).

⁵⁰ See Brian Ellsworth, *Venezuela's PDVSA Uses 49.9 Pct Citgo Stake as Loan Collateral*, REUTERS (Dec. 23, 2016, 4:51 PM), <https://www.reuters.com/article/venezuela-pdvsa-idUSL1N1E11FO> [<https://perma.cc/CZ38-E8JU>].

⁵¹ See PDVSA Prospectus, *supra* note 37.

⁵² Thus, at the time, it was widely known to the market that Ashmore Capital, an investment firm, held a stake in the Collateral Bond that constituted 51% of the principal amount of the bond. See Ben Bartenstein, *Ashmore's Massive Bet on PDVSA's Bond Roiled by Default Concern*, BLOOMBERG (Aug. 8, 2019, 10:32 AM), <https://www.bloomberg.com/news/articles/2019-08-08/ashmore-s-massive-bet-on-pdvsa-bond-roiled-by-default-concern>.

collateral and share the proceeds equally among the claimants. Consequently, having access to collateral should make the Collateral Bond more valuable than unsecured PDVSA bonds so long as Citgo has a significant going-concern value. Informal investor reports suggest that Citgo's value is between \$6 billion and \$10 billion, providing an ample cushion to ensure that all the bondholders of the \$3 billion Collateral Bond are paid in full.⁵³ As one such report from the Deutsche Bank stated in July 2017, "Given our increasingly cautious stance [due to the worsening of the crisis in Venezuela], we prefer these bonds on the curve: PDVSA 20s (due to partial collateral), . . . [and other Venezuelan bonds] (due to their low prices)."⁵⁴

2. Prediction Five: The Hunger Bond

The second PDVSA bond with a unique legal feature is a PDVSA bond that suffers from a potential process illegality—the "Hunger Bond." In May 2017, Goldman Sachs Asset Management ("GSAM") purchased roughly \$2.8 billion of a PDVSA bond that had not been trading despite having purportedly been issued some years prior in 2014. GSAM purchased the bonds at a deep discount (it paid \$865 million for bonds with a face value of \$2.8 billion), significantly greater than the discount on other PDVSA bonds on the market. Fueled by the sudden \$750-million spike in Venezuela's capital reserves around the date of the sale to GSAM, observers speculated that GSAM had, in effect, purchased the particular bonds directly from the Republic in a primary market transaction that was disguised to look like a secondary market transaction with an artificially low coupon (6% when the market yield at the time was in the 35% range). The bonds were labeled "the Hunger Bond" thanks to Harvard economist Ricardo Hausmann who, in an op-ed, castigated investors for lending to a regime that was paying coupons to foreign investors at the same time that people were starving.⁵⁵

If the rumors in the financial press were true, holders of the Hunger Bond would potentially be vulnerable to a legal challenge either from other creditors or from a future Venezuelan government on the ground that a portion of the issuance was fake principal (akin to a fraudulent transfer).⁵⁶ To quote the title of a report to investors from NERA Economic Consulting in August 2017:

⁵³ See Julie Wernau, *Dozens of Creditors Crowd Around Citgo*, WALL STREET J., May 15, 2017, at B8.

⁵⁴ Memorandum, Deutsche Bank, Venezuela: Preparing for the End Game 9 (July 14, 2017) (on file with authors).

⁵⁵ Ricardo Hausmann, Opinion, *The Hunger Bonds*, PROJECT SYNDICATE (May 26, 2017), <https://www.project-syndicate.org/commentary/maduro-venezuela-hunger-bonds-by-ricardo-hausmann-2017-05> (suggesting that investors should withdraw funds from emerging market bonds, which contribute to "human misery"); see also Gray & Long, *supra* note 36 (discussing "Hunger Bonds").

⁵⁶ See Mitu Gulati & Ugo Panizza, *The Hausmann-Gorky Effect*, J. BUS. ETHICS (forthcoming 2020) (manuscript at 10), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3141389 [<https://perma.cc/5WZN-TPGM>].

“PDVSA’s Peculiar Oct. ’22 Bond May Carry Elevated Risks.”⁵⁷ We predict, therefore, that the Hunger Bond should be priced in the market at a higher yield compared with other PDVSA bonds due to this possible legal vulnerability.

Similar to the Collateral Bond, the infirmity imposed on holders of the Hunger Bond does not require any significant collective action on the part of the bondholders to recover. Instead, the risk of a legal challenge is one that all the bondholders face regardless of collective action or the presence of types of investors more willing to engage in collective action.

C. *The Rumor Bonds*

A key assumption of the collective action story we advance is the inability of market participants to predict in what bonds activist creditors will take positions and facilitate the enforcement of contract rights against the sovereign. The corollary prediction is that there will be a price effect when the market acquires credible information, through rumors or other sources, on positions taken by activist creditors. To test this possibility, we searched various news outlets that regularly report news on Venezuelan bonds—blogs, sell-side research reports, oil industry analyses, and articles in the financial press—for rumored buying of particular bonds by activist creditors. We found two instances of rumors of activist creditors having purchased particular bonds. The first rumor was from January 2016, when there was an expectation that Venezuela was about to default and that an activist firm had targeted the 2027 (100% vote) bond. Venezuela, however, did not default at that time, and the rumor dissipated by mid-2016. The second rumor appeared in January 2018, suggesting that a group of distressed-debt hedge funds had joined forces to target a particular Venezuelan Republic bond (the 85% vote bond due in 2034). This second rumor, as we detail later, did not dissipate, and ultimately the specific identities of the hedge firms involved were revealed.

The prediction from the collective action model concerning this rumor is straightforward. We predict that in comparison to other bonds there will be a spike in the price of the bond that was the subject of the rumors.⁵⁸

III. EMPIRICAL RESULTS

We identified two sets of bonds for our tests: Venezuelan Republic bonds and PDVSA bonds. We obtained daily pricing data on the two sets of bonds from Datastream from January 1, 2012, to December 15, 2017. For data on the contract terms themselves, we hand coded the sales documents from the Perfect Information database and supplemented those with the underlying Fiscal Agency Agreements (for the Republic) and Trust Indentures (for PDVSA).

⁵⁷ Timothy McKenna & Raphael Starr, *PDVSA’s Peculiar Oct. ’22 Bond May Carry Elevated Risks*, NERA ECON. CONSULTING (Sept. 2, 2017), <http://www.nera.com/publications/archive/2017/pdvsas-peculiar-oct-22-bond-may-carry-elevated-risks.html> [<https://perma.cc/55Z4-RP7U>].

⁵⁸ The fact that there were no other events around this period of time that could have conceivably impacted the price of the rumor bond but not its comparators helps us isolate the effect of the rumors on the bond prices.

A. Republic Bonds

1. The Pricing of CACs Near Default

If the voting threshold for changes to the payment term matters, as it should under the classical bilateral model, the market should reflect yield differences for comparable Venezuelan Republic bonds with different voting thresholds. Further, even if there are agency-cost reasons for not observing any pricing effects at initial issuance, those yield differences should be apparent in the near-default environment that we are testing.

Figure 1 depicts bond yields for three comparable Venezuela sovereign bonds with relatively similar maturities: the first with a 75% vote threshold and maturity in May 2028, the second with an 85% vote threshold and maturity in January 2034, and the third with a 100% vote threshold and maturity in September 2027. *Prediction One* is that we should observe lower yields for the 100% bonds compared with the 85% and 75% bonds, particularly as Venezuela nears default. The 100% bond provides greater protection in theory to bondholders against restructuring.

Figure 1. 100% v. 85% v. 75% Vote Threshold.



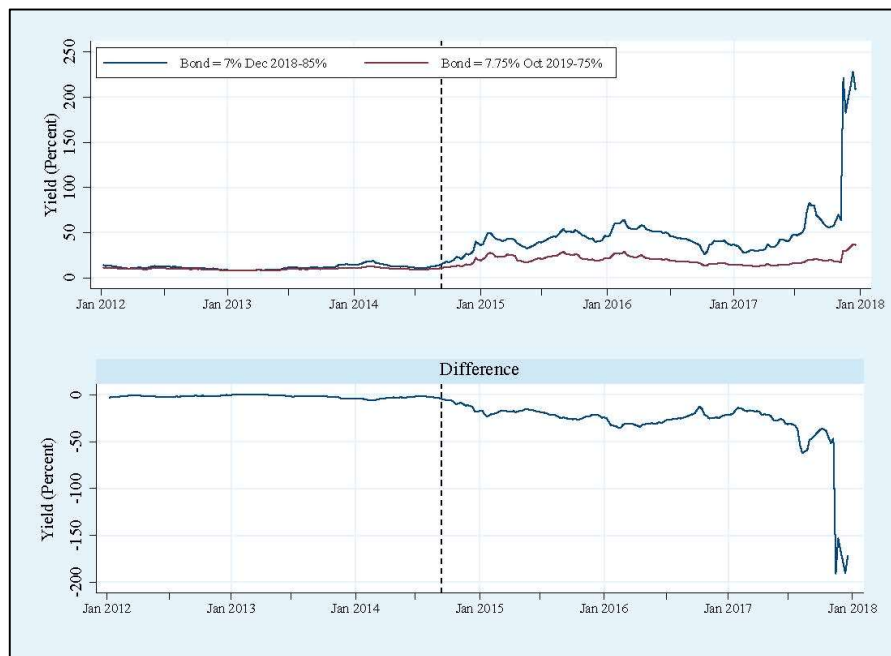
The dashed line indicates the beginning of the Crisis Period defined as when Rating is greater or equal to 17 (corresponding to CCC+ or lower rating by Standard & Poor's for Venezuela).

As Figure 1 depicts, however, while at times the yield for the 100% bond is lower than the yield for the 75% bond, this spread is not consistent, even as Venezuela approaches default. Often, the yield for the 85% bond is below the

yield for the 100% bond. We do not find what either the classical bilateral model or its agency-cost variant would predict.

Similarly, Figure 2 provides a graphical depiction of bond yields for two comparable Venezuela sovereign bonds with similar maturities: the first with an 85% vote threshold and maturity in December 2018 and the second with a 75% vote threshold and maturity in October 2019. *Prediction Two* is that we should observe lower yields for the 85% bonds than the 75% bonds as Venezuela nears default because a holdout blocking position is easier to assemble for the 85% bond. As Figure 2 depicts, however, the yield for the 85% bond is consistently greater than the yield for the 75% bond, particularly after Venezuela's credit rating drops to CCC+ or lower (marked by Crisis on the Figure). Again, the yield pattern is inconsistent with the classical theory and the agency-cost theory gloss.

Figure 2. 85% v. 75% Vote Threshold.



The dashed line indicates the beginning of the Crisis Period defined as when Rating is greater or equal to 17 (corresponding to CCC+ or lower rating by Standard & Poor's for Venezuela).

One of the stories told for why prior scholarship might not have found pricing differences between bonds with 100% vote thresholds and those with 75% vote thresholds was that these pricing differences might only be discerned when default likelihoods were very high. When a country is close to default, contract terms that make it more likely that holdouts will be able to block a restructuring for the specific bond can provide substantial positive value to the holders of that bond. As described earlier, the large and disproportionate recoveries that holdout specialists have obtained via the exercise of contract terms in the recent

restructurings of Argentina and Greece are vivid examples of this—something that the broader data bear out.⁵⁹

To test the importance of credit risk and near-default conditions on bond pricing (Predictions One and Two), we assess the relationship between bond spreads and the minimum vote required to change payment terms.⁶⁰ For the dependent variable, we use the log of the secondary market redemption yield for each bond. To reduce measurement error, we use weekly (log) yields based on averages of daily (log) yields in the week ($Yield_{i,t}$). We estimate the following model on bond-week level data for Venezuela's sovereign bonds using random effects with errors clustered by bond (termed the "Base Model"):

$$Yield_{i,t} = \alpha + \beta Vote_i + \gamma X_{i,t} + \gamma_{i,t} + \theta_i + \varepsilon_{i,t}$$

To test the relationship between yields and the voting requirement to change payment terms, we include $Vote_i$, the minimum percentage of bondholders required to change the payment terms for bond i , as an explanatory variable. Where 100% is the voting threshold, $Vote_i$ is equal to 1. We also include $X_{i,t}$, a vector of time-variant control variables; $\gamma_{i,t}$, a vector of bond-level, time-variant variables; and θ_i , a vector of bond-level, time-invariant variables. $X_{i,t}$ includes the 10YR U.S. benchmark yield ($Bm\ yield$, in logs) to account for general movement in sovereign bond yields, the VIX index as a proxy for market volatility (VIX , in logs), and the spread between U.S. corporate AAA and BBB bonds as a proxy for the credit risk premium ($BBB-AAA\ Spread$, in logs). We also construct a variable to measure issuer credit risk. We map daily long-term issuer credit ratings issued by Fitch, Moody's, and Standard & Poor's to a numeric scale ranging from fourteen (B+ for Standard & Poor's and B+ for Fitch) to twenty-two (SD for Standard and Poor's). Then we create a variable ("Rating") defined as the weekly average of daily averages across the three rating agencies. Higher values of Rating indicate worse credit ratings.

The bond-level, time-variant $\gamma_{i,t}$ variables include the following: First, we include residual maturity, given by the difference between a bond maturity and week t ($Resid\ Mat$, in log-weeks). The greater the time to maturity of a bond, the more likely it is that borrower creditworthiness will change during the life of the bond. Residual maturity is a proxy for the degree of uncertainty about repayment. Second, we use the bid-ask spread ($BA\ Spread$, in percentage) as a proxy for bond liquidity. The bond-level, time-invariant $\theta_{i,t}$ variable includes the coupon rate ($Coupon$, in percentage) since there is sometimes a tax-related preference for higher coupon bonds.

Descriptions of the variables are in Table 1. Descriptive statistics for our variables are provided in Table 2.

⁵⁹ See Schumacher, Trebesch & Enderlein, *supra* note 16, at 53 (concluding that holdout creditors make resolution of debt crises more difficult by demanding high recoveries); Schumacher, Trebesch & Enderlein, *supra* note 18 (summarizing statistical research demonstrating that holdout problem allows for significant recoveries).

⁶⁰ We follow the empirical methodology used in Bradley & Gulati, *supra* note 15, at 2055-64, and Carletti et al., *supra* note 43, at 548-55.

Table 1. Definition of Variables.

| Variable | Description | Units/Scale | Source |
|----------------|---|--------------------|--------------|
| Vote | Minimum percentage of bondholders required to change the payment terms; 100% is coded as Vote = 1 | Decimals | Perfect Info |
| Vote85 | = 1 if Vote = 0.85, = 0 otherwise | Binary | Perfect Info |
| Vote100 | = 1 if Vote = 1, = 0 otherwise | Binary | Perfect Info |
| Bm Yield | U.S. government benchmark yield 10YR | % (log) | Datastream |
| VIX | VIX index, settlement price | % (log) | Datastream |
| BBB-AAA Spread | Yield spread between BofA Merrill Lynch U.S. Corporate AAA and BBB | bps (log) | Datastream |
| Rating | Avg. of foreign currency LT debt issuer rating given by Fitch, Moody's, and S&P | 14 (B+) to 22 (SD) | Bloomberg |
| CDS | 5YR CDS spread, senior unsecured debt with CR clause | % (log) | Datastream |
| Resid Mat | Distance to maturity | Months (log) | Datastream |
| BA Spread | Percentage bid-ask spread $(P_{ask} - P_{bid})/P_{mid}$ | % | Datastream |
| Coupon | Annual Coupon | % | Datastream |

Table 2. Descriptive Statistics.**Panel A: Bond-Invariant Variables**

| Variable | N | mean | p25 | p50 | p75 | sd |
|---------------------------|-----|-------|--------|--------|--------|-------|
| Bm Yield (% , log) | 310 | 1.142 | 1.045 | 1.159 | 1.225 | 0.118 |
| VIX (% , log) | 310 | 2.749 | 2.613 | 2.724 | 2.88 | 0.204 |
| BBB-AAA Spread (bps, log) | 310 | 4.755 | 4.559 | 4.729 | 4.948 | 0.352 |
| Rating (index) | 310 | 16.72 | 14.667 | 17.233 | 18.333 | 1.877 |
| CDS (% , log) | 310 | 7.697 | 6.819 | 8.106 | 8.518 | 0.866 |

Panel B: Venezuela Sovereign Bond-Level Variables

| Variable | N | mean | p25 | p50 | p75 | sd |
|-------------------------|------|-------|-------|-------|-------|-------|
| Vote | 15 | 0.813 | 0.75 | 0.75 | 0.85 | 0.103 |
| Coupon | 15 | 9.615 | 7.65 | 9.25 | 11.95 | 2.516 |
| Yield (% , log) | 4650 | 3.016 | 2.581 | 2.97 | 3.387 | 0.513 |
| Resid Mat (months, log) | 4650 | 4.629 | 4.234 | 4.754 | 5.13 | 0.69 |
| BA Spread (%) | 4027 | 2.108 | 1.387 | 2.085 | 2.877 | 3.599 |

Panel C: PDVSA Bond-Level Variables

| Variable | N | mean | p25 | p50 | p75 | sd |
|-------------------------|------|-------|-------|-------|-------|-------|
| Vote | 11 | 1 | 1 | 1 | 1 | 0 |
| Coupon | 11 | 7.193 | 5.375 | 6 | 9 | 2.468 |
| Yield (% , log) | 2170 | 3.053 | 2.681 | 3.059 | 3.36 | 0.434 |
| Resid Mat (months, log) | 3410 | 4.901 | 4.539 | 4.868 | 5.429 | 0.509 |
| BA Spread (%) | 2014 | 1.858 | 1.614 | 2.298 | 2.965 | 5.041 |

Table 3 reports our results. In Model 1 of Table 3, we report the Base Model estimated for Venezuelan sovereign bonds with an interaction term between Rating and Vote. In Model 2 of Table 3, we estimate the Base Model for Venezuelan sovereign bonds, replacing Vote with indicator variables for Vote85 (minimum vote threshold of 85% to change payment terms) and Vote100 (minimum vote threshold of 100% to change payment terms) and using bonds with a 75% vote threshold to change payment terms as the base category. In Model 2, we also include interaction terms between Rating and Vote85 and Vote100 respectively.

Table 3. Near Default Pricing.

The models in Table 3 are estimated on bond-week level data for Venezuela's sovereign bonds using random effects with errors clustered by bond. The dependent variable for the models is the log of the secondary market redemption yield for each bond. We include as independent variables the following time-variant control variables: the 10YR U.S. benchmark yield (*Bm Yield*, in logs), the VIX index as a proxy for market volatility (*VIX*, in logs), and the spread between U.S. corporate AAA and BBB bonds as a proxy for the credit risk premium (*BBB-AAA Spread*, in logs). We also construct a variable to measure issuer credit risk. We map daily long-term issuer credit ratings issued by Fitch, Moody's, and Standard & Poor's to a numeric scale ranging from fourteen (B+ for Standard & Poor's and B+ for Fitch) to twenty-two (SD for Standard and Poor's). Then we create "Rating" as the weekly average of daily averages across the three rating agencies and include Rating as an independent variable in the models. We include a number of bond-specific control variables, including residual maturity, given by the difference between a bond maturity and week *t* (*Resid Mat*, in log-months); the coupon rate (*Coupon*, in percentage); and the bid-ask spread (*BA Spread*, in percentage) as a proxy for bond liquidity. In Model 1, we include as an independent variable Vote, the minimum percentage of bondholders required to change the payment terms for bond *i*, and an interaction term between Rating and Vote. In Model 2, we replace Vote with indicator variables for Vote85 (minimum vote threshold of 85% to change payment terms) and Vote100 (minimum vote threshold of 100% to change payment terms) using bonds with a 75% vote threshold to change payment terms as the base category instead of the Vote variable. We also include interaction terms between Rating and Vote85 and Vote100 respectively. In Model 3, we reestimate Model 1 replacing Vote with Crisis, an indicator variable for when Rating is greater or equal to seventeen (corresponding to CCC+ or lower rating by Standard & Poor's for Venezuela) and replacing the Rating x Vote interaction variable with Crisis x Vote. In Model 4, we reestimate Model 2, replacing Rating with Crisis, and include interaction terms between Crisis and Vote85 and Vote100 respectively.

Table 3. Near Default Pricing (continued).

| | Model 1 | Model 2 | Model 3 | Model 4 |
|-------------------------|--------------------|-----------------|--------------------|--------------------|
| | Yield | Yield | Yield | Yield |
| | (%, log) | (%, log) | (%, log) | (%, log) |
| Vote | -2.723 | | -1.623 | |
| | (-1.32) | | (-1.32) | |
| Vote85 | | -0.637 | | -0.0568 |
| | | (-0.97) | | (-0.16) |
| Vote100 | | -0.641 | | -0.435 |
| | | (-1.29) | | (-1.31) |
| Bm Yield | 0.266** | 0.255** | 0.434** | 0.425** |
| | (5.88) | (6.67) | (7.46) | (7.49) |
| VIX | 0.0986** | 0.0949** | 0.179** | 0.176** |
| | (4.73) | (4.76) | (7.19) | (7.13) |
| BBB-AAA Spread | 0.452** | 0.451** | 0.228** | 0.227** |
| | (10.42) | (11.44) | (4.55) | (4.95) |
| Rating | 0.134 ⁺ | 0.205** | | |
| | (1.67) | (23.59) | | |
| Resid Mat | -0.575** | -0.567** | -0.726** | -0.715** |
| | (-5.16) | (-5.47) | (-6.28) | (-6.68) |
| BA Spread | 0.00428 | 0.00456 | 0.00876* | 0.00895* |
| | (1.45) | (1.60) | (2.30) | (2.26) |
| Coupon | 0.0249 | 0.0352 | 0.0277 | 0.0386 |
| | (0.88) | (1.03) | (0.72) | (0.85) |
| Rating x Vote | 0.101 | | | |
| | (0.98) | | | |
| Rating x Vote85 | | 0.0416 | | |
| | | (1.43) | | |
| Rating x Vote100 | | 0.0205 | | |
| | | (0.92) | | |
| Crisis | | | 0.451 ⁺ | 0.572** |
| | | | (1.82) | (18.58) |
| Crisis x Vote | | | 0.181 | |
| | | | (0.58) | |
| Crisis x Vote85 | | | | 0.150 ⁺ |
| | | | | (1.96) |
| Crisis x Vote100 | | | | 0.0209 |
| | | | | (0.31) |
| Constant | 1.305 | -0.789 | 5.045** | 3.695** |
| | (0.90) | (-0.97) | (4.04) | (4.62) |
| N | 4027 | 4027 | 4027 | 4027 |
| R ² -overall | 0.6879 | 0.7016 | 0.5537 | 0.5676 |

z statistics in parentheses; ⁺ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$.

The control variables in Models 1 and 2 of Table 3 largely follow expectations. The greater the 10YR U.S. benchmark yield, the VIX index, and the spread between U.S. Corporate BBB and AAA bonds, the higher the Yield

on the Venezuela Republic bonds. The higher the credit rating (given by a lower Rating) and the longer the maturity (Resid Mat), the lower the Yield on the Venezuela Republic bonds. Our key explanatory variables of interest, Vote in Model 1 and Vote85 and Vote100 in Model 2, are not significantly different from zero.

Focusing on pricing when a sovereign nears default (Predictions One and Two), note in Models 1 and 2 that the coefficients on the interaction terms with Rating and Vote and with Rating and Vote85 and Vote100 are not significantly different from zero. Even as Venezuela gets close to default, we find no evidence that the market prices any of the differences in those contract provisions that dictate the voting threshold for changes to the payment terms.

To test whether the market may only price the voting threshold provisions discontinuously after the risk of default passes a particular threshold, we create an indicator variable for Rating greater or equal to seventeen (corresponding to CCC+ or lower rating by Standard & Poor's) that we term the "Crisis" period. Our reason for examining this discontinuous scenario is the possibility that some investment vehicles, such as pension funds, may have internal rules about the types of investments they are allowed to hold. For example, they may be permitted to invest only in securities that have a credit rating above a certain level or securities listed on an exchange.⁶¹

We reestimate Model 1 of Table 3, substituting the Rating variable with the Crisis variable and an interaction between Crisis and Vote. Model 3 of Table 3 reports the results. We reestimate Model 2 of Table 3, substituting the Rating variable with the Crisis variable and interactions between Crisis and Vote85 and between Crisis and Vote100. Model 4 of Table 3 reports the results.

As reported in Table 3, the coefficients on Crisis in Models 3 and 4 are positive and significant at the 10% and 1% levels respectively. Crisis corresponds to higher yields for the Venezuelan sovereign bonds. The coefficient on the Crisis x Vote interaction term is not significantly different from zero in Model 3. In contrast, the coefficient on Crisis x Vote85 is positive and significant at the 10% level in Model 4. Some evidence exists that the market does price a particular provision, the 85% voting threshold term, differently in the Crisis period compared with the 75% voting threshold base category. But the pricing differential is the opposite of what the classical bilateral model predicts. Because a holdout creditor should have an easier time building a 15% block to stop a change to the payment terms under an 85% voting threshold as compared with building a 25% block under a 75% voting threshold, one would expect that the yield on the 85% term bond should be lower than the yield on the 75% term bond. However, the coefficient on Crisis x Vote85 is positive, indicating that the yield for the 85% term bond becomes relatively greater compared with the 75% term bond as Venezuela approaches default. This is inconsistent with Prediction Two. The differences between Crisis x Vote85 and Crisis x Vote100 and

⁶¹ See Elisabeth de Fontenay, Josefin Meyer & Mitu Gulati, *The Sovereign Debt Listing Puzzle*, 71 OXFORD ECON. PAPERS 472, 472 (2019) (discussing this practice).

between $\text{Vote85} + \text{Crisis} \times \text{Vote85}$ and $\text{Vote100} + \text{Crisis} \times \text{Vote100}$ are also not significantly different from zero. This is inconsistent with Prediction One.⁶²

Our results demonstrate only a failure to reject the null hypothesis that the coefficient on the voting threshold is equal to zero. Failure to reject the null is not the same as proving the null. Nonetheless, both Figures 1 and 2 demonstrate that for Venezuelan sovereign bonds closely matched in terms of maturity, the market does not price the voting threshold in the way one would predict under the bilateral model, according to which the bonds with the higher vote thresholds should display lower yields. Moreover, the models in Table 3 are for bonds all from the same sovereign, reducing the concern that other, unobserved factors may be driving the model results.

In sum, we do not find evidence that the voting provisions to change payment terms are correlated with yields for the Venezuelan sovereign bonds even as Venezuela approached default. This is inconsistent with the classical bilateral view of contract pricing and does not support Predictions One or Two.

3. Pricing the *Marblegate* Effect

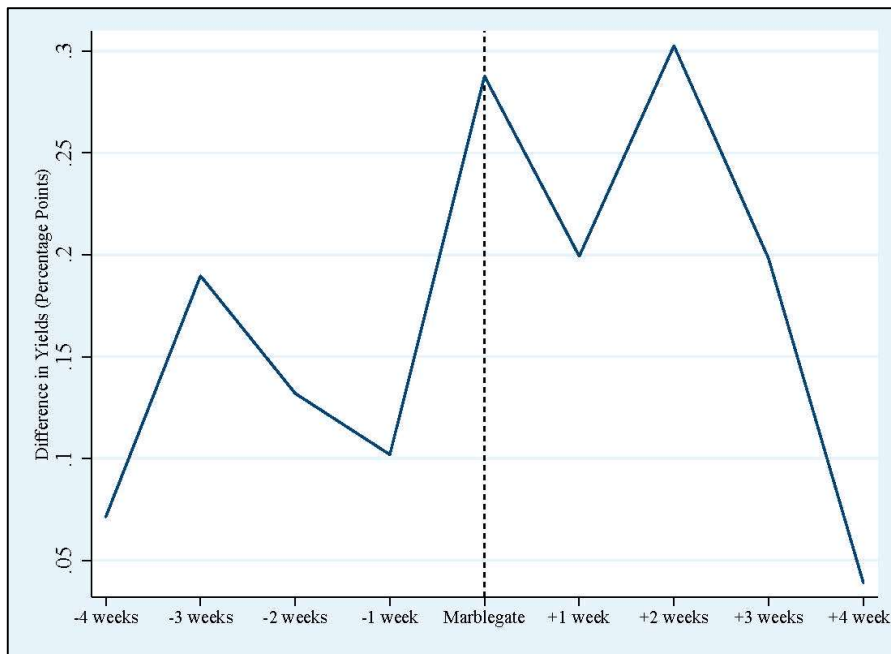
To explore further the (lack of a) pricing effect for vote thresholds even as a sovereign approaches default, we turn to the Second Circuit's *Marblegate* decision on January 17, 2017, which opened up the possibility of the sovereign using Exit Consents as a means of restructuring the 100% vote threshold Republic bonds.⁶³ *Prediction Three* is that the *Marblegate* decision should have increased the yield of the 100% bonds relative to the 85% and 75% bonds, decreasing the spread between the 100% bonds and the 85% and 75% bonds.

We examine the same three comparable bonds as in Figure 1: 75%, 85%, and 100% vote threshold Republic bonds in the period from -4 weeks to +4 weeks centered on the week of the *Marblegate* decision. We depict the difference in yields for the 100% bond compared with the mean of the yields for the 75% and 85% bonds in Figure 3.

⁶² We reestimate the models in Table 3 without the use of random effects using ordinary least squares and errors clustered by bond. Unreported, we obtain the same qualitative results as in Models 1 through 4 with one exception. In Model 3, the coefficient on $\text{Crisis} \times \text{Vote85}$, while positive, is no longer significantly different from zero.

⁶³ See *Marblegate Asset Mgmt., LLC v. Educ. Mgmt. Fin. Corp.*, 846 F.3d 1, 16-17 (2d Cir. 2017); Kahan, *supra* note 46, at 139-42; Benjamin Liu, *Exit Consents in Debt Restructurings*, 13 CAP. MKTS. L.J. 116, 119-21 (2017); Mitu Gulati & Mark Weidemaier, *Marblegate and the Use of Exit Consents to Restructure (Venezuelan) Sovereign Debt*, AM. BANKR. INST. (Feb. 25, 2017), <https://www.abi.org/feed-item/marblegate-and-the-use-of-exit-consents-to-restructure-venezuelan-sovereign-debt> [<https://perma.cc/5FXJ-JS4J>].

Figure 3. Difference in Yields Between 100% and Comparison Bonds Around *Marblegate* Decision Centered on the Week of the *Marblegate* Decision.



100% Bond = 9.25% Sep 2027-100% and Comparison Bonds = Mean of 9.25% May 2028-75% and 9.375% Sep Jan 2034-85%.

Note from Figure 3 that the yield on the 100% bond is higher than the yield on the 75% and 85% bonds prior to *Marblegate*. After *Marblegate*, the yield on the 100% bond, if anything, moves lower relative to the yield on the 75% and 85% bonds. This lack of upward movement in the yield for the 100% bond after *Marblegate* is inconsistent with the expectation that the market would react to the increased possibility of Exit Consents by viewing the 100% bond as more vulnerable to restructuring.

As a multivariate test of Prediction Three, we estimate the Base Model for Venezuelan sovereign bonds with the addition of an indicator variable for the bond yields in the time period after the week containing January 17, 2017 (termed “*Marblegate*”), and an interaction term between *Marblegate* and *Vote*. We report the results as Model 1 of Table 4, estimated with random effects and errors clustered by bonds. In Model 2 of Table 4 we estimate the Base Model for Venezuelan sovereign bonds, replacing *Vote* with indicator variables for *Vote85* (minimum vote threshold of 85% to change payment terms) and *Vote100* (minimum vote threshold of 100% to change payment terms) and using bonds with a 75% vote threshold to change payment terms as the base category. In Model 2 we also include an indicator variable for the *Marblegate* decision

and interaction terms between Marblegate and Vote85 and Vote100. We estimate Model 2 with random effects and errors clustered by bonds.

Table 4. *Marblegate Tests.*

The models in Table 4 are estimated on bond-week level data for Venezuela's sovereign bonds using random effects with errors clustered by bond. The dependent variable for the models is the log of the secondary market redemption yield for each bond. We include as independent variables the following time-variant control variables: the 10YR U.S. benchmark yield (*Bm Yield*, in logs), the VIX index as a proxy for market volatility (*VIX*, in logs), and the spread between U.S. corporate AAA and BBB bonds as a proxy for the credit risk premium (*BBB-AAA Spread*, in logs). We also construct a variable to measure issuer credit risk. We map daily long-term issuer credit ratings issued by Fitch, Moody's, and Standard & Poor's to a numeric scale ranging from fourteen (B+ for Standard & Poor's and B+ for Fitch) to twenty-two (SD for Standard and Poor's). Then we create "Rating" as the weekly average of daily averages across the three rating agencies and include Rating as an independent variable in the models. We include a number of bond-specific control variables, including residual maturity, given by the difference between a bond maturity and week t (*Resid Mat*, in log-months); the coupon rate (*Coupon*, in percentage); and the bid-ask spread (*BA Spread*, in percentage) as a proxy for bond liquidity. In Model 1, we include as an independent variable Vote, the minimum percentage of bondholders required to change the payment terms for bond i . We also include an indicator variable for the bond yields in the time period after the week containing January 17, 2017 (termed "Marblegate"), and interaction terms between Marblegate and Vote85 and Vote100. In Model 2, we replace Vote with indicator variables for Vote85 (minimum vote threshold of 85% to change payment terms) and Vote100 (minimum vote threshold of 100% to change payment terms), using bonds with a 75% vote threshold to change payment terms as the base category. We also include interaction terms between Marblegate and Vote85 and Vote100.

| | Model 1 | Model 2 |
|----------------|------------------------|------------------------|
| | Yield (% , log) | Yield (% , log) |
| Vote | -1.012 (-1.11) | |
| Vote85 | | 0.0496 (0.21) |
| Vote100 | | -0.296 (-1.19) |
| Bm Yield | 0.279** (6.31) | 0.277** (6.61) |
| VIX | 0.114** (6.17) | 0.114** (6.16) |
| BBB-AAA Spread | 0.469** (10.27) | 0.468** (10.53) |
| Rating | 0.216** (23.79) | 0.216** (23.52) |
| Resid Mat | -0.567** (-4.63) | -0.562** (-4.79) |

Table 4. *Marblegate* Tests (continued).

| | Model 1 | Model 2 |
|-------------------------|-----------------|-----------------|
| | Yield (% , log) | Yield (% , log) |
| BA Spread | 0.00418 | 0.00422 |
| | (1.29) | (1.30) |
| Coupon | 0.0252 | 0.0346 |
| | (0.91) | (1.03) |
| Marblegate | -0.208 | 0.0150 |
| | (-0.66) | (0.41) |
| Marblegate x Vote | 0.304 | |
| | (0.80) | |
| Marblegate x Vote85 | | 0.0846 |
| | | (1.19) |
| Marblegate x Vote100 | | 0.0701 |
| | | (0.79) |
| Constant | -0.264 | -1.140 |
| | (-0.21) | (-1.29) |
| <i>N</i> | 4027 | 4027 |
| R ² -overall | 0.6922 | 0.7020 |

z statistics in parentheses; ⁺ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$.

As reported in Table 4, the coefficients on *Marblegate* are not significantly different from zero in Models 1 and 2. In addition, the interaction terms between *Marblegate* x *Vote* in Model 1 and *Marblegate* x *Vote85* and *Marblegate* x *Vote100* in Model 2 are not significantly different from zero. That is, we find no evidence of the market pricing the impact of the *Marblegate* decision into the Republic's bond yields. This result is consistent with the lack of any systematic change in the yield spread between the 100% vote threshold Republic bonds and the 75% vote threshold Republic bonds in Figure 3 after the *Marblegate* decision. Contrary to the predictions of the classical bilateral model as extended by the agency-cost theory, there is little evidence in support of Prediction Three.⁶⁴

⁶⁴ We reestimate the models in Table 4 without the use of random effects using ordinary least squares and errors clustered by bond. Unreported, we obtain somewhat different results. First, in Model 1, while the coefficient on *Vote* remains not significant, the coefficient on *Marblegate* x *Vote* is positive and significant at the 10% level. Second, in Model 2 the coefficient on *Vote100* is negative and not significant; however, the coefficient on the *Marblegate* x *Vote100* interaction term is positive and significant at the 10% level. These results are weakly consistent with the greater ability to use exit consents for UAC bonds after *Marblegate* corresponding to an increase in yields for the UAC bonds. This provides support for the premise that the market may have priced the UAC bond separately from the CAC bonds during some periods of time (although, overall, we do not find support for this in our models in Table 3). See Carletti et al., *supra* note 43, at 555.

B. *The PDVSA Bonds*

Our next two tests focus on the pricing of PDVSA bonds and, in particular, the pricing of the Collateral Bond and the Hunger Bond relative to other PDVSA bonds. Both the Collateral Bond and the Hunger Bond have features that, in theory, should affect the pricing of the bonds.

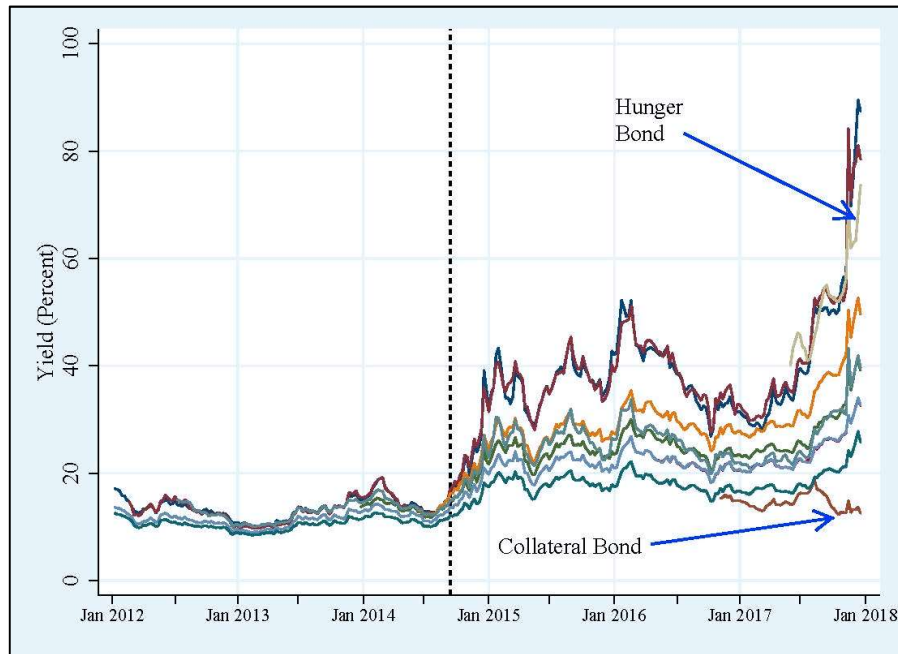
1. The Collateral Bond and the Hunger Bond

Holders of the Collateral Bond will realize on the value of the collateral in the event of a default because of the publicly disclosed presence of a well-known holder of a large block of the Collateral Bond willing to exercise the collective rights to the collateral.⁶⁵ *Prediction Four* is that the Collateral Bond should have lower yields compared with other PDVSA bonds. Similarly, holders of the Hunger Bond will suffer unilaterally if other actors (e.g., a successor government in Venezuela) seek to declare the Hunger Bond legally invalid. *Prediction Five* is that the Hunger Bond will have higher yields compared with the other PDVSA bonds. For Predictions One, Two, and Three, by contrast, the relative strength of the legal strategies for squeezing holdouts in the Republic and PDVSA bonds depended on the ability of either the government or the holdout to induce (or block) collective action.

Under the bilateral model, we conjecture that for Venezuela, the market prices should reflect the different contractual features in the Collateral Bond, the Hunger Bond, and the different voting thresholds to change payment and payment-related terms. All three types of differences in bond contracts could impact the returns investors can expect in major ways, and all three should consequently be priced in the market. The only variation is that for two of the bonds—the Collateral Bond and Hunger Bond—the legal differences do not require collective action, while collective action is required for the different voting thresholds to change payment and payment-related terms. This variation allows us to test whether, as predicted by the collective action model, contract terms requiring collective action will only be priced when the market learns of the presence of activist creditors willing to play the role of a collectivizing agent.

The basic result is discernable on a graph. We graph the PDVSA bonds in Figure 4. Note that the yields for the Collateral Bond are the lowest among all the PDVSA bonds and the yields for the Hunger Bond are among the highest for all the PDVSA bonds.

⁶⁵ See *supra* note 36 and accompanying text (emphasizing that price of bonds issued by PDVSA has nearly doubled despite shadow of default).

Figure 4. PDVSA Bonds.

The dashed line indicates the beginning of the Crisis Period defined as when Rating is greater or equal to 17 (corresponding to CCC+ or lower rating by Standard & Poor's for Venezuela).

As a multivariate test, we estimate the Base Model now for the PDVSA bonds removing the Vote indicator variable (because all PDVSA bonds have a 100% voting threshold to change payment terms) and adding an indicator variable for the Collateral Bond. We report the results as Model 1 of Table 5, estimated with random effects and clustered errors at the bond level. We also estimate the Base Model for PDVSA bonds by removing the Vote indicator variable and adding an indicator variable for the Hunger Bond. We report the results in Model 2 of Table 5, estimated with random effects and clustered errors at the bond level. Lastly, we estimate the Base Model for PDVSA bonds removing the Vote indicator variable and adding indicator variables for both the Collateral Bond and the Hunger Bond. We report the results in Model 3 of Table 5, estimated with random effects and clustered errors at the bond level.

Table 5. Collateral and Hunger Bonds.

The models in Table 5 are estimated on bond-week level data for Venezuela's sovereign bonds using random effects with errors clustered by bond. The dependent variable for the models is the log of the secondary market redemption yield for each bond. We include as independent variables the following time-variant control variables: the 10YR U.S. benchmark yield (*Bm Yield*, in logs), the VIX index as a proxy for market volatility (*VIX*, in logs), and the spread between U.S. corporate AAA and BBB bonds as a proxy for the credit risk premium (*BBB-AAA Spread*, in logs). We also construct a variable to measure issuer credit risk. We map daily long-term issuer credit ratings issued by Fitch, Moody's, and Standard & Poor's to a numeric scale ranging from fourteen (B+ for Standard & Poor's and B+ for Fitch) to twenty-two (SD for Standard and Poor's). Then we create "Rating" as the weekly average of daily averages across the three rating agencies and include Rating as an independent variable in the models. We include a number of bond-specific control variables, including residual maturity, given by the difference between a bond maturity and week t (*Resid Mat*, in log-months); the coupon rate (*Coupon*, in percentage); and the bid-ask spread (*BA Spread*, in percentage) as a proxy for bond liquidity. In Model 1, we include an indicator variable for the Collateral Bond. In Model 2, we include an indicator variable for Hunger Bond. In Model 3, we include indicator variables for both Collateral Bond and Hunger Bond.

| | Model 1 | Model 2 | Model 3 |
|------------------------|------------------------|------------------------|------------------------|
| | Yield (% , log) | Yield (% , log) | Yield (% , log) |
| Bm Yield | -0.0133 | -0.0840 | -0.0295 |
| | (-0.24) | (-1.00) | (-0.54) |
| VIX | 0.0894** | 0.0963** | 0.0986** |
| | (4.03) | (5.04) | (4.48) |
| BBB-AAA Spread | 0.215** | 0.189** | 0.203** |
| | (4.15) | (3.26) | (4.10) |
| Rating | 0.184** | 0.197** | 0.189** |
| | (9.18) | (9.28) | (9.24) |
| Resid Mat | -0.472** | -0.175 | -0.374** |
| | (-4.79) | (-0.79) | (-4.87) |
| BA Spread | 0.00490** | 0.00668** | 0.00584** |
| | (3.16) | (3.39) | (3.28) |
| Coupon | 0.0154 | 0.0347* | 0.0278 |
| | (0.72) | (2.50) | (1.64) |
| Collateral Bond | -1.088** | | -0.976** |
| | (-13.62) | | (-15.38) |
| Hunger Bond | | 0.625** | 0.409** |
| | | (2.78) | (5.38) |
| Constant | 0.875 | -0.861 | 0.252 |
| | (1.12) | (-0.72) | (0.38) |
| <i>N</i> | 2014 | 2014 | 2014 |
| R ² overall | 0.8708 | 0.7892 | 0.8953 |

z statistics in parentheses; [†] $p < 0.10$, * $p < 0.05$, ** $p < 0.01$.

In Model 1 of Table 5, the coefficient on the Collateral Bond is negative and significant at the 1% level. The market prices the presence of the collateral provision in the PDVSA 2020 bond, resulting in lower yields for this particular PDVSA bond. In Model 2 of Table 5, the coefficient on the Hunger Bond is positive and significant at the 1% level. The market prices the legal infirmity of the Hunger Bond, resulting in higher yields for this bond. When we include indicator variables for both the Collateral Bond and the Hunger Bond in Model 3 of Table 5, we get the same qualitative results.⁶⁶ While our earlier tests in Tables 3 and 4 indicated no pricing difference for variations in voting thresholds to change payment and payment-related terms, we observe pricing of arguably equally important variations from the Collateral and Hunger Bonds where these variations involve rights that the market expects bondholders will have the ability to utilize, either because a known collectivizing agent exists in the market or because the rights are unilateral.

2. The Rumor Bonds

Our final test looks at whether the market reacted to the two rumors—one in January 2016 and the other, two years later, in January 2018—that activist creditors had targeted two particular bonds in which to build a holdout position. If the reason that differences in CACs are not priced is the market's inability to determine where facilitators of collective action are holding positions, then we would predict that rumors should correspond with a pricing shift. In particular, we should observe yield decreases for the rumor bonds.

We start with the January 2016 rumor. On January 17, 2016, an article appeared in *Reuters*, quoting Russ Dallen—the CEO of the primary paid-subscriber news service on Venezuelan debt, *Caracas Capital*—stating that the Venezuelan 9.25% September 2027 bond (the “January 2016 Rumor Bond”) was being targeted by activist creditors.⁶⁷ According to our hidden-holdout

⁶⁶ We reestimate the models in Table 5 without the use of random effects, using ordinary-least squares and errors clustered by bond. Unreported, we obtain the same qualitative results as in Models 1 through 3 of Table 5.

⁶⁷ See Davide Scigliuzzo, *Argentina-Style Legal Drama Looms if Venezuela Defaults on Debt*, *REUTERS* (Jan. 21, 2016, 4:15 PM), <https://www.reuters.com/article/venezuela-bonds-cac/argentina-style-legal-drama-looms-if-venezuela-defaults-on-debt-idUSL2N1551WL> [<https://perma.cc/ZF9P-384J>] (quoting Venezuelan debt expert Russ Dallen on 2027 bonds being likely target of holdout creditors); see also Robin Wigglesworth, *Venezuelan Bond Small Print Piques Investors' Interest*, *FIN. TIMES (Asia)*, June 18, 2016, at 15, <https://www.ft.com/content/36ed3e64-324c-11e6-bda0-04585c31b153> (discussing premium for 2027 bond). The rumor of the 2027 bond being targeted was also openly discussed at the June 30, 2016, Paris Club meetings, the annual consultations between the public and private sectors hosted by the French Ministry of Finance (we had been invited to present our work on Venezuelan debt pricing, although we did not know about the rumors at the time). See Press Release, Inst. of Int'l Fin., Meeting of the Paris Club with Representatives of Non-Paris Club Bilateral Creditors Ad Representatives of the Private Sector (June 30, 2016), <https://www.iif.com/Press/View/ID/1671/Press-Release-of-the-Paris-Club-and-the-IIF> [<https://perma.cc/WM3W-YF5M>].

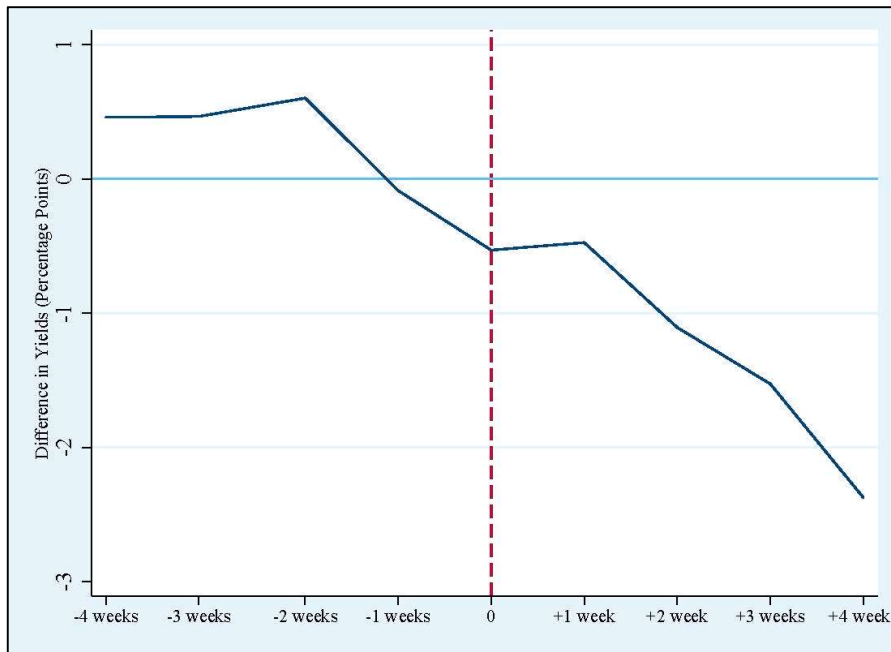
story, this identification should result in the market viewing the January 2016 Rumor Bond more favorably, resulting in a decrease in the yield for the rumor bond relative to other Venezuelan bonds. Further, given that *Caracas Capital* operates on a paid-subscriber basis, one should expect that their release of news to the public occurs only a period of time after their paying customers have had time to act on the news.

To test the price impact of the January 2016 rumor, we examine the relative yields for the January 2016 Rumor Bond—the Venezuelan 9.25% September 2027 bond (100% unanimity)—with two Venezuelan sovereign bonds of comparable maturity—the Venezuelan 9.375% January 2034 bond (85% CAC) and the 9.25% May 2028 bond (75% CAC). A significant separation between the rumor bond and the two comparison bonds appears roughly between January 1, 2016, and July 1, 2016—that is, the market appears to have started valuing the 2027 bond more highly than the comparison bonds starting about two weeks prior to when the *Reuters* article appeared on January 21, 2016.⁶⁸

To examine the difference in yield between the rumor bond and the two comparison bonds, we graph the difference in yields centered on the third week of January (the week of January 15, 2016) depicted as week 0 in Figure 5, which contains January 21, 2016. For our test, we focus on yields from -4 weeks to +4 weeks centered on the week of January 15, 2016. We go back four weeks to take into account that rumors may have affected market yields prior to the public announcement of the rumors. Figure 5 depicts the difference between the yield for the rumor bond and the mean yield for the comparison bonds (a positive yield difference indicates that the market prices the rumor bond with a higher yield compared with the comparison bonds).

⁶⁸ See generally Scigliuzzo, *supra* note 67.

Figure 5. Difference in Yields Between 100% (Rumor Bond) and Comparison Bonds Centered on Week of January 15, 2016.



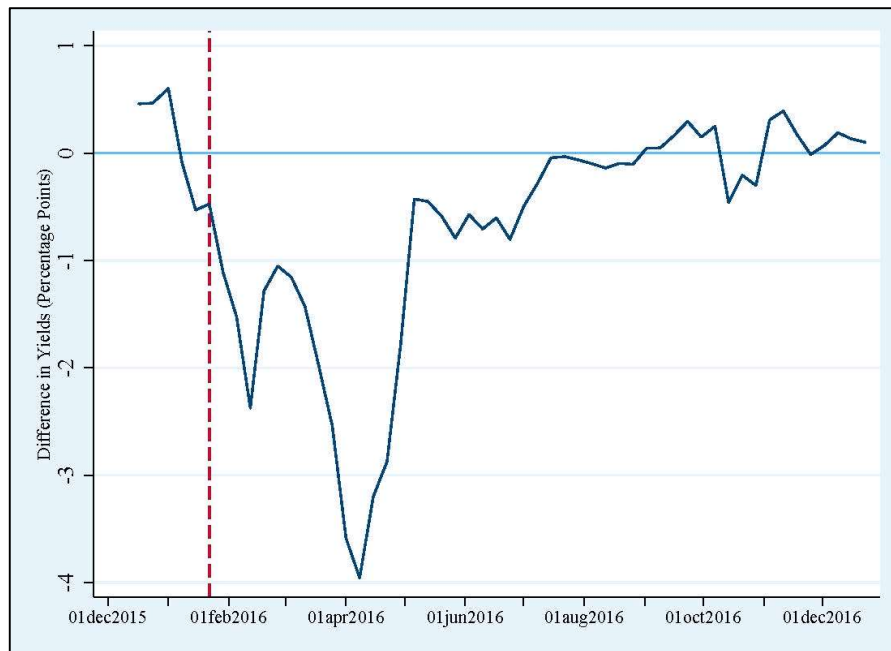
100% Bond = 9.25% Sep 2027-100% and Comparison Bonds = Mean of 9.25% May 2028-75% and 9.375% Sep Jan 2034-85%.

Note from Figure 5 that the January 2016 Rumor Bond starts with a slightly higher yield than the comparison bonds at -4 weeks, indicating that the market initially viewed the rumor bond as riskier compared with the comparison bond. However, starting at -2 weeks, the yields flip and the rumor-bond yield shifts to below the yield of the comparison bonds. This reversal is consistent with the market pricing-in the information regarding activist creditors in the rumor bond, which would increase the risk of a holdout relative to other bonds irrespective of the formal voting thresholds. This increased holdout risk makes the rumor bond more valuable to investors, diminishing the relative yield of the rumor bond. This supports the collective action story that while the market does not generally price differences in terms that require collective action for enforcement, the market does price credible information about the presence of activist creditors in particular bonds.

Venezuela did not default in 2016. And indeed, at the June 30, 2016, Paris Club meetings—the annual consultative event between public- and private-sector representatives in the sovereign debt market—the discussion of the rumor of a hedge fund having possibly targeted the 2027 bond was framed in the past

tense.⁶⁹ Because the rumors have dissipated, we expect the pricing differential between the January 2016 Rumor Bond and the two comparison bonds to diminish as the market returns to the hidden-holdout state where the holdout's potential location is unknown. Because we do not know the exact timing of the dissipation of the rumors, we add on the rest of the weeks through the end of 2016 to the time period in Figure 5 and display the differential in spread for this extended time period in Figure 6.

Figure 6. Difference in Yields Between 100% (Rumor Bond) and Comparison Bonds.



100% Bond = 9.25% Sep 2027-100% and Comparison Bonds = Mean of 9.25% May 2028-75% and 9.375% Sep Jan 2034-85%. The dashed line corresponds to the week of January 15, 2016.

Note from Figure 6 that the yield differential continues to grow more negative (indicating that the rumor bond is viewed as less risky) up to April 2016, after which the yield differential begins to diminish until it reaches approximately zero from late July 2016 onward, consistent with potential holdouts becoming hidden from the market again.

⁶⁹ The discussion of the rumored hedge fund targeting of particular bonds came up in response to the presentation that one of us made on the pricing of CACs at those meetings. We were unaware at that time both of the initial rumors and the dissipation.

We turn next to the January 2018 rumor regarding the Venezuelan 9.375% January 2034 bond (“January 2018 Rumor Bond”), which occurred in a time period when Venezuela was closer to default. As with the January 2016 rumor, it is difficult to pinpoint the exact starting point of the rumor. We noted a subscriber-only investor report by an investment research firm specializing in news on Venezuelan debt, *Caracas Capital*, that was emailed to subscribers on January 29, 2018. To quote the *Caracas Capital* research report from January 29, 2018:

[We] can report that several hedge funds have been doing some strategic acceleration calculations. One of the bonds that some have settled on is the \$1.5 billion Venezuela 9.375% of January 13, 2034. That particular bond is being targeted because it only requires \$375 million in face to vote to accelerate, one of the lower amounts (25% of the \$1.5 billion total issue size). In all, the \$375 million of the Venezuela 34, which is currently trading at around a price of 26 (and without interest), costs less than \$100 million.⁷⁰

Separately, we were also told of this news by participants at a public seminar on sovereign debt held on April 23-24, 2018, at the European University Institute, where one of us was teaching at the time.⁷¹

Unlike the January 2016 rumor, the January 2018 rumor did not dissipate. Instead, on May 31, 2018, *Bloomberg* reported confirmation of the rumor, stating that a hedge fund group had emerged that was holding a blocking position on the 85% bond maturing in 2034.⁷²

To test the price impact of the January 2018 rumor, we examine the relative yields for the January 2018 Rumor Bond—the Venezuelan 9.375% January 2034 bond (85% CAC)—with two Venezuelan sovereign bonds of comparable maturity—the 9.25% May 2028 bond (75% CAC) and the 9.25% September 2027 bond (100% unanimity).

For our test, we focus on yields from -4 weeks to +4 weeks centered on the last week of January 2018.⁷³ We go back four weeks to take into account that

⁷⁰ CARACAS CAPITAL, INVESTOR REPORT, VENEZUELA REGIME ELECTION TRICKS: WHAT’S NEXT FOR BONDHOLDERS AND THE OPPOSITION? 4 (2018) (on file with authors).

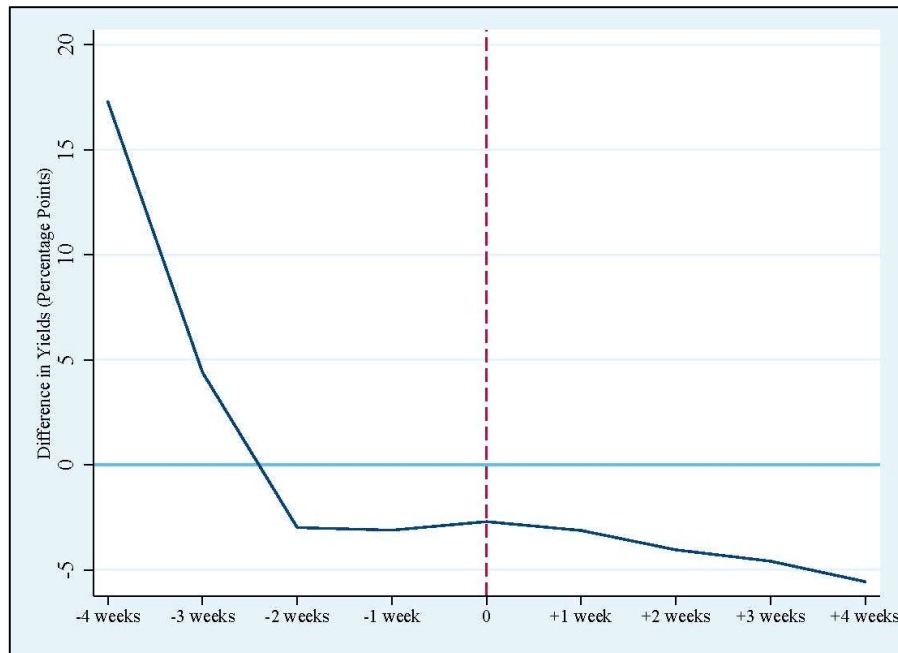
⁷¹ See generally *Managing and Understanding Sovereign Debt Risks and Restructuring*, FLORENCE SCH. BANKING & FIN., <http://fbf.eui.eu/managing-understanding-sovereign-risks/> [<https://perma.cc/9PZU-88GS>] (last visited Dec. 21, 2019) (announcing and describing 2018 course taught by Gulati).

⁷² Katia Porzecanski, *New Venezuela Creditor Group Emerges to Tackle Defaulted Debt*, BLOOMBERG (May 31, 2018, 2:38 PM), <https://www.bloomberg.com/news/articles/2018-05-31/new-venezuela-creditors-group-emerges-to-tackle-defaulted-debt>. That rumor turned to reality when 25% of the holders of the bond demanded that payments be accelerated. See Micah Maidenbergl & Julie Wernau, *Venezuela Is Pushed to Pay Off 2034 Debt*, WALL STREET J., Dec. 18, 2018, at B10.

⁷³ A complication we faced here was that the late January 2018 rumor took place in a time period outside of our data sample, which ended on December 15, 2017. Ordinarily, it would have been a simple matter to extend our full dataset into early 2018. However, because this

rumors may have affected market yields prior to the public announcement of the rumors. Figure 7 depicts the difference between the yield for the rumor bond and the mean yield for the comparison bonds (a positive yield difference indicates that the market prices the rumor bond with a higher yield compared with the comparison bonds).

Figure 7. Difference in Yields Between 85% (Rumor Bond) and Comparison Bonds Centered on Week of January 29, 2016.



85% (Rumor Bond) = 9.375% Jan 2034-85% and Comparison Bonds = Mean of 9.25% May 2028-75% and 9.25% Sep 2027-100%.

Note from Figure 7 that the rumor bond starts with a higher yield than the comparison bonds at -4 weeks, indicating that the rumor views the rumor bond as riskier than the comparison bond. However, starting at -2 weeks, the yields flip and the rumor bond yield shifts to below the yield of the comparison bonds. This reversal is consistent with the market pricing-in the information regarding

was also roughly the time at which Venezuela went into full default on almost all of its bonds, the key data sources, such as Datastream, began reporting pricing data in a different form than they had been using previously (specifically, consolidating the prices of bonds traded under the Rule 144A and the Regulation S exemptions). The change in data format made it difficult to compare yield data from before and after the format change. Consequently, we looked at the relative comparison of yields for the -4-week to +4-week period for the rumor bond and two comparison bonds (during which there was no format change for the three bonds), and we did not extend our full sample tests past December 15, 2017.

activist creditors in the rumor bond, which would increase the risk of a holdout relative to other bonds irrespective of the formal voting thresholds. This increased holdout risk makes the rumor bond more valuable to investors, diminishing the relative yield of the rumor bond. This supports the collective action story that although the market does not generally price differences in terms that require collective action for enforcement, the market does price credible information about the presence of activists in particular bonds that suggests coordination is underway.

IV. INVESTOR PERSPECTIVES

After we had developed initial empirical results and formulated our hypotheses, we solicited comments from a number of investors in Venezuelan bonds during the period from February 2018 through May 2018. We were interested in the perspectives of parties who were engaged in buying and selling—and thus setting the price of—Venezuelan bonds. We spoke to executives at twenty-four firms in the United States and Europe that we had met in the context of group discussions relating to a possible future Venezuelan debt restructuring.⁷⁴ For twenty of the firms, we spoke to respondents in person at their offices. In sum, we spoke to over fifty executives at the twenty-four firms. Below, we report on what we heard in response to the empirical findings and our collective action hypothesis.

The most frequent response to the finding that the various voting thresholds had no price effect was that it was too early to tell whether any effects would emerge. Consistent with the collective action story, these respondents believed that price differences among bonds might well appear, but that those differentials would depend on the likelihood of a holdout, which could not be assessed by the bondholders until later in the process.

To be sure, at the time we were asking for comments Venezuela was in technical default and had been for some months. But, we were told, the relevant event leading to the repricing of the holdout risk of different collective action terms is when the “real money” investors exit the market and the litigation hedge funds enter.⁷⁵ These activist creditors are reputed to read the contract terms carefully and are willing to pay for the value that strong contract rights produce in enabling holdout litigation. And that, according to these respondents, had not yet happened in the data period we were examining.

Indeed, according to some, the foregoing would likely play out only after an initial restructuring had occurred and the litigation-oriented funds had initiated legal action. At that stage, and only then, would the balance of the market be

⁷⁴ The four meetings were: (1) the World Bank/IMF annual meetings (for Deutsche Bank), (2) Nomura Capital in New York, (3) JP Morgan in New York, and (4) a Duke-UNC conference on Venezuelan debt. They were all attended by Professor Gulati.

⁷⁵ “Real money” refers to the type of investors (usually large ones) who measure their performance vis-à-vis the index—in this case, the JP Morgan Emerging Market Index. See Richard Rosen, *Using Benchmarks in Investing*, INVESTOPEDIA (May 21, 2019), <https://www.investopedia.com/articles/investing/032516/how-use-benchmark-evaluate-portfolio.asp> [https://perma.cc/6GR2-FFYX].

able to determine which bonds were being targeted by the holdouts and which contract terms were the basis of their litigation claims.

A manager at a midsized, Boston-based fund explained:

[What we do is] different from what [either] Aurelius or Elliott [(two litigation specialist hedge funds) does]. Their specialty is holding out and litigating . . . [T]hey read the fine print with a magnifying glass and they sue the hell out of everyone. But we can't play that game.

We don't know how and neither our bosses nor our investors want us to. We have compliance departments and we worry about what our investors will think. Green investing is big; they don't like seeing their names in the papers as taking money from starving widows and orphans in some poor country. We are hoping to get a few more coupons on these bonds – we don't need to litigate to make big gains in Venezuela.

We are diversified across the Venezuelan bonds; at least whatever is in the index. We don't try to predict and follow what the hard core funds do. But other smaller funds, that can't litigate themselves, sometimes try to figure that information out and get into the slipstream [of the holdout/litigation specialists].⁷⁶

The second, and related, observation heard from some of the litigation-oriented firms was that an activist creditor cannot tell whether it is worth playing the holdout game until after the restructuring offer has been extended. Often, as in the case of Argentina, Greece, Peru, and others, the sovereign is either deeply in debt or otherwise seeks to impose a substantial haircut on the bondholders.⁷⁷ In that case—and many imagine that Venezuela will be such a case—investors expect that holdouts will ultimately reveal themselves. On the other hand, if the restructuring offer is generous, as it apparently was in the recent workouts of Ukraine and Uruguay, then there is little incentive for anyone to hold out. The potential recovery values from the litigation strategy in that case are too small, and potential activist creditors may not even get involved.

For the Collateral Bond, a default on the bond would mean that the trustee would sell Citgo—an asset that is readily attachable in the United States and likely worth more than the principal amount the bondholders were owed. Our respondents agreed that a bond with collateral that the trustee was obligated to seize and liquidate for investors upon default was clearly more valuable than one without those rights. But they also made an additional point, illustrated by the following quote from a senior manager in the London office of a global asset management firm:

Everyone knows who the biggest holders for the 2020s [the Collateral Bond] are. It is on Bloomberg [because they are required by regulations to disclose their holdings, unlike many of the hedge funds]. You could

⁷⁶ Interview by Mitu Gulati with Boston-based Fund Manager in Bos., Mass. (Apr. 12, 2018).

⁷⁷ See GULATI & SCOTT, *supra* note 6, at 163-78.

interview them [here, in London]. They paid for that collateral; they will [make sure it gets] enforced.⁷⁸

The implication of this observation is that the market will price the value of collective rights to collateral once it learns that an individual creditor with a sufficient holding has leverage over the actions of a third party (the trustee in this case) to ensure the effective enforcement of these rights.

The version of the story from our respondents that mapped most closely onto our collective action story emphasized the difference between investors in the market who are willing to engage in litigating against a sovereign and those who are not. Our respondents believed that, absent information that an activist creditor had built a position in a particular bond and planned to litigate, the market would not price formal differences in collective rights among bonds from the same sovereign. The reason is that no conventional institutional investor will resist a sovereign restructuring by threatening to litigate. This follows from the fact that passive investors are usually precluded by their own investment standards and their market reputation from undertaking a holdout strategy.⁷⁹

A senior manager at one of the largest New York-based funds explained the lack of pricing differences in contract terms in this way: “We don’t litigate, so contract terms don’t matter to us.” We then asked: “Well, you are trying to maximize profits for your clients, so wouldn’t you be able to sell the bonds with the good litigation terms to a potential holdout who will litigate?” This response followed:

It isn’t easy to sell to an Aurelius or Elliott. They don’t announce their strategies ahead of time. And they are not in every bond. They pick their battles and they are . . . secretive . . . you don’t even know what their strategy is. They probably won’t be using *pari passu* anymore. They will find something new

And it is not even clear you want to be in the bonds that they pick, even if you could figure that out. They are willing to wait and litigate for years. They have deep pockets and their own money. Sometimes you can get lucky [if you are in the same bond] But we can’t do that because we don’t know where they are going to be. And maybe we don’t want to. We want a quick settlement . . . and [to] get . . . out. If you are stuck as a small fry in a bond where they have control, you can’t do anything.⁸⁰

⁷⁸ Interview by Mitu Gulati with Senior Fund Manager in London, Eng. (Sept. 7, 2017).

⁷⁹ A recent study of the enforcement of covenant violations in private loan contracts finds that violations are enforced in only a small fraction of cases (11%). Among the factors contributing to the low enforcement are (a) the reluctance of lenders in long-term lending relationships to aggressively enforce covenant breaches and (b) the difficulty of enforcing violations when costly coordination among creditors is required. Andrew Bird et al., *Lender Forbearance 18-20* (June 29, 2017) (unpublished manuscript), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2995224 [<https://perma.cc/ZED5-42V8>].

⁸⁰ Interview by Mitu Gulati with New York-based Senior Fund Manager in N.Y.C., N.Y. (Mar. 7-8, 2018).

CONCLUSION

Our empirical findings support the collective action theory of creditor behavior in multilateral markets. In particular, we find that differences in the enforcement of collective rights in Venezuelan debt contracts are generally not priced, a result inconsistent with the bilateral model of contract-term pricing. By contrast, we find that contract rights where the market expects enforcement—either because the rights are unilateral (i.e., the Hunger Bond) or because a known collectivizing agent exists to trigger collective rights (i.e., the Collateral Bond)—are priced, with stronger rights commanding higher prices.

Our results support the view that the difference between the contract rights that are priced and those that are not is a function of two features: (a) whether the contract rights in question are unilaterally enforceable by an individual bondholder or are collective rights that require activist firms for enforcement and (b) whether the market acquires credible information that activist creditors, who have incentives to remain hidden, are undertaking the coordination necessary to enforce particular collective rights. By focusing on the costs of collective action and the role of the contract arbitrageur in overcoming those costs, we can see the importance of collective action dynamics in understanding and predicting how markets will price differences in contract terms.

Our results also raise normative questions about the role of activist creditors in this and other similar markets.⁸¹ Firms that specialize in the close reading of contract provisions in order to enforce contract rights aggressively often are able to capture rents at the expense of more passive investors, as well as the citizens of the defaulting sovereign state. One welfare justification sometimes given for these rents is that these contract arbitrageurs perform a service by causing the market to price differences in contract rights more efficiently.⁸²

From a welfare perspective, though, the timing of when the rights get priced is critical. In theory, holdout creditors may increase social welfare if their presence and ability to exploit a contractual legal term in the midst of a restructuring reduces the moral-hazard risk of a sovereign adopting budgetary

⁸¹ See generally Choi, Gulati & Scott, *supra* note 5.

⁸² See Paul Singer, Opinion, *Efficient Markets Need Guys Like Me*, WALL STREET J. (Oct. 19, 2017, 7:07 PM), <https://www.wsj.com/articles/efficient-markets-need-guys-like-me-1508454427>; see also GULATI & SCOTT, *supra* note 6, at 163-78. In theory, another welfare justification is that these contract arbitrageurs, by aggressively enforcing contract rights and raising the costs of restructuring the bonds, might help deter moral hazard on the part of the sovereigns—that is, they might help deter too much of a proclivity toward engaging in restructurings. Research on the behavior of sovereign governments in crisis, however, tells us that sovereign debtors are generally too reluctant to default rather than too eager (to quote a recent Brookings report on sovereign restructuring, restructurings are “too little, too late”). BROOKINGS INST., REVISITING SOVEREIGN BANKRUPTCY, at iv, 6, 10-11 (2016), https://www.brookings.edu/wp-content/uploads/2016/06/CIEPR_2013_RevisitingSovereignBankruptcyReport.pdf [<https://perma.cc/U2SJ-EH6H>]; see also Martin Guzman, José Antonio Ocampo & Joseph E. Stiglitz, *Introduction* to TOO LITTLE, TOO LATE: THE QUEST TO RESOLVE SOVEREIGN DEBT CRISES, at xiii, xxi (Martin Guzman, José Antonio Ocampo & Joseph E. Stiglitz eds., 2016).

policies that precipitate a financial crisis in the first place. However, the incentive of sovereigns to adopt contract terms that encourage future holdouts depends on whether such terms are priced at the time of the initial bond offering. If a term that increases the risk of a holdout is not priced, then sovereigns will lack incentives to agree to tough contract terms in exchange for lower interest rates.⁸³ Put another way, without pricing differences in the contract terms, sovereigns will not balance the ex post costs of rent seeking by holdouts against the ex ante benefits from reducing the moral-hazard risk of future defaults.

Our current study suggests that, because of the hidden-holdout problem, contract arbitrageurs can secure rents because market prices adjust very slowly or not at all. At a minimum, this points to a regressive wealth redistribution with few efficiency gains.⁸⁴ How and whether the official sector should seek to regulate this activity remain open questions that are worth exploring.

⁸³ One response is that adopting a unilateral action clause is still available to the sovereign seeking to obtain a favorable pricing adjustment when offering bonds. However, unilateral action clauses come at the cost of making favorable ex post restructurings difficult, and they may not be value-maximizing as a result. In addition, as we discuss in the text, unilateral action clauses themselves may require some degree of action on the part of a contract arbitrageur in litigating the clauses in court. The presence of this contract arbitrageur may not be predictable at the time of the bond offering, leading again to a lack of market pricing.

⁸⁴ See generally Kahan & Rock, *supra* note 8 (suggesting inefficiencies resulting from activist investing in corporate bond markets). But see Jared A. Ellias, *Do Activist Investors Constrain Managerial Moral Hazard in Chapter 11?: Evidence from Junior Activist Investing*, 8 J. LEGAL ANALYSIS 493, 502 (2016) (suggesting some value added from activist investors in constraining manager misbehavior in bankruptcy).