

Fall 2016

## Collective Action Clauses & Corporate Bond Spreads: Evidence from Chile

Carlos Berdejó

Follow this and additional works at: <http://scholarlycommons.law.northwestern.edu/njilb>

---

### Recommended Citation

Carlos Berdejó, *Collective Action Clauses & Corporate Bond Spreads: Evidence from Chile*, 36 NW. J. INT'L L. & BUS. 469 (2016).  
<http://scholarlycommons.law.northwestern.edu/njilb/vol36/iss3/1>

This Article is brought to you for free and open access by Northwestern University School of Law Scholarly Commons. It has been accepted for inclusion in Northwestern Journal of International Law & Business by an authorized editor of Northwestern University School of Law Scholarly Commons.

## Collective Action Clauses & Corporate Bond Spreads: Evidence from Chile

*Carlos Berdejó* \*

*Abstract: The use of collective action clauses (CACs) in public bonds has received significant attention in academic and policy circles in recent years. While the existing literature suggests that market participants in sovereign and corporate bond markets often opt to include CACs when allowed under the applicable governing law, whether CACs create or destroy economic value is an open question. Notably, the studies examining the value of CACs have largely focused on sovereign bonds, devoting minor attention to public corporate debt, a gap in the literature which this Article addresses.*

*This Article assesses the value of CACs by exploiting a recent reform in the legal regime governing CACs in Chile, wherein previously banned CACs are now allowed in public corporate debt. Interest rate spreads for bonds issued with a CAC after the reform are on average 20% lower than those of bonds that do not include such clauses. The average effect, 28.5 basis points, translates to annual savings of over U.S. \$415,000, which add up to approximately U.S. \$6.0 million during the course of the life of the average bond. This finding is robust to controlling for various issuer characteristics and is replicated in specifications that include issuer fixed effects, confirming that these results are not driven by unobservable issuer characteristics. The analyses also suggest that including a CAC can potentially benefit all issuers regardless of their creditworthiness, a result contrary to earlier studies in this area.*

*These findings provide a positive assessment of the recent legal reforms in Chile and, most importantly, strengthen the case for repealing the longstanding prohibition on CACs in public corporate debt issued under U.S. law. The experience in Chile suggests that repealing this ban on CACs would result in lower interest rates, substantially reducing the cost of capital for U.S. corporations, the vast majority of which primarily rely on the bond markets to conduct their financing activities.*

---

\* Professor, Loyola Law School, Los Angeles. I want to thank Brian Broughman, Michael Guttentag, Therese Maynard, Elizabeth Pollman, Mark Roe, Kathryn Spier, Matias Zegers and participants at the 2015 Conference on Empirical Legal Studies and the 2015 Conference of the Latin American and Iberian Law and Economics Association for their thoughtful comments on earlier drafts. Any errors are my own.

TABLE OF CONTENTS

I. Introduction .....	470
II. The Law and Economics of CACs.....	474
A. Financial Distress and CACs .....	474
B. CACs and the Cost of Capital .....	480
III. Overview of Chilean Law & The Dataset .....	485
A. The Chilean Legal Regime and Reform .....	485
B. Description of the Data .....	487
IV. Empirical Results .....	488
A. Assessing the Value of CACs.....	488
1. CACs and Interest Rate Spreads .....	488
2. Correcting for Endogeneity .....	496
3. CACs and Restrictive Covenants .....	500
B. CACs & Issuer Credit Rating.....	503
V. Conclusion .....	507

I. INTRODUCTION

The use of collective action clauses (CACs) in public bonds has received considerable attention in academic, practitioner and policy circles in recent years.<sup>1</sup> In Europe, the Greek debt crisis highlighted the important role that CACs can play in the restructuring of sovereign debt.<sup>2</sup> A series of similar crises in the sovereign debt markets during the mid and late 1990's spurred the adoption of CACs in sovereign debt governed by New York law.<sup>3</sup> These experiences in the sovereign debt markets also left their mark in the corporate bond markets. Countries that previously banned the use of CACs in corporate debt, such as Chile and Germany, have recently enacted reforms to allow the inclusion of these clauses, moves that have been welcomed by market participants.<sup>4</sup> In the United States, one of the few

---

<sup>1</sup> See, e.g., Marc M. Rossell, *Can Collective Action Clauses Migrate to the Latam Corporate Bond Market?*, 18 *LATIN AM. L. & BUS. R.*, no. 12, Dec. 2010, at 1; W. Mark C. Weidermaier & Mitu Gulati, *A People's History of Collective Action Clauses*, 54 *VA. J. INT'L L.* 51, 52–55 (2013); Elaine Moore, *IMF Recommends Overhaul of Sovereign Bonds*, *FIN. TIMES* (Oct. 6, 2014, 3:23 PM), <http://on.ft.com/1sZlpc1>.

<sup>2</sup> See Jeromin Zettelmeyer, Christoph Trebesch and Mitu Gulati, *The Greek Debt Restructuring: An Autopsy* (Peterson Inst. For Int'l Econ. Working Paper No. 13-8, 2013), <http://www.iie.com/publications/wp/wp13-8.pdf>.

<sup>3</sup> See *infra* note 64 and accompanying text.

<sup>4</sup> See *infra* notes 86–89 and accompanying text (discussing the German reform) and notes 80–83 and accompanying text (discussing the Chilean reform).

countries that still ban the use of CACs in corporate debt, the prohibition of CACs has long been the subject of continuous scrutiny.<sup>5</sup>

A CAC allows a qualifying majority of bondholders to approve changes to the original core terms of an outstanding bond issue (such as the interest rate, maturity and principal amount) in a manner that binds all bondholders.<sup>6</sup> One of the economic rationales for including such a provision is to facilitate renegotiations between the issuer and bondholders in the event that the issuer later needs to restructure its debt in order to manage financial distress.<sup>7</sup> In such an event, individual creditors may find it in their own interest not to participate in a proposed restructuring, while hoping that a sufficient number of their fellow creditors will do so, thus ensuring that the issuer survives and allowing the holdout creditor to receive payment of her claim in full.<sup>8</sup> The problem, of course, is that if enough creditors follow such a strategy, the proposed workout will fail.<sup>9</sup> By making a workout proposal approved by a qualified majority of bondholders binding on dissenting bondholders, CACs serve as an *ex-ante* contractual solution to this holdout problem.<sup>10</sup>

While the existing evidence suggests that market participants in both sovereign and corporate bond markets often opt to include CACs when allowed to do so, the question of whether such provisions create or destroy economic value is still an open one.<sup>11</sup> Existing research examining this question has been inconclusive: while some studies have found that the inclusion of CACs is associated with lower interest rates, other studies have found no such relationship or have found such relationship to exist only for a subset of issuers. Moreover, the vast majority of these studies suffer a key methodological flaw—they do not review the underlying contractual documents to determine the presence of a CAC, relying instead on the governing law of the instrument as a proxy.<sup>12</sup> In addition, these studies have largely focused on sovereign debt, devoting little to no attention to corporate bonds.<sup>13</sup>

This Article provides an empirical assessment of the value of CACs by examining the recent experience in the Chilean corporate bond market.<sup>14</sup> Chile previously had a legal regime similar to that which currently exists in the United States, wherein CACs were effectively banned in most corporate

---

<sup>5</sup> See *infra* notes 41–48 and accompanying text.

<sup>6</sup> See *infra* notes 36–37 and accompanying text.

<sup>7</sup> See *infra* notes 38–39 and accompanying text.

<sup>8</sup> See *infra* note 32 and accompanying text.

<sup>9</sup> See *infra* note 33 and accompanying text.

<sup>10</sup> See *infra* notes 35–36 and accompanying text.

<sup>11</sup> See *infra* Part II.B.

<sup>12</sup> See *infra* notes 59–67 and accompanying text.

<sup>13</sup> See *infra* notes 68–71 and accompanying text.

<sup>14</sup> See *infra* Part III.A.

bond issues.<sup>15</sup> In 2007, Chilean law was reformed to enable contracting parties to include CACs in bond indentures and to select the qualifying majority that may authorize changes to the core terms, provided that such majority is greater than 75% of the aggregate principal amount of the bonds outstanding.<sup>16</sup> These reforms to Chile's legal regime governing CACs present a unique opportunity to assess the economic value of CACs in the context of corporate debt.

To conduct my analyses, I constructed a hand-collected dataset of 195 Chilean corporate bonds issued between January 1, 2005 and December 31, 2013.<sup>17</sup> For each issue I reviewed the prospectus and corresponding indenture to gather information about the issuer, the offering, and the contractual terms governing the bonds and further complemented this data with financial information filed by issuers with Chilean regulatory bodies. Overall, the results indicate that the Chilean legal reform has yielded measurable economic benefits. Bonds issued with a CAC after the reform have spreads that are, on average, 20% lower than those bond issues that do not include such clauses.<sup>18</sup> The average effect, 28.5 basis points, translates to annual interest savings of over U.S. \$415,000 for the average bond offering (approximately U.S. \$145 million in aggregate principal amount) which, over the course of fourteen years (the average maturity in the sample), add up to approximately U.S. \$6.0 million. This main result is robust to including controls for an issuer's size, credit rating, capital structure, as well as the bond issue's offering size, year, and maturity.<sup>19</sup> Specifications that include issuer fixed effects confirm that these results are not driven by unobservable variables.<sup>20</sup> In addition, the analyses suggest that adopting a CAC can potentially benefit all issuers regardless of their credit rating, a result contrary to earlier studies in this area.<sup>21</sup>

The existence of a negative correlation between the inclusion of a CAC and the interest rate of the corresponding bond indicates that issuers and investors are adopting these clauses in transactions where their inclusion results in optimal, more efficient arrangements that create economic value. Such a finding informs a number of ongoing debates surrounding the use of CACs. First, it provides a positive assessment of the recent legal reforms in Chile and Germany, which repealed statutory prohibitions on the use of CACs in corporate debt. More generally, the

---

<sup>15</sup> See *infra* notes 79–81 and accompanying text.

<sup>16</sup> See *infra* notes 82–83 and accompanying text.

<sup>17</sup> For a description of the dataset see *infra* Part III.B.

<sup>18</sup> See *infra* Part IV.A.1.

<sup>19</sup> See *infra* Part IV.A.1. In addition, the restrictive financial covenants contained in the indentures governing bonds that contain CACs and those that do not contain CACs are strikingly similar. See *infra* Part IV.A.3.

<sup>20</sup> See *infra* Part IV.A.2.

<sup>21</sup> See *infra* Part IV.B.

results suggest that corporate issuers and investors should strongly consider including CACs in the instruments governing their bonds when allowed to do so by applicable law and providing additional support for the inclusion of CACs in sovereign debt, an issue that has recently received much attention.<sup>22</sup>

From a policy perspective, the experience in Chile strengthens the case for repealing the longstanding ban on CACs in public corporate debt issued under U.S. law.<sup>23</sup> The critical role played by the bond market for corporate U.S. issuers cannot be understated—on average, corporations issue over \$1 trillion in bonds each year, seven times the amount raised by these entities through the issuance of common stock.<sup>24</sup> Repealing the ban on CACs would result in lower interest rates, thereby reducing the cost of capital for issuers, the vast majority of which primarily rely on the bond markets to conduct their financing activities.<sup>25</sup>

---

<sup>22</sup> In Europe, for example, under the terms of the Treaty on the European Stability Mechanism, all sovereign bonds issued after January 1, 2013 must include a CAC. See Christian Hofmann, *Sovereign-Debt Restructuring in Europe Under the New Model Collective Action Clauses*, 49 TEX. INT'L L.J. 385, 393 (2014).

<sup>23</sup> See *infra* notes 61–62 and accompanying text.

<sup>24</sup> For the years 2012 through 2014, U.S. corporations issued approximately \$3.9 trillion in bonds, seven times the amount of stock issued by these entities. See BD. OF GOVERNORS OF THE FED. RES. SYS., *New Security Issues, U.S. Corporations*, (Dec. 28, 2015), <http://www.federalreserve.gov/econresdata/releases/corpsecure/corpsecure20151231.htm>.

<sup>25</sup> There are various caveats to transplanting lessons drawn from the experience in Chile to the United States given the distinguishing features in the legal and institutional frameworks that govern the corporate bond markets in these two countries. It is not clear, however, how these differing features would affect the value of including a CAC. For example, one may expect the effectiveness and efficiency of bankruptcy laws to affect parties' preferences regarding the inclusion of a CAC, as well as the values of these clauses. Cross-country surveys and studies have found the Chilean bankruptcy system to be less efficient than the U.S. system, ranking the bankruptcy system of Chile at 102, respectively, while the United States is ranked at 17. See World Bank Group, *Resolving Insolvency, DOING BUSINESS* (June 2015), <http://www.doingbusiness.org/data/exploretopics/resolving-insolvency>. In fact, in order to improve the efficiency of its bankruptcy system, Chile recently enacted a new insolvency law that became effective on October 2014. Law No. 20720, Octubre 10, 2014, DIARIO OFICIAL [D.O.] (Chile). For a description of Law No. 20720, see Pedro A. Jimenez, Rodolfo Pittaluga Jr. & Pablo Herrera, *Chile's New Insolvency Law: Restructured for Corporate Restructurings*, INSOL INT'L SPECIAL REPORT (Oct. 2014), [https://www.insol.org/\\_files/TechnicalSeries/Special%20Reports/Special%20Report%20on%20Chile%20-%202026%20September%202014.pdf](https://www.insol.org/_files/TechnicalSeries/Special%20Reports/Special%20Report%20on%20Chile%20-%202026%20September%202014.pdf). The fact that the Chilean bankruptcy system is less efficient than the U.S. system suggests that avoiding bankruptcy and its related costs (one of the benefits associated with CACs) should be more valuable in Chile than in the United States. See *infra* Part IV.A Another distinguishing feature can be the size and depth of the corporate bond markets. Less liquid capital markets in developing economies may be characterized by higher concentrations of bond ownership. And if ownership concentration is too high, then a single bondholder could in effect possess a veto power, thus frustrating the purpose of a CAC. This is probably not a major concern in Chile, where qualifying majorities in CACs have been set by parties at 75%, thus making a 25% ownership of the entire bond issue necessary to have such a veto power. See *infra* note 102. The fact that Chilean corporate bonds may be characterized by higher levels of ownership concentration than those bonds issued by U.S. companies, suggests that the value of a CAC (which facilitate coordination among

The Article proceeds as follows. Part II provides an overview of the nature of CACs and the reasons why contracting parties may or may not choose to adopt these in their agreements. Part III provides an overview of the Chilean legal framework governing the use of CACs and the recent reforms. A description of the data and the empirical analyses are presented in Part IV. Part V discusses the general implications of these findings and concludes.

## II. THE LAW AND ECONOMICS OF CACS

### A. Financial Distress and CACS

When an issuer faces financial distress and is unable to meet its debt obligations, an orderly restructuring of its outstanding liabilities may become necessary to avoid a default. Under these circumstances, a speedy and efficient restructuring process better serves issuers and their investors. For corporate issuers, a country's bankruptcy system often provides a last-resort court-administered framework for firms to restructure their debt and continue their operations.<sup>26</sup> In general, reorganizations of major public companies in bankruptcy court entail expensive and lengthy proceedings, which may, in some cases, exacerbate the costs of financial distress and destroy firm value.<sup>27</sup> The general drawbacks and inefficiencies associated with bankruptcy proceedings have been extensively examined in academic literature.<sup>28</sup>

---

dispersed investors) is likely to be lower in Chile than in the United States. *See infra* Part IV.A

<sup>26</sup> In the United States, Chapter 11 of the U.S. Bankruptcy Code provides such a court-administered framework. *See, e.g.*, Lynn M. LoPucki & William C. Whitford, *Corporate Governance in the Bankruptcy Reorganization of Large, Publicly Held Companies*, 141 U. PA. L. REV. 669, 677 (1993). In Chile, Law No. 20720 provides the framework for that country's bankruptcy regime. *See supra* note 25.

<sup>27</sup> Estimates of the average length of bankruptcy reorganization proceedings in the United States range from fourteen to twenty-nine months. *See, e.g.*, Vicki L. Bogan & Chad M. Sandler, *Are Firms on the Right Page with Chapter 11? An Analysis of Firm Choices that Contribute to Post-Bankruptcy Survival*, 19 APPLIED ECON. LETTERS 609, 612 (2012) (providing an estimate of between 14 and 16 months); Arturo Bris, Ivo Welch & Ning Zhu, *The Costs of Bankruptcy: Chapter 7 Liquidation versus Chapter 11 Reorganization*, 61 J. FIN. 1253, 1270 (2006) (providing an estimate of between twenty-eight and twenty-nine months); Diane K. Denis & Kimberly J. Rodgers, *Chapter 11: Duration, Outcome and Post-Reorganization Performance*, 42 J. FIN. & QUANTITATIVE ANALYSIS 101, 105 (2007) (providing an estimate of between eighteen and twenty-two months). Estimates of direct, court declared expenses, such as professional legal costs, range from 1.4% to 1.9% of the debtor's pre-bankruptcy assets. *See, e.g.*, Bris et. al, *supra* at 1279 (providing an estimate of 1.9%); Lynn M. LoPucki and Joseph W. Doherty, *The Determinants of Professional Fees in Large Bankruptcy Reorganization Cases*, 1 J. EMPIRICAL LEGAL STUD. 111, 113 (2004) (providing an estimate of 1.4%); Stephen J. Lubben, *The Direct Costs of Corporate Reorganization: An Empirical Examination of Professional Fees in Large Chapter 11 Cases*, 74 AM. BANKR. L. J. 509, 540 (2000) (providing an estimate of 1.8%); Stephen J. Lubben, *Corporate Reorganization and Professional Fees*, 82 AM. BANKR. L. J. 77, 78 (2008) (providing an estimate of 1.8%).

<sup>28</sup> *See generally*, Douglas G. Baird, *The Uneasy Case for Corporate Reorganizations*, 15 J. LEGAL

Out of court, privately negotiated restructurings offer a less expensive and more efficient alternative relative to bankruptcy proceedings.<sup>29</sup> In a privately negotiated restructuring, or workout, creditors may extend the maturity date, forgive interest payments, or exchange their debt claims for an equity stake in the issuer. To the extent that they are more efficient than court administered bankruptcy proceedings, workouts can reduce the costs of financial distress, better preserving the value of a financially distressed, but otherwise economically viable, company.<sup>30</sup> Empirically, the question of whether such private renegotiations are more efficient and effective than bankruptcy proceedings is an open one. A number of studies have found that workout offers from insolvent firms succeed less than 50% of the time<sup>31</sup> and that corporations in serious financial distress appear to enter

---

STUD. 127 (1986); Michael Bradley & Michael Rosenzweig, *The Untenable Case for Chapter 11*, 101 YALE L. J. 1043 (1992); Harvey R. Miller & Shai Y. Waisman, *Does Chapter 11 Reorganization Remain A Viable Option for Distressed Businesses for the Twenty-First Century?*, 78 AM. BANKR. L. J. 153 (2004).

<sup>29</sup> See, e.g., Conrad B. Duberstein, *Out-of-Court Workouts*, 1 AM. BANKR. INST. L. REV. 347, 347–48 (1993) (arguing that an out-of-court workout can avoid the costs, delay, and aggravation of a litigious Chapter 11); Stuart C. Gilson, Kose John and Larry H.P. Lang, *Troubled Debt Restructurings: An Empirical Study of Private Reorganizations of Firms in Default*, 27 J. FIN. ECON. 315, 319 (1990) (positing that the direct costs of Chapter 11 are higher than the direct costs of private negotiation because the complexity and procedural demands of Chapter 11 increase attorneys' fees and other indirect costs such as management time devoted to restructuring); Bettina M. Whyte & Patricia D. Tilton, *Turnarounds: Pursuing a Dual Path*, 14 AM. BANKR. INST. J. 28, 28 (1995) (stating that out-of-court workouts preferable to Chapter 11 proceedings due to the latter's cost, image, drain on resources, and impact on morale, among other factors). See also Frank H. Easterbrook, *Is Corporate Bankruptcy Efficient?*, 27 J. FIN. ECON. 411, 415 (1990); LoPucki & Whitford, *supra* note 26, at 677; John McConnell & Henri Servaes, *The Economics of Pre-Packaged Bankruptcy*, in CORPORATE BANKRUPTCY: ECONOMIC AND LEGAL PERSPECTIVES 322, 322 (Jagdeep S. Bhandari & Lawrence A. Weiss eds., 1996).

<sup>30</sup> See Julian R. Franks and Walter N. Torous, *A Comparison of Financial Recontracting in Distressed Exchanges and Chapter 11 Reorganizations*, 35 J. FIN. ECON. 349, 355 (1994) (“Distressed exchanges require significantly less time than Chapter 11 reorganizations: a median workout period of seventeen months, compared with a median of twenty-seven months for Chapter 11 reorganizations.”); Stuart C. Gilson, *Managing Default: Some Evidence on How Firms Choose Between Workouts and Chapter 11*, in CORPORATE BANKRUPTCY: ECONOMIC AND LEGAL PERSPECTIVES 308, 319 (J. Bhandari ed., 1996) (“[d]istressed firms can preserve more of their value by restructuring their debt privately,” and “the professional fees incurred in exchange offers are about one-tenth of those incurred in a typical chapter 11 case”); Karen H. Wruck, *Financial Distress, Reorganization and Organizational Efficiency*, 27 J. FIN. ECON. 419, 436 (1990) (estimating out of pocket costs of restructuring to be about ten times lower in private workouts relative to bankruptcy proceedings). Even Bankruptcy courts have long recognized the advantages of private workouts. See, e.g., *In re Colonial Ford, Inc.*, 24 B.R. 1014, 1014–16 (Bankr. D. Utah 1982) (listing the advantages of out-of-court workouts relative to bankruptcy proceedings).

<sup>31</sup> See Franks & Touros, *supra* note 30, at 358 (“These firm recovery rates are significantly smaller in Chapter 11 reorganizations, a median of 50.9%, than in distressed exchanges, with a median of 80.1% . indicating that Chapter 11 firms are far less solvent at the end of reorganizations than firms which restructure their debt privately.”); Robert Gertner & David Sharfstein, *A Theory of Workouts and the Effects of Reorganization Law*, 46 J. FIN. 1189, 1191 (1991) (showing initial settlement rates of 73 out

bankruptcy proceedings without attempting a private workout.<sup>32</sup>

Various hurdles may hinder the ability of issuers and bondholders to successfully implement a private, out-of-court workout. An efficient workout proposal may not be successfully implemented if a number of creditors opportunistically opt to stay out of the workout arrangement.<sup>33</sup> Such “holdout” bondholder hopes to profit from the willingness of the non-holdout bondholders to compromise with the issuer, by letting the latter bear the expense of financing the survival of the issuer (e.g., by extending the maturity or agreeing to a principal reduction) while demanding it be paid under the original, more favorable terms.<sup>34</sup> Even though each creditor by itself is not individually critical for the success of a workout, a substantial number of holdouts may collectively dissuade other creditors from agreeing to participate in an otherwise efficient and desirable workout proposal.<sup>35</sup> And, if enough bondholders refuse to cooperate in response to

---

of 156 for junk bond issues); Stuart C. Gilson, *Bankruptcy, Boards, Banks, and Blockholders: Evidence on Changes in Corporate Ownership and Control When Firms Default*, 27 J. FIN. ECON. 355, 356 (1990) (showing private debt restructuring of 50 out of 111 publicly traded companies that experienced financial distress); Gilson et al., *supra* note 29, at 326 (showing private restructurings for 80 public companies out of sample of 169 that experienced financial distress).

<sup>32</sup> See Lynn M. Lopucki, *The Debtor in Full Control: Systems Failure Under Chapter 11 of the Bankruptcy Code?*, 57 AM. BANKR. L. J. 99, 116 (1983) (noting that none of forty-eight bankrupt companies analyzed in a study had attempted workouts) and J. Bradley Johnston, *The Bankruptcy Bargain: National Conference of Bankruptcy Judges*, 65 AM. BANKR. L. J. 213, 232 (1991) (noting that workouts are generally not attempted by firms that later file for bankruptcy).

<sup>33</sup> See Gertner & Scharfstein, *supra* note 31, at 1191 (“[creditors] with small stakes have an incentive to hold out”); Mark J. Roe, *The Voting Prohibition in Bond Workouts*, 97 YALE L. J. 232, 236 (1987) (noting that the buoy-up effect for the holdouts causes workout attempts to fail); see also Gilson, *supra* note 31, at 316; Alan Schwartz, *Bankruptcy Workouts and Debt Contracts*, 36 J. L. & ECON. 595, 596 (1993).

<sup>34</sup> Consider, as an illustration, a series of bonds with \$100 million aggregate principal amount outstanding which mature in one year. The financially distressed issuer knows that it will be unable to repay the principal in a timely manner and has proposed a restructuring in which investors would exchange their existing bonds for a new series of bonds which mature in two years and which will bear a lower principal amount (e.g., each old bond with \$1,000 face value would be exchanged for a new bond with \$800 face value). If the firm is able to restructure at least 90% of the outstanding bonds in this manner it will survive; however, if the restructuring fails, it will seek bankruptcy protection and bondholders will receive fifty cents on the dollar (i.e., \$500 for each bond worth \$1,000 face value). Given this scenario, a single bondholder that owns \$1 million in aggregate principal amount of the distressed bonds is likely to reject the exchange. If it agrees and the restructuring is successful he receives \$800,000 million repayment in full in a year; while if the restructuring fails it receives \$500,000. However, if he rejects the proposal and the restructuring is successful he receives his \$1 million repayment in full; while if the restructuring fails he receives \$500,000.

<sup>35</sup> This results from the fact that the exchanging bondholders might be made worse off, since they help assure (and effectively fund) payment to the holdouts. If the resulting subsidy to the non-exchanging bondholders is greater than their savings in avoided bankruptcy costs, each bondholder is better off refusing to participate, but still better off if all participated. See Roe, *supra* note 33, at 279. This problem can be exacerbated by specialized hedge funds that purchase bonds on the secondary market after the onset of distress at a deep discount and then play non-cooperatively to extract further concessions from the issuer, thus increasing the potential subsidy to holdouts and endangering the

the incentives of some to hold out, the workout proposal will ultimately fail.

Including a CAC in the debt agreement between the issuer and bondholders is one possible ex-ante contractual response to the holdout problem. CACs allow a qualifying majority of the bondholders (excluding securities held by the issuer or its insiders) to consent to modifications to the core provisions of the terms and conditions of a bond issue (such as the maturity, interest, principal) in a manner that is binding on all bondholders, including dissenting ones.<sup>36</sup> This voting mechanism can help solve the holdout problem—a qualified majority vote that is binding on all bondholders, reassures each and every individual bondholder that if it consents to the terms of a proposed workout, others will not profit at the consenting bondholder's expense by holding out.<sup>37</sup>

By deterring selfish, strategic behavior by holdout investors and facilitating the coordination of dispersed bondholders willing to participate in a workout, CACs can lead to welfare gains and enhance value in post-default scenarios.<sup>38</sup> However, even if CACs are indeed optimal conditional on default, it does not necessarily follow that the adoption of these clauses maximizes the *ex-ante* contracting surplus. To the extent they reduce the costs associated with financial distress, the inclusion of CACs may create perverse incentives for the issuer, potentially incentivizing it to opportunistically engage in more risky behavior, which may very well

---

success of the exchange offer. See John C. Coffee & William A. Klein, *Bondholder Coercion: The Problem of Constrained Choice in Debt Tender Offers and Recapitalizations*, 58 U. CHI. L. REV. 1207, 1207–14 (1991). In the sovereign debt markets, these hedge funds have played a key role in the ongoing saga of the restructuring of Argentina's debt. See Benedict Mander, *Cristina Fernández Holds out for Victory in Debt Battle*, FIN. TIMES (Mar. 30, 2015, 2:21 PM), <http://on.ft.com/1xsSEZA>.

<sup>36</sup> See Marcel Kahan, *Rethinking Corporate Bonds: The Trade-Off Between Individual and Collective Rights*, 77 N.Y.U. L. REV. 1040, 1054–56 (2002) (describing the holdout problem and noting that holding out is not possible when a majority of bondholders can bind dissenting bondholders to a restructuring plan).

<sup>37</sup> See Gertner & Scharfstein, *supra* note 31, at 1211 (arguing that these types of voting procedure can help issuers and investors “get around the holdout . problem”); Robert K. Rasmussen & Randall S. Thomas, *Timing Matters: Promoting Forum Shopping by Insolvent Corporations*, 94 NW. U. L. REV. 1357, 1374 (2000) (noting that the inability to bind dissenting creditors which creates holdout problems in out-of-court workouts is critical difference between out-of-court restructuring and Chapter 11).

<sup>38</sup> See, e.g., Jeremy I. Bulow and Kenneth Rogoff, *A Constant Recontracting Model of Sovereign Debt*, 97 J. POL. ECON. 155–78 (1989); Kenneth M. Kletzer, *Sovereign Bond Restructuring: Collective Action Clauses and Official Crisis Intervention*, in *FIXING FINANCIAL CRISES IN THE 21ST CENTURY* 230, 233 (Andrew G. Haldane ed., 2004) (arguing that CACs improve welfare relative to unanimous consent clauses); Kenneth M. Kletzer and Benjamin D. Wright, *Sovereign Debt as Intertemporal Barter*, 90 AM. ECON. REV. 621–39 (2000). However, it should be noted that this is not necessarily a universally held view. See, e.g., Schwartz, *Bankruptcy Workouts and Debt Contracts*, *supra* note 33, at 597–99 (arguing that CACs may provide insolvent issuers with an incentive to make the least generous credible offer, i.e., in which the firm keeps a large share of the gains, leaving creditors with a smaller share than that implied by the bankruptcy priority order, which may lead to a protracted process of offers and counteroffers).

increase the probability of default.<sup>39</sup> Rational investors who are aware of this moral hazard problem would either demand a unanimous action clause (UAC), which requires that any modification to the core terms of the bond issue be approved by all bondholders, or agree to the inclusion of a CAC together with appropriate compensation for the excess risk in the form of higher interest rates.<sup>40</sup>

For the most part, corporate issuers and investors in the United States are not afforded the flexibility of deciding whether or not to include a CAC in their indenture agreements. The Trust Indenture Act of 1939 (TIA),<sup>41</sup> which governs public issues of debt in the United States, regulates the contractual terms that may be incorporated in an indenture agreement,<sup>42</sup> including those relating to the amendments of the terms and conditions of the bonds.<sup>43</sup> The TIA requires that modifications of core provisions such as the principal balance, interest rate, or the schedule of debt repayments be consented to by each and every single bondholder.<sup>44</sup> As a result, CACs

---

<sup>39</sup> See, e.g., Barry Eichengreen & Ashoka Mody, *Do Collective Action Clauses Raise Borrowing Costs?*, 114 *ECON. J.* 247, 248–49 (2004); Torbjörn Becker, Anthony Richards & Yunyong Thaicharoen, *Bond Restructuring and Moral Hazard: Are Collective Action Clauses Costly?*, 61 *J. INT'L. ECON.* 127, 128 (2003).

<sup>40</sup> Even “high quality” issuers for which this moral hazard problem is minimal may not be willing to propose including a CAC because of the possible adverse signaling effect (i.e., “disclosing” a higher probability of future financial problems and willingness to exploit a CAC mechanism) and the resulting increase in the interest rate. See Kathryn E. Spier, *Incomplete Contracts and Signalling*, 23 *RAND J. ECON.* 432, 439 (1992) (showing that the signaling effect of bargaining proposals is stronger when the proposal is made by a more informed party); Omri Ben-Shahar & John A. E. Pottow, *On the Stickiness of Default Rules*, 33 *FLA. ST. U. L. REV.* 651, 654–57 (2006) (noting that this effect is likely to be stronger in cases where an unfamiliar term being proposed and that opting out proposals are even more suspicious when the default is very common, further weakening the incentive of any party to propose such deviations); Roe, *Voting Prohibition*, *supra* note 33, at 277.

<sup>41</sup> Trust Indenture Act of 1939 §§ 301–302, 15 U.S.C.A. §§ 77aaa–77bbb (West 2016). Offerings exempt under Section 4(a)(2) of the Securities Act of 1933 (Securities Act) and Rule 144A promulgated thereunder are not subject to the TIA. *Id.* § 304(b), § 77ddd(b). In addition, most provisions of the TIA do not apply to a number of other exempt offerings under the Securities Act, such as Section 3(a)(3) commercial paper and bonds issued by sovereign governments. *Id.* § 304(a), § 77ddd(a).

<sup>42</sup> In the United States, public debt offerings in excess of \$10 million require the use of a trust indenture, an agreement between the issuer and a trustee representing the bondholder’s interests. *Id.* §§ 304–305, §§ 77ddd–77eee. For a description of the role played by indentures and the types of provisions contained therein see *infra* notes 139–143 and accompanying text. If the TIA applies to a debt issuance, the governing indenture must be “qualified” with the SEC before any sales of the securities can be made. Trust Indenture Act of 1939 § 306, 15 U.S.C.A. § 77fff (West 2016). As part of this qualification process, various substantive provisions are deemed to be automatically incorporated into the indenture. *Id.* § 318(c), § 77rrr(c).

<sup>43</sup> Generally, non-substantive amendments may be approved by the holders of a majority of the outstanding bonds, or, if required under the terms of the indenture, by a higher majority. *Id.* § 316(a)(1), § 77ppp(a)(1). However, they may not choose a lower one. If they do, the indenture will be automatically qualified as requiring a simple majority. *Id.* If the indenture is silent on this regard, a simple majority is sufficient to authorize such binding amendments. *Id.*

<sup>44</sup> *Id.* § 316(b), § 77ppp(b). This requirement that an indenture may not provide for the amendment

cannot be included in corporate bonds that are publicly issued in the United States, a prohibition that can lead to inefficient and unnecessary bankruptcies, exacerbating as a result the costs of financial distress.<sup>45</sup> Ex ante, the higher expected costs associated with financial distress could be reflected in higher interest rates, which increases the cost of capital for companies. In response to the higher costs that result from this ban on CACs, market participants have strategically developed less efficient and effective alternatives to the privately negotiated workout, such as the exit-consent offer<sup>46</sup> and the pre-packaged bankruptcy.<sup>47</sup> Motivated in great part

---

of any core term by means of a vote of a majority (or super majority) of bondholders is a mandatory rule, which parties cannot agree to modify by a contractual arrangement and that applies despite their desire to contract around it. Section 316(a)(2) of the TIA provides a limited exception, allowing an indenture to contain a provision authorizing the holders of not less than 75% in principal amount to consent on behalf of all holders to the postponement of any interest payment for a period not exceeding three years from its due date. Amendments to non-core terms must be approved by the holders of a majority of the outstanding bonds, unless the terms of the indenture, by a higher majority. *Id.* § 316(a)(1), § 77ppp(a)(1).

<sup>45</sup> See Kahan, *supra* note 36, at 1055–56; Roe, *supra* note 33, at 233, 250–52 (“[F]inancial stress creates problems that current bond regulation exacerbates. . . By prohibiting a binding vote among bondholders, the Trust Indenture Act makes a recapitalization more likely to fail than it would otherwise be.”).

<sup>46</sup> In an exchange offer and consent solicitation, the bondholders that agree to the new proposed core terms consent to an exit amendment stripping certain nonpayment covenants from the governing indenture prior to exchanging their bonds. For a brief description of the role played by indenture covenants in corporate debt see *infra* notes 139–45 and accompanying text. The purpose of the binding amendments authorized by the tendering holders in their exit consents is to reduce the value of the existing bonds that non-tendering holders will continue to own, thus incentivizing all holders to tender (thus agreeing to the amendments). Although exchange offers conditioned on such exit consents have been used as a substitute for CACs, they do not effectively eliminate the holdout problem and their use raises a number of potential problems as they are coercive in nature and could be abused by an issuer. See Antonio E. Bernardo & Eric L. Talley, *Investment Policy and Exit Exchange Offers Within Financially Distressed Firms*, 51 J. FIN. 871, 881 (1996) (arguing that managers, acting strategically on behalf of shareholders, may select inefficient investment projects to enhance their positions against creditors in a debt-for-debt exit exchange exit-consents offer); Gertner & Scharfstein, *supra* note 31, at 1191 (noting that, due to the TIA, public debt restructurings almost always involve an exchange of new securities and cash for the original debt); Roe, *supra* note 33, at 247 (maintaining that an exit consent is not assured of diminishing the buoying-up effect accompanying the holdout problem).

<sup>47</sup> In a prepackaged bankruptcy, the issuer and a majority of bondholders negotiate a restructuring plan prior to the filing of a bankruptcy petition. If an initial attempt to implement such plan fails, those minority holders who did not consent will nonetheless be bound once the bankruptcy court, with the prior approval of two thirds of the bondholders, enters an order binding the entire group to the plan. See 11 U.S.C.A. §§ 1126(c), 1129(a)(8) (West 2016). For an overview of procedures involved in a pre-packaged bankruptcy see Elizabeth Tashjian, Ronald C. Lease & John J. McConell, *Prepacks: An Empirical Analysis of Prepackaged Bankruptcies*, 40 J. FIN. ECON. 135, 137–139 (1996) (generally characterizing pre-packaged bankruptcies as a hybrid form of restructuring with features of a Chapter 11 reorganization and out-of-court workouts). There is evidence that indicates that pre-packaged bankruptcies may be more efficient than bankruptcy proceedings, but less efficient than private workouts. See *id.* at 141–43 (finding that pre-vote prepacks take less time in reorganization and are less costly); GORDON BERMANT, ARLENE JORGENSEN HILLESTAD & AARON KERRY, CHAPTER 11 VENUE CHOICE BY LARGE PUBLIC COMPANIES - REPORT TO THE JUDICIAL CONFERENCE COMMITTEE ON THE

by these increased costs, a number of scholars have called for the repeal of the TIA's prohibition of CACs, arguing that the holdout problem that complicates private workouts and restructurings can be minimized by the inclusion of such clauses in trust indentures.<sup>48</sup>

### B. CACs and the Cost of Capital

Whether the benefits of including a CAC (i.e., quicker and less costly reorganizations that preserve the value of a distressed firm) exceed the potential costs (i.e., the incentive of issuers to take actions that increase the chances of a reorganization becoming necessary or to coerce investors in the course of such reorganization) is likely to hinge on the particular circumstances surrounding a particular bond offering.<sup>49</sup> If the expected efficiencies in future debt restructurings associated with the inclusion of CACs in the indenture governing a bond issue outweigh the associated costs, one could expect to observe a negative correlation between the presence of a CAC and the interest rate demanded by the investors purchasing an issuer's bonds.<sup>50</sup>

Empirical studies examining the relationship between CACs and interest rate spreads have yielded mixed results—while some of these studies have found a price effect associated with the presence of a CAC, others have found little or no impact.<sup>51</sup> In one of the earliest studies, Tsatsaronis found that spreads for sovereign bonds issued under New York law (a proxy for the absence of a CAC) had lower spreads than bonds issued under English law bonds (a proxy for the presence of a CAC),

---

ADMINISTRATION OF THE BANKRUPTCY SYSTEM 39–40 (1997), [http://www.fjc.gov/public/pdf.nsf/lookup/ch11venu.pdf/\\$file/ch11venu.pdf](http://www.fjc.gov/public/pdf.nsf/lookup/ch11venu.pdf/$file/ch11venu.pdf) (noting that the academic consensus is that pre-packaged cases cost more than out-of-court workouts but less than full Chapter 11 cases).

<sup>48</sup> See Carlos Berdejo, *Revisiting the Voting Prohibition in Bond Workouts*, 89 TUL. L. REV. 541, 598–601 (2015) (proposing a rule where the default is a simple majority, but in which parties can contract around this default by selecting a higher threshold in their indentures); Robert A. Haugen & Lemma W. Senbet, *Bankruptcy and Agency Costs: Their Significance to the Theory of Optimal Capital Structure*, 23 J. FIN. & QUANTITATIVE ANALYSIS 27, 30 (1988); Roe, *supra* note 33, at 235, 249, 270–71 (proposing a two-thirds majority voting requirement, excluding insider bonds).

<sup>49</sup> See, e.g., Sayantan Ghosal & Kannika Thampanishvong, *Does Strengthening Collective Action Clauses (CACs) Help?*, 89 J. INT'L ECON. 68, 68–71 (2013).

<sup>50</sup> See William W. Bratton & G. Mitu Gulati, *Sovereign Debt Reform and the Best Interest of Creditors*, 57 VAND. L. REV. 1, 47–48 (2004). The extent to which the interest would decline will depend on the relative bargaining power of the issuer and investors as they share the additional surplus.

<sup>51</sup> See generally Sönke Häsel, *Collective Action Clauses in International Sovereign Bonds - Whence the Opposition?*, 23 J. ECON. SURV. 882 (2009); Sönke Häsel, *Trustees versus Fiscal Agents and Default Risk*, 34 EUR. J. L. ECON. 425 (2012) (conducting a meta-analysis and finding no systematic evidence of either a spread premium or higher actual default rates for bonds with collective enforcement rights).

though the difference was not statistically significant.<sup>52</sup> A different conclusion was reached by Eichengreen and Mody who examined corporate and sovereign emerging market bonds issued under New York and English laws and found that CACs reduced the cost of borrowing for more creditworthy issuers but increased it for less creditworthy issuers.<sup>53</sup> However, Becker *et al.* were unable to document such a relationship between CACs and the creditworthiness of the issuer in their study, finding that bonds issued under English law (presumably containing CACs) were characterized by lower spreads, although this effect was not statistically significant.<sup>54</sup> Similarly, in their empirical work, Gugiatti and Richards concluded that CACs had no economic or statistically significant impact on bond prices and found no significant differences between the yields of low and high rated issuers that adopt CACs.<sup>55</sup> A more recent set of studies by Bradley *et al.* and Bradley and Gulati found that the presence of CACs reduced the spreads of sovereign bonds, and that this reduction was larger for less creditworthy issuers.<sup>56</sup> In another recent study, Bardozzeti and Dottori found that the inclusion of CACs reduced the yields of sovereign issuers with mid-range credit ratings, but had no effect on the yields of the highest or lowest rated issuers.<sup>57</sup>

---

<sup>52</sup> Kostas Tsatsaronis, *The Effect of Collective Action Clauses on Sovereign Bond Spreads*, BIS Q. REV., Nov. 1999, at 22, [www.bis.org/publ/r\\_qt9911.pdf](http://www.bis.org/publ/r_qt9911.pdf) (last visited May 13, 2016).

<sup>53</sup> Barry Eichengreen & Ashoka Mody, *Do Collective Action Clauses Raise Borrowing Costs?*, 114 ECON. J. 247, 249 (2004). To explain this result, the authors argue that while more creditworthy issuers benefit from the ability of being able to conduct a private workout if it became necessary, less creditworthy issuers need a unanimity rule as a commitment device to convince creditors of their willingness to repay and not take unnecessarily risky actions. *Id.*

<sup>54</sup> See Torbjörn Becker, Anthony Richards & Yunyong Thaicharoen, *Bond Restructuring and Moral Hazard: Are Collective Action Clauses Costly?*, 61 J. INT'L. ECON. 127, 158 (2003). While Tsatsaroni and Eichengreen and Mody used launch spread data, Becker *et al.* use secondary market data. Notably, the authors find that the relationship between CACs and spreads vary through time. In their 1998 data, English law bonds command significantly lower yields than bonds governed by other laws, an effect which appears to be entirely driven just by high-rated borrowers; however, in their 2000 data, high-rated borrowers paid a significant yield premium while less creditworthy borrowers were granted a significant discount and overall, there was no significant relationship between the inclusion of a CAC and bond spreads. A subsequent study seeks to explain these inter-temporal differences, arguing that when market sentiment on emerging market debt is poor, all but the most highly rated borrowers are penalized for the use of CACs; but when investors are enthusiastic about emerging markets, CACs reduce spreads for all but the least creditworthy issuers. See Barry J. Eichengreen, Kenneth M. Kletzer & Ashoka Mody, *Crisis Resolution: Next Steps*, 18–24 (Int'l Monetary Fund, Working Paper No. 03-196, 2003).

<sup>55</sup> Mark Gugiatti & Anthony Richards, *Do Collective Action Clauses Influence Bond Yields? New Evidence from Emerging Markets*, 6 INT'L. FIN. 415, 441 (2003).

<sup>56</sup> See Michael Bradley, James D. Cox & Mitu Gulati, *The Market Reaction to Legal Shocks and Their Antidotes: Lessons from the Sovereign Debt Market*, 39 J. LEGAL STUD. 289, 310 (2010); Michael Bradley & Mitu Gulati, *Collective Action Clauses for the Eurozone*, 18 REV. FIN. 2045, 2046 (2014).

<sup>57</sup> See Alfredo Bardozzeti & Davide Dottori, *Collective Action Clauses: How do they Affect Sovereign Bond Yields?*, 92 J. INT'L. FIN. 286, 287 (2014). According to the authors this non-linear relationship is due to the fact that high rated issuers have a low probability of default (thus reducing the

For someone approaching this question from a corporate finance perspective, these studies suffer two key methodological limitations.<sup>58</sup> First, the vast majority of these studies have used the governing law of the bond (namely New York or English law) as a proxy for the presence of a CAC without reviewing the underlying contractual instruments for each bond issue. Thus, the variation used in identifying the effect of CACs came ultimately from variations in the governing law of the instrument, not on the presence of the clause itself.<sup>59</sup> Moreover, the governing law of an instrument is an imperfect proxy for the presence of a CAC. Bonds issued under English law, which traditionally has allowed parties to include CACs, can contain a UAC if they parties so prefer.<sup>60</sup> It is true that traditionally most bonds issued under New York law, including those issued by sovereign and other international borrowers, did not include CACs.<sup>61</sup> However, the TIA ban on CACs does not apply to bonds issued by foreign governments,<sup>62</sup> and bonds issued by foreign corporations are likely to be exempt from this provision of the TIA to the extent that they are not publicly offered in the United States.<sup>63</sup> Thus, the traditional absence of CACs in bonds issued by sovereign and other international borrowers under New York law was the result of a standard developed by the market, which

---

value of an efficient restructuring) and low rated issuers are suspected of moral hazard to a greater degree by the market. *Id.* at 299.

<sup>58</sup> By “corporate finance perspective” I refer to the general goal of this Article, which is to understand how the decision whether or not to include a CAC can affect the cost of capital of companies from the same country that operate under the same set of laws. Gaining such insight is important not just in evaluating the recent reforms in Germany and Chile, which mostly affected public debt issued by corporate issuers in these countries, but also in assessing the economic costs of the existing ban of CACs under U.S. law and the potential benefits from its repeal. *See infra* notes 86–89 and accompanying text (discussing the German reform), *infra* notes 80–83 and accompanying text (discussing the Chilean reform) and *supra* notes 41–48 and accompanying text (describing the existing U.S. legal regime governing the use of CAC in public corporate debt).

<sup>59</sup> This poses a problem insofar as issuers may have differing reasons to choose a given governing law and laws will differ in various dimensions (unrelated to the use CACs) which effect may be confounded with that associated with the adoption of a CAC in any particular transaction. A better empirical strategy would look at a series of bonds governed by the same law but which differ in their adoption of CACs. *See Bradley & Gulati, Collective Action Clauses for the Eurozone, supra* note 56, at 2046, 2073. However, most of this variation in the context of sovereign debt comes from bonds issued under New York law before and after 2003, thus potentially confounding the effects of CACs with cross-sectional time trends in sovereign spreads. *See infra* notes 64 and 67.

<sup>60</sup> *See infra* notes 65–67 and accompanying text.

<sup>61</sup> *See supra* notes 41–48 and accompanying text.

<sup>62</sup> TIA § 304(a)(6) exempts bonds issued by foreign governments from its provision. Trust Indenture Act of 1939 § 304(a)(6), 15 U.S.C.A. § 77ddd(a) (West 2016).

<sup>63</sup> Offerings exempt under Section 4(a)(2) of the Securities Act of 1933 (Securities Act) and Rule 144A promulgated thereunder are not subject to the TIA. *See Id.* § 304(b), § 77ddd(b). For example, Berdejo finds that in a sample of 25 bonds issued by German corporations during the period 2010–2012 under U.S. law that trade on the Luxembourg Stock Exchange, 23 include a CAC. *See Berdejo, supra* note 48 at 570.

in fact recently changed.<sup>64</sup> The importance of this imperfect match between governing law and use or non-use of CACs in sovereign bonds for the interpretation of the results found in the literature is carefully discussed by Gugiatti and Richards.<sup>65</sup> More recent studies examining the impact of CACs have sought to address this issue—Bardozzetti and Dottori rely on Bloomberg’s coding of the absence or presence of a CAC,<sup>66</sup> while Bradley *et al.* and Bradley and Gulati review offering prospectuses and circulars to better identify the presence of a CAC.<sup>67</sup>

Another key limitation of the existing literature is the compositions of the samples analyzed therein, which mostly or entirely consist of emerging market sovereign bonds. We should expect CACs to play significantly different roles in the restructuring of corporate and sovereign debt for a number of reasons. First, the relevance of the interplay of CACs and issuer moral hazard in the context of sovereign debt markets is, at least theoretically, an open question. For example, the presence of the International Monetary Fund and its interest to launch bailouts to avoid cross-border financial crises may lead sovereign lenders to believe they are likely to be paid in full, making the presence of CACs less relevant in determining spreads.<sup>68</sup> This could make CACs less relevant in sovereign bonds, making differences in the spread of yields of bonds with and without CACs somewhat uninformative.<sup>69</sup> Second, the legal framework that governs a post-default state of the world is starkly different for corporate and

---

<sup>64</sup> Prior to 2003 nearly all sovereign debt issued under New York law contained UACs. *See generally* Robert B. Ahdieh, *Between Mandate and Market: Contract Transition in the Shadow of the International Order*, 53 EMORY L.J. 691 (2004); Lee C. Buchheit & G. Mitu Gulati, *Sovereign Bonds and the Collective Will*, 51 EMORY L.J. 1317 (2002). In response to crises in Mexico and Argentina, the United States Treasury Department recommended that sovereign bonds governed by New York law be issued under indentures containing CACs for the amendment of payment terms, a recommendation that was quickly embraced by market participants. *See, e.g.*, Anna Gelpern & Mitu Gulati, *Public Symbol in Private Contract: A Case Study*, 84 WASH. U. L. REV. 1627, 1649–60 (2006) (discussing the events surrounding the adoption of CACs in bonds governed by New York law); Sean Hagan, *Designing a Legal Framework to Restructure Sovereign Debt*, 36 GEO. J. INTL. L. 295 (2005); Randal Quarles, *Herding Cats: Collective Action Clauses in Sovereign Debt*, 73 LAW & CONTEMP. PROBS. 29 (2010). Bradley and Gulati report that while less than 10% of the sovereign bonds issued under New York law during 1990–2002 include CACs, by 2010, over 90% of all New York-law governed bonds contained such clauses. *See* Bradley & Gulati, *supra* note 56 at 2049–55.

<sup>65</sup> Mark Gugiatti & Anthony Richards, *The Use of Collective Action Clauses in New York Law Bonds of Sovereign Borrowers*, 35 GEO. J. INT’L L. 814, 820 (2004). The authors identify almost \$12 billion of sovereign bonds issued between 1991 and 2003 that are governed by the laws of New York but nonetheless contain CACs.

<sup>66</sup> *See* Bardozzetti & Dottori, *supra* note 57, at 288.

<sup>67</sup> *See* Bradley & Gulati, *supra* note 56, at 2055.

<sup>68</sup> *See* Federico Weinschelbaum & Jose Wynne, *Renegotiation, Collective Action Clauses and Sovereign Debt Markets*, 67 J. INT’L. ECON. 47, 49–50. (2005).

<sup>69</sup> In fact, there is anecdotal evidence indicating that investors and the market pay very little attention to CACs when pricing sovereign bonds. *See* Häselser, *Collective Action Clauses in International Sovereign Bonds*, *supra* note 51 at 905–06.

sovereign lenders. Holders of bonds issued by sovereigns have little recourse to a reliable enforcement authority since the courts of a defaulting sovereign are unlikely to enforce the bondholder's claim.<sup>70</sup> And, given that there is no bankruptcy-type regime for sovereigns, a sovereign, unlike a corporate borrower, cannot be liquidated, nor a bankruptcy court mandated capital restructuring (for example, reducing the principal to be repaid) be effected at the expense of the equity holders, as in corporate reorganizations.<sup>71</sup>

The sample analyzed in this Article addresses these limitations and presents a unique setting in which the effects of CACs on interest rate spreads can be analyzed and isolated.<sup>72</sup> First, the sample consists entirely of bonds issued by corporate entities. Thus, the analyses can control for a variety of issuer characteristics (such as leverage, size, etc.) in addition to credit rating (the control commonly used in studies of sovereign debt).<sup>73</sup> Moreover, indentures for corporate bond issues (unlike those for sovereign bonds) include a variety of provisions restricting issuer behavior which can further our understanding of the role of CACs in determining bond spreads.<sup>74</sup> Second, all the corporations that issued the bonds appearing in the sample are from one country, Chile. This means that the legal and regulatory framework affecting issuers (e.g., corporate law, securities law, bankruptcy law, antitrust laws, etc.) is the same for all issuers in the sample.<sup>75</sup> This, of course, is not the case in studies that include issuers from different countries.

---

<sup>70</sup> Aggrieved bondholders may still bring their claims in the courts of a third country, likely the United States or the United Kingdom, and try to attach assets owned by the sovereign located abroad – though it is unlikely they will find any significant assets. See William W. Bratton & G. Mitu Gulati, *Sovereign Debt Reform and the Best Interest of Creditors*, 57 VAND. L. REV. 1, 11 (2004). Creditors may also seek to obtain a judgment that limits the ability of the sovereign to transact in the international financial markets hoping to coerce the sovereign into repaying. This is the strategy that has been followed by some of the holders of restructured Peruvian and Argentinean bonds in recent years. See Bradley et al., *The Market Reaction to Legal Shocks and Their Antidotes*, *supra* note 56 at 291–94; Michael Elaine Moore & Philip Stafford, *Argentina in Last-Ditch Manoeuvre to Pay Bondholders*, FIN. TIMES (Mar. 30, 2015, 7:41 PM).

<sup>71</sup> See Bratton & Gulati, *supra* note 70 at 11; Steven Schwarcz, *The Idiots Guide to Sovereign Debt Restructuring*, 53 EMORY L. J. 1189 (2004). In addition, corporate issuers have developed alternatives outside bankruptcy and the use of CACs to restructure their debt. See Bernardo & Talley, *supra* note 46 and accompanying text.

<sup>72</sup> For a description of the sample see *infra* Part III.B.

<sup>73</sup> See *infra* Part IV.A.1.

<sup>74</sup> See *infra* Part IV.A.3.

<sup>75</sup> See *supra* note 25.

### III. OVERVIEW OF CHILEAN LAW & THE DATASET

#### A. The Chilean Legal Regime and Reform

The Chilean Securities Market Law (LMVC) sets forth the legal framework for the issuance of public debt instruments in Chile.<sup>76</sup> Debt instruments issued by non-financial companies with maturities longer than thirty-six months must be registered with the *Superintendencia de Valores y Seguros* (SVS), a Chilean administrative agency with duties analogous to those of the United States Securities and Exchange Commission.<sup>77</sup> Among the documents that an issuer must file with the SVS is the *contrato de emision*, an agreement between the issuer and the bondholders' representative that contains the terms and conditions of a bond issue (hereinafter "indenture"); a prospectus, providing a summary of the terms and conditions of the instrument; basic information on the issuer; and two credit rating certificates.<sup>78</sup> The contents of the indenture are regulated in part by the LMVC and by rules promulgated by the SVS, which require certain provisions and terms to be included therein.<sup>79</sup>

The process of amending the terms and conditions of a bond issue are among the items regulated by the LMVC. Under the original version of Article 125 of the LMVC (Old Article 125), enacted in 1994, changes to certain core terms, such as the interest rate, principal amount and maturity, required the unanimous consent of the holders of each and every outstanding bond.<sup>80</sup> Notably, this framework paralleled the one established in the United States under the TIA.<sup>81</sup> Old Article 125 was amended in 2007 to allow CACs in the indentures governing corporate bond issues.<sup>82</sup> Under

---

<sup>76</sup> See generally Law No. 18405 art. 103, Octubre 22, 1981, DIARIO OFICIAL [D.O.] (Chile). For an overview of the Chilean corporate bond market and its development in recent years, see Matias Braun & Ignacio Briones, *Development of the Chilean Corporate Bond Market*, in BOND MARKETS IN LATIN AMERICA: ON THE VERGE OF A BIG BANG? 151 (Eduardo Borenstein et al. eds., 2008).

<sup>77</sup> Bonds issued by financial entities must be registered with the *Superintendencia de Bancos e Instituciones Financieras*. See Law No. 18405 arts. 103, 131 Octubre 22, 1981, DIARIO OFICIAL [D.O.] (Chile).

<sup>78</sup> For a discussion of the terms usually included in indentures and the rationales behind these, see *infra* note 139 and accompanying text.

<sup>79</sup> See Law No. 18405 art. 104 Octubre 22, 1981, DIARIO OFICIAL [D.O.] (Chile).

<sup>80</sup> See Old Article 125, at par. 3. Bondholders representing at least two-thirds of the outstanding bonds could authorize amendments to non-core terms of the indenture in a manner binding on all bondholders, including dissenters. An indenture could provide for a qualified majority greater than two-thirds of all outstanding bonds, though not a lower one. See Old Article 125, at par. 1, 4. Bonds held by the issuer or related persons are not included. See Old Article 125, at par. 2. Old Article 125 was incorporated to the LMVC by Law 19301 No. 18(b), art. 1, Marzo 19, 1994 DIARIO OFICIAL [D.O.] (Chile). See Old Article 125, at par. 1.

<sup>81</sup> See *supra* notes 41–48 and accompanying text.

<sup>82</sup> See Law No. 20190 art. 6(8), Junio 5, 2007 DIARIO OFICIAL [D.O.] (Chile). The legislative history of the amendments to Article 125 notes the barriers that a unanimity requirement imposes to a debt

revised Article 125, the terms and conditions of a bond issue may allow bondholders representing at least 75% of the outstanding aggregate principal amount to authorize amendments to the interest rate, principal and maturity of all the bonds governed by such indenture.<sup>83</sup> Parties are still free to include a UAC if they so prefer.<sup>84</sup> If the parties opt to include a CAC, the indenture may provide for a qualified majority greater than 75% of the aggregate principal amount outstanding.<sup>85</sup>

Chile is not the only country to have recently amended the laws governing the inclusion of CACs in public debt. German law previously required that significant amendments to the terms and conditions of a bond be approved by each and every holder.<sup>86</sup> A more flexible statute, which became effective on August 2009, now allows a qualified majority representing the holders of at least 75% of the aggregate principal amount outstanding to authorize amendments to the core terms and conditions of a bond (such as the interest rate, maturity and principal, among others).<sup>87</sup> Although the governing document may provide for a higher qualified majority, it may not provide for one that is lower than 75%.<sup>88</sup> As in Chile, amendments authorized via this mechanism bind all bondholders, including dissenters.<sup>89</sup>

Adoption of CACs in corporate bond indentures occurred rapidly in Chile following the legal reform in that country, a fact that suggests that market participants welcomed the flexibility afforded by the legal reform.<sup>90</sup> However, the fact that CACs are being adopted does not necessarily mean that their adoption creates value in the underlying transactions.<sup>91</sup> If the

---

restructuring, as well as the need to harmonize the terms of Chilean bonds with those trading in the international markets where CACs are common. See BIBLIOTECA DEL CONGRESO NACIONAL, HISTORIA DE LA LEY NÚMERO 20.190, at 947 (2007) (Chile).

<sup>83</sup> See Law No. 18405 art. 125, Octubre 22, 1981, DIARIO OFICIAL [D.O.] (Chile). Bonds held by the issuer are not counted for purposes of authorizing an amendment via bondholder vote. *Id.*

<sup>84</sup> *Id.*

<sup>85</sup> *Id.* If the indenture is silent in this regard, any changes to these core terms must be approved by all bondholders (i.e., as if a UAC had been agreed to). *Id.*

<sup>86</sup> See Jason Grant Allen, *More than a Matter of Trust: The German Debt Securities Act 2009 in International Perspective*, 7 CAP. MKT'S L.J. 55, 61 (2012).

<sup>87</sup> See Gesetz über Schuldverschreibungen aus Gesamtemissionen [Schuldverschreibungsgesetz – SchVG] [Debenture Act], Aug. 5, 2009, BGBL I at § 4 (Ger.). For a description of the German Debenture Act, see Jason Grant Allen, *supra* note 86; see also Angelo Lercara & Michael Meissner, *Reform of the German Bond Act and its Impact on the German Debt Capital Market*, 6 J. INT'L. BANKING L. & REG. 298, 299 (2010).

<sup>88</sup> See Gesetz über Schuldverschreibungen aus Gesamtemissionen [Schuldverschreibungsgesetz – SchVG] [Debenture Act], Aug. 5, 2009, BGBL I at § 5(4) (Ger.). If the governing instrument is silent with respect to the amendment of core terms, unanimous consent is required for an amendment of such terms. *Id.* § 5(1).

<sup>89</sup> See *Id.* § 5(2).

<sup>90</sup> See Berdejo, *supra* note 48, at 560–67. Similarly, adoption of CACs in bonds issued by German corporations occurred rather rapidly following the reform. *Id.* at 563.

<sup>91</sup> For example, an issuer may use its bargaining power ex ante to negotiate the inclusion of a CAC

adoption of a CAC does create value for the contracting parties (by, for example, reducing the expected costs of financial distress), one could expect to see an effect on the interest rates demanded by the market.<sup>92</sup> The analyses presented in Section III explore the relationship between the inclusion of CACs and the spread demanded by investors.

## B. Description of the Data

The sample analyzed in this Article includes all bonds denominated in *Unidades de Fomento*<sup>93</sup> with maturities of at least three years issued by Chilean corporations between January 1, 2005 and December 31, 2013.<sup>94</sup> The SVS website provides certain details for each offering, including the issue date, effective interest rate (i.e., initial yield),<sup>95</sup> term (maturity) of the

---

planning to use it when it later encounters financial difficulties to coerce creditors into replacing the original terms with less favorable ones. See Kahan, *supra* note 36, at 1058–59 (noting that when rights of bondholders are collective, an issuer may find it easier to coerce bondholders into accepting detrimental amendments and that therefore individual bondholders may value their ability to control their own destiny in this regard).

<sup>92</sup> The extent to which the interest would decline will depend on the relative bargaining power of the issuer and creditors as they share the additional surplus. See Bratton & Gulati, *supra* note 50 and accompanying text.

<sup>93</sup> Bonds may be issued in Chilean pesos (the country's legal tender) or in *Unidades de Fomento* (U.F.'s), an indexed unit of account which is defined relative to the Chilean peso. The U.F. was introduced in January 1967 to provide an inflation indexed unit of account in which long-term financial instruments could be denominated. See Fernando Lefort & Klaus Schmidt-Hebbel, *Indexation, Inflation, and Monetary Policy: An Overview*, in INDEXATION, INFLATION, AND MONETARY POLICY 1, 7 (Fernando Lefort & Klaus Schmidt-Hebbel eds., Central Bank of Chile 2002), [http://www.bancocentraldechile.cl/eng/studies/central-banking/pdf/v2/001\\_018Introduccion.pdf](http://www.bancocentraldechile.cl/eng/studies/central-banking/pdf/v2/001_018Introduccion.pdf). The U.F. is linked to the official consumer price index that measures the true cost of living (i.e. inflation) in Chile; thus, when obligations are denominated in U.F.'s, their real value remains constant (i.e. they are held constant in terms of purchasing power). *Id.* at 5. For an analysis of the experience of the Chilean U.F., see Robert J. Shiller, *Indexed Units of Account: Theory and Assessment of Historical Experience*, in INDEXATION, INFLATION, AND MONETARY POLICY 105 (Fernando Lefort & Klaus Schmidt-Hebbel eds., Central Bank of Chile 2002), [http://www.bancocentraldechile.cl/estudios/banca-central/pdf/v2/105\\_134Shiller%20.pdf](http://www.bancocentraldechile.cl/estudios/banca-central/pdf/v2/105_134Shiller%20.pdf).

<sup>94</sup> This list is available at [http://www.svs.cl/sitio/estadisticas/valores\\_emision\\_bonos\\_corporativos.php](http://www.svs.cl/sitio/estadisticas/valores_emision_bonos_corporativos.php). Issuances by financial companies or companies controlled by the state are excluded.

<sup>95</sup> Some studies, such as Bardozzetti & Dottori and Becker et al. use secondary market data (i.e., the price of the bond in the secondary market) to estimate the yield and spread of the bond. See Bardozzetti & Dottori, *supra* note 57, at 288; Becker et al., *supra* note 39, at 135; see also *supra* note 54 and accompanying text. Other studies, such as Eichengreen & Moody and Bradley & Gulati use primary market data, calculating the yield based on the initial pricing of the bond when originally issued. See Eichengreen & Moody, *supra* note 39, at 254; Bradley & Gulati, *supra* note 56, at 2053. This Article follows the latter approach. In theory, secondary market data can provide an unbiased estimate of the intrinsic value of bonds with differing issue dates on the same date, facilitating the comparison across bonds. See Bardozzetti & Dottori, *supra* note 57, at 288; see also Bradley & Gulati, *supra* note 56, at 2053. However, if markets are illiquid or not otherwise efficient, then secondary market data is less reliable, a point raised by Bradley and Gulati in the context of sovereign bonds. See Bradley & Gulati,

bonds, and the aggregate principal amount. I complement this information by reviewing the corresponding prospectuses for the bond issues in the sample and the periodic financial reports filed by the issuing companies with the SVS.<sup>96</sup>

A review of the prospectuses and indentures reveals whether the bond is governed by a CAC, as well as any financial restrictions imposed on the issuer such as interest cover or leverage ratios.<sup>97</sup> In addition, as part of its registration materials, the issuer must obtain a credit rating from two credit agencies.<sup>98</sup> Companies that have issued securities in the public markets must file quarterly and annual financial reports with the SVS, which include the issuer's total assets and shareholders' equity, as well as various measures of the issuers' leverage, which are described later.<sup>99</sup> Following Bradley & Gulati,<sup>100</sup> I calculate the corresponding spread for each bond issue (the outcome variable of interest), by subtracting from the initial yield of the bond issue the initial yield on the debt of similar maturity issued by the Chilean Central Bank during the same calendar month.<sup>101</sup>

#### IV. EMPIRICAL RESULTS

##### A. Assessing the Value of CACs

###### 1. CACs and Interest Rate Spreads

Table 1 provides a set of summary statistics for those bonds issued between July 1, 2007 and December 31, 2013 (i.e., during the "post-reform period" of the sample), including the frequency of CACs and the average spread for these bonds classified according to whether or not the indenture

---

*supra* note 56, at 2053–54. In addition, the when-issued rate (i.e., initial yield) is a more appropriate measure of an issuer's actual cost of capital. *Id.* at 2053.

<sup>96</sup> Issuers file quarterly and yearly financial information with the SVS. This information is publicly available at the SVS website, <http://www.svs.cl/sitio/mercados/valores.php>.

<sup>97</sup> See discussion *infra* Part IV.A.3.

<sup>98</sup> Issuers must obtain a credit rating from two registered credit rating agencies and disclose such rating in the prospectus, as well as in the registration documents. See Law No. 18405 arts. 76, 88, Octubre 22, 1981 DIARIO OFICIAL [D.O.] (Chile).

<sup>99</sup> See *infra* note 107 and accompanying text.

<sup>100</sup> See Bradley & Gulati, *supra* note 56, at 2046.

<sup>101</sup> Data on bonds issued by the Chilean Central is available at the historical statistics section of the Chilean Central Bank website, available at <http://www.bcentral.cl/bde/index.htm>. Since the Chilean Central Bank issues bonds in maturities of 5, 10, 20 and 30 years, not all of the bonds in the database can be perfectly matched to a similar government security. To address this problem, each bond in the sample is matched to the Chilean government bond with the closest maturity. Bonds with maturities between 25 and 30 years are matched with the government 30-year bond; bonds with maturities between 15 and 25 years are matched with the 20-year bond; bonds with maturities between 7 and 15 years are matched with the government 10-year bond; and bonds with maturities less than 7 years are matched with the government 5-year bond.

governing a particular bond issue included a CAC.<sup>102</sup> Two interesting patterns emerge from these summary statistics. First, although issuers and investors have a slight overall preference to include CACs in the indentures governing bond issues (approximately 54% of the indentures include such clauses), a sizable minority does not.<sup>103</sup> Second, the average spread for bond issues which include CACs is about 20% lower than the spread for those issues that do not include such clauses.<sup>104</sup> The difference in the average spread across the two groups of bonds, just over 30 basis points, is statistically significant at the 1% level.<sup>105</sup> These two results suggest that the flexibility provided by the new regime is valuable to contracting parties.<sup>106</sup>

---

<sup>102</sup> Even though parties incorporating a CAC are free to set the qualified majority required to authorize changes to the core terms at any level between 75% and 100%, all issues that include a CAC set 75% as the qualified majority. Thus, it is not necessary to distinguish among different levels of qualified majorities.

<sup>103</sup> See *infra* Table 1, column (1).

<sup>104</sup> The average spread for bonds issued with a CAC is 1.1362, while the average spread for bonds which do not contain a CAC is 1.4430. See *infra* Table 1, column (2). The median spread for issues that include a CAC is 24.8 basis points lower than those that do not include such clause (1.1264 for the former and 1.3841 for the latter), which provides some reassurance that the difference in means is not being driven by outliers or by multiple issuances by a few companies.

<sup>105</sup> The *p*-value from a two-tailed test that the mean spread for the issues containing a CAC is equal to the mean spread of issues not containing a CAC is 0.002. See *infra* Table 1, column (2).

<sup>106</sup> For instance, the average effect associated with the inclusion of CAC, a 30 basis points reduction, represents about 7.5% of the average effective interest rate in the sample, 4.10%. It should be noted that this interest rate is for the debt denominated in U.F.'s, which are inflation-indexed. If the amounts owed were expressed in Chilean Pesos, the average interest rate would be higher.

TABLE 1. SUMMARY STATISTICS – BY CAC ADOPTION  
(JUL. 2007 – DEC. 2013)

	(1)	(2)	(3)	(4)	(5)	(6)
<i>Contains CAC</i>	No.	Spread	Assets (in 000's P's)	Debt-Equity Ratio	Cover Ratio	Credit Rating
Yes	76	1.1362	2,440,046	1.2533	7.6513	6.8947
No	66	1.4430	2,566,737	1.4677	5.9097	6.803
Difference		0.3067	126,690	0.2144	1.7416	0.0917
p-value		0.0020	0.9079	0.1697	0.125	0.7269

*Notes:* Column (1) presents the number of bonds issued with and without CACs. The variable in column (2) is the spread of issue  $i$ , defined as the interest rate on bond  $i$  and the corresponding bond issued by the Chilean Central Bank with a similar maturity. Column (3) presents the assets of the issuer (in Chilean pesos) as recorded in the issuer's balance sheet for the fiscal year preceding the offering. Column (4) presents the debt-equity ratio, defined as the ratio of total debt to total shareholders' equity, as these appear in the end of year balance sheet for the fiscal year preceding the bond issue. The interest cover ratio, i.e., the ratio of earnings before interest and taxes to the issuer's fixed charges (e.g., interest payments), for the fiscal year preceding the bond issue is presented in column (5). Credit rating information is presented in column (6) (see *supra* note 109 for a description of this variable). The  $p$ -values in columns (2)–(6) come from a two-tailed test that the mean of the corresponding variable for the bond issues containing a CAC are equal to the mean of the corresponding variable for the bond issues not containing a CAC.

Comparing differences in average spreads to assess the value of CACs can be misleading since differences in interest rate spreads could be explained by various issuer characteristics that affect the rate of return demanded by investors (such as the size and leverage of the issuer), some of which may also be correlated with the adoption of a CAC. To account for such characteristics, Table 1 also provides summary statistics on the size (i.e., total assets), leverage (i.e., debt-equity ratio and interest cover ratio), and credit rating for those bond issues that include a CAC and those that do not.<sup>107</sup> There is no significant difference in the size of issuers issuing bonds containing CACs and bonds not containing those clauses.<sup>108</sup> Although issuers including a CAC have on average a better credit rating, the

<sup>107</sup> Information about an issuer's assets, debt-equity ratio and interest cover ratio is obtained from the financial information furnished periodically by companies with the SVS. See Superintendencia de Valores y Seguros, *supra* note 96. Credit rating information is obtained from the registration materials filed by companies with the SVS when issuing bonds. See Law No. 18405 arts. 76, 88, Octubre 22, 1981 DIARIO OFICIAL [D.O.] (Chile).

<sup>108</sup> The difference in the total assets of the companies that issue bonds with and without CACs is small in magnitude (under 5%) and is not statistically significant. See *infra* Table 1, column (3).

difference is small and not statistically significant and, moreover, the median credit rating is the same across these two groups.<sup>109</sup>

Issuers including a CAC in their bonds do appear to have lower levels of debt relative to their assets and income, a fact that could explain some of the observed difference in spreads across the two groups of bonds. Bonds containing a CAC are issued by companies having a lower debt to equity ratio (1.25) than those issuing bonds not containing CACs (1.47).<sup>110</sup> This suggests that bonds containing CACs are issued by companies that have lower levels of leverage, i.e., that have higher levels of assets relative to their liabilities. The difference, however, is relatively small and not statistically significant.<sup>111</sup> More notably, bonds containing a CAC are issued by companies having a higher interest cover ratio (7.65) than those issuing bonds not containing CACs (5.91).<sup>112</sup> This suggests that bonds containing CACs are issued by companies that generate more earnings relative to the aggregate annual amount of interest they must pay under their outstanding debt obligations. Although the difference is not statistically significant, the relative magnitude is not necessarily trivial.<sup>113</sup> However, it is worth noting that the differences in the median values of the interest cover ratios across the two groups are substantially lower (5.14 v. 4.83), which suggests that the difference in the averages may be driven by outliers or multiple issuances by a few companies.

To examine the relationship between the adoption of CACs and the credit spread of a bond issue in a manner that controls for the potential differences in issuer characteristics highlighted above, one can estimate the following baseline specification:

---

<sup>109</sup> See *infra* Table 1, column (6). Each bond issue is assigned to a group based on the maximum rating obtained in the documents presented as part of the offering materials. These credit rating bins are then assigned a number, with higher values indicating higher rating: AA+ (9), AA (8), AA- (7), A+ (6), A (5), A- (4), BB+ (3). The median credit rating for both groups is 7 (i.e., AA-).

<sup>110</sup> See *infra* Table 1, column (4). The debt-equity ratio describes the relative proportions of the assets contributed by the debtholders and equityholders in a company and is commonly used to describe the leverage of a firm. It is calculated by dividing the issuer's total liabilities by the shareholders' equity (i.e., the company's total assets minus total liabilities), as both measures appear in the company's balance sheet. See WILLIAM J. CARNEY, CORPORATE FINANCE: PRINCIPLES AND PRACTICE 54 (2d ed. 2010).

<sup>111</sup> See *infra* Table 1, column (4).

<sup>112</sup> See *infra* Table 1, column (5). The interest cover ratio measures the extent to which interest obligations and other fixed charges are covered by the issuer's earnings. It is often calculated by dividing the company's earnings before interest for a period and taxes by the total amount of interest payable during that period. See CARNEY, *supra* note 110, at 55.

<sup>113</sup> See *infra* Table 1, column (5).

$$\begin{aligned} Spread_i = & \alpha + \beta_1 CAC_i + \beta_2 LogMaturity_i + \beta_3 LogPrincipal_i \\ & + \beta_3 LogAssets_i + \beta_4 Debt:Equity_i + \beta_5 CoverRatio_i \\ & + \beta_6 CreditRating_i + \beta_7 Year_i + \varepsilon_i \end{aligned}$$

where  $Spread_i$ , the outcome of interest, is the difference between the interest rate on bond  $i$  and the corresponding bond issued by the Chilean Central Bank with a similar maturity during the same month;<sup>114</sup>  $CAC_i$  is an indicator variable equal to 1 if the agreement governing bond issue  $i$  included a CAC;  $LogAssets_i$  is the natural logarithm of the issuer's total assets as these appear in the end of year balance sheet for the year preceding the offering;  $LogMaturity_i$  is the natural logarithm of the maturity of the bond;  $LogPrincipal_i$  is the natural logarithm of the aggregate principal amount the bonds issued;  $Debt/Equity_i$  is the ratio of total debt to shareholders' equity total assets as these appear in the end of year balance sheet for the year preceding the offering;<sup>115</sup>  $CoverRatio_i$  is the ratio of earnings before interest and taxes to fixed charges for the issuer in the fiscal year preceding the offering;<sup>116</sup>  $CreditRating_i$  is a set of fixed effects based on the highest of the two credit ratings assigned to issue  $i$  in the corresponding registration statement;<sup>117</sup>  $Year_i$  is a set of year fixed effects;<sup>118</sup> and  $\varepsilon_i$  is an error term.<sup>119</sup>

---

<sup>114</sup> See Banco Central de Chile, *supra* note 101 and accompanying text.

<sup>115</sup> Yearly financial data for each issuer is available at the SVS website. See Superintendencia de Valores y Seguros, *supra* note 96.

<sup>116</sup> *Id.*

<sup>117</sup> The issues are assigned to one of the following five groups depending on the highest credit rating assigned in the corresponding registration statement: AA+ (19 obs.), AA (40 obs.), AA- (24 obs.), A+ (27 obs.), and A and lower (25 obs.).

<sup>118</sup> Including year fixed effects allow us to control for any trends in corporate bond spreads which are driven by macroeconomic factors but that may coincide with the inclusion of CACs in indentures. This is a concern since CACs could not be adopted by issuers prior to the reform and following the reform adoption of CACs was initially slower than in later years. See Berdejo, *supra* note 48, at 561–63 (documenting an increasing trend in the adoption of CACs in the indentures of bonds issued in the years immediately following the reform in Chile). Thus, if average spreads in the Chilean corporate bond market significantly decrease throughout the sample, then the coefficient on the  $CAC_i$  indicator variable may be simply capturing this trend. This, however, does not appear to be the case. The average (median) spread in the pre-reform period is 0.982 (0.944) while the average (median) spread in the post-reform period is 1.279 (1.200).

<sup>119</sup> Heteroskedasticity-robust standard errors clustered at the issuer level are used in all calculations of statistical significance throughout the Article. Although the dataset includes a total of 195 bonds, these are issued by sixty-five different companies. If one does not adjust for the fact that bonds issued by the same company are likely not to be independent observations the estimated standard errors will appear to be smaller than they actually are, leading the researcher to erroneously find results to be statistically significant. One method of dealing with this problem in panel data is to cluster the estimates of the standard errors by issuing company, which takes into account the covariance between the issues of a particular company through time when calculating the corresponding standard errors. See Mitchell A. Peterson, *Estimating Standard Errors in Finance Panel Data Sets: Comparing Approaches*, 22 REV. FIN. STUD. 435, 457–60 (2009).

The estimates for this baseline specification are presented in column (1) and column (2) of Table 3. Column (2) presents the results of the analysis including all 195 bonds in the sample, while the results in column (1) restrict the sample to the 142 bonds issued in the post-reform period in the sample. Let us first focus on the subset of bonds issued during the post-reform period of the sample (since issuers could not have adopted CACs prior to the reform). As one can see, the coefficient on  $CAC_i$  is negative and statistically significant, indicating that the inclusion of a CAC in an indenture is associated with lower interest rates, even after controlling for the various issuer characteristics described earlier, including measures of a firm's leverage and creditworthiness. The magnitude of this effect is substantial. The coefficient on the  $CAC_i$  indicator variable, 28.5 basis points, represents 25.4% of the average spread in the sample of bonds issued during the post-reform period (112 basis points).<sup>120</sup> The results are identical for the entire sample of bonds (i.e., if we include bonds issued in the pre-reform period).<sup>121</sup>

---

<sup>120</sup> See *infra* Table 2, column (1).

<sup>121</sup> For the whole sample, the coefficient on  $CAC_i$  indicator variable, 29.1 basis points, represents 24.3% of the average spread in sample (119.8 basis points). See *infra* Table 2, column (2).

TABLE 2. ADOPTION OF CACs & SPREADS

	(1)	(2)	(3)	(4)
	<i>By Issue</i>		<i>By Issuer-Year</i>	
	Post Reform Issues	All Issues	Post Reform Issues	All Issues
CAC	-0.285** [0.115]	-0.291** [0.113]	-0.262** [0.128]	-0.283** [0.124]
LogMaturity	0.0148 [0.0497]	0.0201 [0.0436]		
LogAssets	0.0972 [0.0584]	0.0935** [0.0451]	0.112* [0.0606]	0.119** [0.0476]
LogAmount	-0.0609 [0.107]	-0.0591 [0.0807]	-0.0906 [0.0806]	-0.0725 [0.0715]
Debt/Equity	-0.0307 [0.0799]	-0.00876 [0.0704]	-0.0132 [0.1000]	0.0163 [0.0888]
CoverRatio	0.0088 [0.0057]	0.004 [0.0060]	0.0097 [0.0065]	0.0054 [0.0066]
Mean	1.1221	1.198	1.3068	1.2067
Outcome				
Observations	142	195	90	126
R-squared	0.438	0.419	0.446	0.451

*Notes:* Robust standard errors clustered at the issuer level in brackets (\* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%). The outcome in columns (1) – (2) is the spread of issue  $i$ , defined as the interest rate on bond  $i$  and the corresponding bond issued by the Chilean Central Bank. In columns (3) and (4) the data is collapsed at the issuer-year level and the outcome variable is the average spread for each issuer during a given calendar year weighted by offering size (see *supra* note 123 for more details). Columns (1) and (3) include bonds issued between July 1 2007 and December 31, 2013. Columns (2) and (4) include bonds issued between January 1, 2005 and December 31, 2013. The explanatory variables of interest are: (i) *CAC*, an indicator variable equal to 1 if a the bond agreement governing issue  $i$  included a collective action clause; (ii) *LogAssets*, the natural logarithm of the issuer’s total assets for the fiscal year preceding the bond issue, (iii) *LogAmount*, the natural logarithm of the aggregate principal amount the bonds issued of issue  $i$ ; (iv) *LogMaturity*, the log of the term of bond  $i$ ; (v) *Debt/Equity*, the ratio of total debt to total shareholder equity as these appear in the end of year balance sheet for the fiscal year preceding the bond issue; and (vi) *Cover Ratio*, the ratio of earnings before interest and taxes to fixed charges for the fiscal year preceding the bond issue. All regressions include a set of year fixed effects and a set of credit rating fixed effects (see *supra* note 117 for more details).

One concern is that these results may be driven by multiple bond issuances by a few companies.<sup>122</sup> To rule out this possibility one can aggregate the data at the firm-year level by calculating the weighted average spread during each calendar year for each company by weighing each bond issue according to its offering size relative to the company's other bond offerings in the same calendar year.<sup>123</sup> For a firm  $f$  that had  $n$  different bond issues in a given year  $y$ , the weighted average spread for that firm-year can be calculated using the following formula:

$$\text{WeightedSpread}_{fy} = \sum_{j=1}^n \frac{\text{Principal}_{fyj}}{\sum_{j=1}^n \text{Principal}_{fyj}} \text{Spread}_{fyj}$$

where  $\text{Principal}_{fyj}$  is the aggregate principal amount issued in bond offering  $j$  and  $\text{Spread}_{fyj}$  is the spread corresponding to bond issue  $j$ .<sup>124</sup>

Columns (3) and (4) of Table 2 present the results of specifications analogous to those presented in columns (1) and (2) using this weighted average spread as the outcome variable of interest. The estimates for the coefficient on  $CAC_i$  are qualitatively and quantitatively similar to those discussed earlier. In the post-reform portion of the sample, the magnitude of the  $CAC_i$  coefficient, 26.2 basis points, represents approximately 20.1% of the mean weighted average spread (1.3068).<sup>125</sup> This evidence confirms that the baseline results are not necessarily being driven by multiple bond issuances conducted by a few firms.

The results presented thus far, however, must be interpreted with care, as they do not necessarily establish a causal connection between the adoption of a CAC and the spread the market demands from an issuer. The obvious problem is that issuers and investors choose whether or not to include a CAC in their indenture agreement, raising potential endogeneity

---

<sup>122</sup> The 195 bonds contained in the dataset are issued by sixty-five different companies.

<sup>123</sup> The data can be collapsed in this manner since for every company in the dataset, the values of the contractual variables considered in these analyses (such as the presence of a CAC or the credit rating of the issuer) are identical across multiple issuances by the same company in a given calendar year. Multiple issuances in the same calendar year arise in situations where the issuer simultaneously issues bonds with different maturities (e.g., one bond with a maturity of ten years and another with a maturity of twenty-five years), each bond issue being governed in some cases by its own separate indenture.

<sup>124</sup> For example, assume that Company A has two offerings in 2010. In the first offering, Company A issued \$100 million dollars in aggregate par value of bonds with a spread of 1.5. In the second offering Company A issued \$50 million dollars in aggregate par value of bonds with a spread of 1.2. The weighted average spread for Company A in year 2010 would be  $(100\text{M}/150\text{M}) * 1.5 + (50\text{M}/150\text{M}) * 1.2 = 1.0 + 0.4 = 1.4$ .

<sup>125</sup> See *infra* Table 2, column (3). The magnitude of the  $CAC_i$  coefficient, 28.3 basis points, represents approximately 23.4% of the mean weighted average spread in the sample that includes the pre-reform bonds (1.2067). See *infra* Table 2, column (4).

concerns.<sup>126</sup> The analysis that follow will try to correct for any bias introduced by these unobserved variables, thus allowing us to establish a cleaner link between the adoption of CACs and bond spreads.<sup>127</sup>

## 2. Correcting for Endogeneity

As just noted, the interpretation of the results presented in Table 2 can be complicated by the possibility that unobservable characteristics of an issuer (i.e., variables which are omitted from the analyses presented earlier) that may be positively correlated with the likelihood of CAC adoption and negatively correlated with the interest rate spread demanded by investors are driving the results.<sup>128</sup> The fact that the specifications estimated above do control for a number of issue and issuer characteristics, such as credit quality, leverage, size of the offering, term and year of issue, suggests that such omitted variables are likely not driving the results. To provide further reassurance, the analyses in this section try to explicitly control for such unobserved firm characteristics.

One method frequently used to control for the self-selection problem described above is to include firm fixed effects in the specification, which will capture any time-invariant unobservable characteristics of the issuer.<sup>129</sup> This firm-fixed effect model can be specified as follows:

---

<sup>126</sup> This particular problem is common in empirical studies in the field of corporate finance. See Kai Li & Nagpurnanandr R. Prabhala, *Self-Selection Models in Corporate Finance*, in 1 HANDBOOK OF CORPORATE FINANCE – EMPIRICAL CORPORATE FINANCE 37, 40 (B. Espen Eckbo ed., 2007) (“Corporate finance concerns the financing and investment choices made by firms and a broad swathe of decisions within these broad choices. These choices are not usually random, but are deliberate decisions by firms or their managers to *self-select* into their preferred choices.”).

<sup>127</sup> The importance of this endogeneity concern for the interpretation of the results ultimately depends on the question being addressed. The sole goal of these analyses is not necessarily to establish that randomly assigning CACs across bonds would result in investors demanding a lower spread relative to those without a CAC (or that forcing market participants to include a CAC would lead to lower spreads in every transaction). The objective is rather to determine whether affording parties the freedom to make this contractual choice (as did the Chilean reform) can enhance the value of transactions among issuers and investors in the public debt markets. One would expect issuers and investors to include a CAC if they believe that doing so increases the overall value of a particular transaction (e.g., if the decrease in the expected costs of financial distress outweigh any moral hazard concerns). See, e.g., Eichengreen & Mody, *supra* note 39, at 263. Depending on the relative bargaining power of the parties, a fraction of this increase in value would then be passed on to the issuer by means of a lower spread. Thus, observing that (1) some issues include a CAC and (2) that these issues have a lower spread, at the very least suggests that the contractual choice likely creates value for the parties.

<sup>128</sup> See Li & Prabhala, *supra* note 126.

<sup>129</sup> See *id.* at 56. It should be noted that fixed effects address the endogeneity problem if the unobservable characteristics are time invariant; if these characteristics are time variant, then the inclusion of fixed-effects would not fully correct the endogeneity problem described earlier.

$$AdjSpread_i = \alpha + \beta_1 CAC_i + \beta_2 LogMaturity_i + \beta_3 LogPrincipal_i + \sum_j \beta_{4j} * Issuer_{ij} + \varepsilon_i$$

where  $CAC_i$ ,  $LogMaturity_i$  and  $LogPrincipal_i$  are the same variables described in specification (1);  $Issuer_{ij}$  is a set of issuer fixed effects;<sup>130</sup> and  $\varepsilon_i$  is an error term.<sup>131</sup> Since the specification includes firm fixed effects, variables pertaining to firm characteristics are excluded as these are serially correlated across observations involving the same firm. The outcome of interest in specification (2) is  $AdjSpread_i$ , which is equal to the spread on bond  $i$ , as defined earlier,<sup>132</sup> minus the average spread for all bonds in the sample that were issued in the same calendar year as bond  $i$ . The outcome variable  $AdjSpread_i$  is constructed in a manner that allows us to control for year to year changes in the average spread demanded by the market from corporate issuers without having to include year fixed effects, the inclusion of which would not be advisable given the number of bonds issued by each company in each calendar year.

In specification (2) the coefficient  $CAC_i$  measures the effect of including a CAC by relying on within-firm variation in the adoption of CACs – i.e., for a given firm, it tells us what is the effect of including a CAC on the spread demanded by the firm’s investors, holding everything else constant (including observable and unobservable firm characteristics). Column (1) of Table 3 presents the estimates for all bonds issued by firms that have two or more bonds in the sample.<sup>133</sup> The estimate for the coefficient on  $CAC_i$ , 21.7 basis points, is quite similar in magnitude to the baseline estimates presented earlier.<sup>134</sup>

Since firms could not issue bonds with CACs prior to July 2007 and

---

<sup>130</sup> This set of firm fixed effects consists of a series of dummy variables, each of which is equal to one for one of the firms in the sample and zero for the other firms. For example, consider Firm A and Firm B. The variable  $Issuer_{Ai}$  would be the fixed-effect corresponding to Firm A. In the dataset, the variable  $Issuer_{Ai}$  would be coded as one for Firm A and as zero for Firm B. Similarly, the variable  $Issuer_{Bi}$  would be coded as zero for Firm A and as one for Firm B. The number of firm fixed effects is equal to the number of different firms in the sample minus one (i.e., if there are fifty-one firms in the sample, there would be fifty dummy variables).

<sup>131</sup> As in the other specification estimated in this Article, heteroskedasticity-robust standard errors clustered at the issuer level are used in the calculation of statistical significance. See *supra* note 119.

<sup>132</sup> See *supra* notes 100–01 and accompanying text.

<sup>133</sup> There are a total of fifty-one firms with more than one bond in the sample. Bonds issued by firms that only have one bond in the sample are excluded given the presence of firm fixed effects in the model.

<sup>134</sup> See *infra* Table 3, column (1). The fact that the size of the coefficient is smaller suggests that some of the differences in spreads across bonds with and without CACs documented in Table 2 were related to unobservable firm characteristics. It is also worth noting that the results in the model with firm fixed effects have lower statistical significance. This is due to the limited power that models with fixed effects have given the fact that they solely rely on intra-firm variation. See Li & Prabhala, *supra* note 126, at 56.

the adoption of CACs following the reform increased with the passage of time,<sup>135</sup> one could worry that the coefficient on  $CAC_i$  is merely capturing a trend in corporate bond spreads across the pre- and post-reform periods. To address this concern, we can examine changes in the spreads and estimate the following specification:

$$AdjSpread_i = \alpha + \beta_1 PostReform_i + \beta_2 LogMaturity_i + \beta_3 LogPrincipal_i + \sum_j \beta_{4j} * Issuer_{ij} + \varepsilon_i$$

Specification (3) is identical to specification (2), but the variable  $CAC_i$  is replaced by the variable  $PostReform_i$ , an indicator variable equal to 1 if bond  $i$  was issued after July 1, 2007. If the estimate of the coefficient on  $CAC_i$  presented in column (1) of Table 3 merely reflected an exogenous time trend in corporate spreads one would expect the coefficient on  $PostReform_i$  to be negative and statistically significant. However, this is not the case. The magnitude of the coefficient on  $PostReform_i$  is substantially smaller than the magnitude of the coefficient on  $CAC_i$ , which was estimated in specification (2) (0.39 basis points compared to 21.66 basis points), is close to zero and is not statistically significant.<sup>136</sup> This confirms that the results presented in column (1) of Table 3 do not merely reflect an underlying trend unrelated to the adoption of CACs.

---

<sup>135</sup> See Berdejo, *supra* note 48, at 561–63 (documenting an increasing trend in the adoption of CACs in the indentures of bonds issued in the years immediately following the reform in Chile).

<sup>136</sup> See *infra* Table 3, column (2).

TABLE 3. ISSUER FIXED EFFECTS SPECIFICATIONS  
(JAN. 2005 – DEC. 2013)

	(1)	(2)	(3)
	<i>All issuers with multiple bonds</i>		<i>Adopters</i>
CAC	-0.2166* [0.114]		-0.2159* [0.114]
PostReform		-0.039 [0.154]	
LogMaturity	0.0477 [0.0421]	0.0455 [0.0449]	0.0104 [0.0446]
LogAmount	0.0342 [0.104]	0.0369 [0.105]	-0.0158 [0.178]
No. of Issuers	51	51	12
Observations	181	181	65
R-squared	0.599	0.584	0.477

*Notes:* Robust standard errors clustered at the issuer level in brackets (\* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%). The outcome in columns (1) - (3) is the adjusted spread of issue  $i$ , defined as the interest rate on bond  $i$  and the corresponding bond issued by the Chilean Central Bank with a similar maturity, minus the average spread for all bonds issued in the same calendar year as bond  $i$ . The explanatory variable of interest in columns (1) and (3) is *CAC*, an indicator variable equal to 1 if the governing contractual instrument for bond  $i$  contained a collective action clause. In column (2), the explanatory variable of interest is *PostReform*, an indicator variable equal to 1 if the issuance of bond  $i$  occurred after July 1, 2007. In addition, columns (1) – (3) include the following explanatory variables: (i) *LogAmount*, the natural logarithm of the aggregate principal amount the bonds issued of issue  $i$  and (ii) *LogMaturity*, the log of the term of bond  $i$ . Columns (1) and (2) include all bonds issued by companies that issued at least two bonds in the sample. Column (3) includes only those bonds issued by companies that issued bonds with and without CACs. All regressions include a set of issuer fixed effects.

Another potential concern with the results presented in column (1) of Table 3 is that it includes bonds issued by firms that never adopted a CAC in their indentures during the time period covered in the dataset. Given that the model presented in specification (2) includes fixed effects, including bonds issued by these firms, contributes very little to the identification of the effect of the inclusion of a CAC on spreads.<sup>137</sup> To address this concern

<sup>137</sup> See Gugiatti & Richards, *supra* note 55, at 440–41. The inclusion of bonds issued by these firms does, however, help calibrate the value for the coefficients on the covariates included in the model (i.e., the aggregate principal amount and maturity of each bond issue).

one can estimate specification (2) relying only on those bonds issued by firms that do adopt CACs at some point in the post-reform period of the sample. The resulting coefficient on  $CAC_i$  based on this subset of bonds, 21.6 basis points, is identical to that found in the analysis of the broader sample and is also similar in magnitude to the coefficient on  $CAC_i$  presented in the baseline results in Table 2.<sup>138</sup>

### 3. CACs and Restrictive Covenants

The results presented thus far indicate that including a CAC in the indenture governing a bond issue results in lower spreads for the issuer. However, the mechanism for amending the core terms of a bond is just one of the many provisions contained in the governing indenture that may affect the pricing of the underlying bonds.<sup>139</sup> To protect themselves, creditors also include a variety of covenants that curtail the ability of the issuer from taking certain actions that could jeopardize its liquidity or otherwise adversely impact bondholders' interests (e.g., payment of excessive dividends, claim dilution, and excessive risk-taking, among others).<sup>140</sup> A breach of one of these covenants by the issuer may give creditors the right to declare a default and accelerate all amounts owed by the borrower (i.e., demand the immediate repayment of the principal and matured interest).<sup>141</sup> One type of such protective covenant are financial covenants, which establish certain ratios (typically based on information derived from a firm's financial statement) that the issuer must meet periodically (i.e., on a yearly or quarterly basis). Typically, failure to comply with these ratios then triggers an event of default under the terms of the indenture.<sup>142</sup>

---

<sup>138</sup> See *infra* Table 3, column (3).

<sup>139</sup> In addition to establishing the principal amount, interest, maturity and other payment terms of the issued bonds, an indenture contains various covenants the issuer must adhere to. Investors in debt instruments rely on such contractual covenants since for the most part, corporate law provides limited protection to bondholders, who must worry not only about mismanagement and self-dealing by directors and officers, but also about shareholder expropriation of creditor wealth (e.g., payment of excessive dividends, claim dilution, and excessive risk-taking, among others). See Clifford W. Smith & Jerold B. Warner, *On Financial Contracting: An Analysis of Bond Covenants*, 7 J. FIN. ECON. 117, 118–19 (1979).

<sup>140</sup> In negotiating the strictness of these covenants issuers and investors face a tradeoff – restricting managerial discretion may limit the opportunistic behavior, but it may also constrain managers from taking actions that maximize firm value (and reduce the probability of default). See Smith & Warner, *supra* note 139, at 118–19. In addition, the breach of a covenant may not be associated with the early stages of financial distress, leading to unnecessary renegotiations. See Ilia D. Dichev & Douglas J. Skinner, *Large-Sample Evidence on the Debt Covenant Hypothesis*, 40 J. ACCT. RES. 1091, 1093 (2002) (finding that covenant breaches by debt issuers are common and not necessarily indicative of the financial distress).

<sup>141</sup> See Albert Choi & George Triantis, *Market Conditions and Contract Design: Variations in Debt Contracting*, 88 N.Y.U. L. REV. 51, 57 (2013).

<sup>142</sup> The other general type of covenant is a restrictive covenant pursuant to which the issuer promises

Restrictive and financial covenants are more likely to be included (and be tighter, if included) in situations where investors are concerned about issuer moral hazard (i.e., the issuer's incentive or propensity to engage in inefficient risk-taking).<sup>143</sup> Thus, if investors worry that the moral hazard problem associated with CACs may lead the issuer to undertake riskier actions that increase the likelihood of financial distress,<sup>144</sup> one could expect financial covenants to be tighter in bonds containing CACs, thus mitigating the costs associated with such clauses.<sup>145</sup> Such systematic differences between instruments with and without CACs in the structure and content of these restrictive and financial covenants would add a nuance to the interpretation of the results presented above. First, tighter financial covenants, which by restricting the issuer's ability to take certain actions reduce the probability of financial distress and non-payment, could explain in part the lower spread observed in the sample for bond issues containing a CAC.<sup>146</sup> Second, from the issuer's perspective, the value (or at least attractiveness) of a CAC is somewhat reduced by the presence of such tighter covenants, which restrict its abilities to take certain actions and subject it to continuous monitoring and review by the bondholders.

To verify whether the inclusion of CAC coincides with tighter financial covenants, I reviewed the relevant sections in the indentures governing the bonds in the sample to identify the inclusion and structure of financial covenants. The most common financial covenant is the leverage ratio, which is present in 114 of the 142 indentures in the post-reform sample. This type of covenant generally provides that the ratio of total debt of the company to the company's total assets (both balance sheet accounting measures) cannot be higher than a given amount for the

---

to refrain from taking certain actions (i.e., sell assets or declare a dividend) unless a prescribed set of conditions is met. *Id.*

<sup>143</sup> *Id.* at 58–59. In general, financially sound issuers generally face fewer restrictions than their more risky counterparts. See, e.g., Sattar A. Mansi, Yaxuan Qi & John K. Wald, *Debt Covenants, Bankruptcy Risk and Issuance Costs*, 19–22 (Apr. 2012), [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1805038](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1805038); see also Michael Bradley & Michael Roberts, *The Structure and Pricing of Corporate Debt Covenants*, 16–21 (May 2004), [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=466240](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=466240).

<sup>144</sup> See *supra* notes 38–40 and accompanying text.

<sup>145</sup> In other words, there may be an efficient trade-off across contractual provisions: investors may be acquiescing to the inclusion of CACs (which are valuable to issuers), but asking that in return the issuer agrees to tighter covenants (which are valuable to investors). The tightness of financial covenants could also be correlated with the inclusion of a CAC if issuers of bonds containing CACs have qualities that make the issuer otherwise less risky from the bondholders' perspective. Thus, if investors agree to the inclusion of CACs in situations where the issuers are of a "higher quality" (particularly in some dimension that one cannot observe or measure), then one would expect to see less restrictive covenants and lower spreads in bond issues containing CACs.

<sup>146</sup> However, it is hard to imagine that the tighter financial covenants would outweigh the perceived additional risk brought by the inclusion of the CAC in a way that results in the observed lower average spreads.

previous four fiscal quarters. The second most common financial covenant is the interest coverage ratio, contained in 42 of the indentures in the post-reform sample, which generally provides that the ratio of the earnings of the company to the company's total interest payment obligations must be higher than a given amount for the previous four fiscal quarters. A higher maximum leverage ratio and a lower minimum interest coverage ratio provide the issuer with more financial slack. Conversely, a lower maximum leverage ratio and a higher minimum interest coverage ratio place tighter restrictions on the issuer.

TABLE 4. FINANCIAL COVENANTS & CAC ADOPTION  
(JUL. 2007 – DEC. 2013)

	(1)	(2)	(3)	(4)
	<i>Leverage Ratio</i>		<i>Cover Ratio</i>	
CAC	Mean	Median	Mean	Median
Yes	1.5	1.5	2.712	2.815
No	1.35	1.4	2.5	2.5
Difference	-0.15		-0.212	
p-value	0.158		0.092	

*Notes:* Columns (1) and (2) present summary statistics on financial covenants prescribing a maximum leverage ratio, which is present in 114 of the 142 indentures in the post-reform sample. This type of covenant typically provides that the ratio of total debt of the company to the company's total assets cannot be higher than a given amount for the previous four fiscal quarters. Columns (3) and (4) present summary statistics for financial covenants prescribing a minimum interest covera ratio, contained in 42 of the indentures in the post-reform sample, which typically provides that ratio of the earnings of the company to the company's total interest payment obligations must be higher than a given amount for the previous four fiscal quarters. *P*-values come from a two-tailed test that the mean threshold financial ratio for the issues containing a CAC are equal to the mean threshold financial ratio of issues not containing a CAC.

Table 4 provides summary statistics for the thresholds associated with these financial covenants.<sup>147</sup> The average prescribed leverage ratio is slightly lower for bond issues not containing a CAC (1.350) than for those containing CACs (1.500), which suggests that agreements containing a CAC actually provide the issuer with more financial slack.<sup>148</sup> However, this difference is not statistically significant and is smaller if one looks at the median values of the ratios instead.<sup>149</sup> On the other hand, the average prescribed interest cover ratio is higher for issues containing a CAC (2.712) than for those not containing such clauses (2.500).<sup>150</sup> Although small, the difference is statistically significant at the 10% level.<sup>151</sup> This suggests that firms issuing bonds with CAC face a tighter interest cover ratio covenant; however given the low number of observations (and inherent self-selection issues involved), it is difficult to draw any strong inferences.

These small, inconsistent and statistically insignificant differences between the financial covenants of the bond issues that contain CACs and those bond issues that do not provide some reassurance that the inclusion of CACs is not otherwise being accompanied by tighter restrictive covenants on the issuers. This, in turn, allows us to establish a clearer link between the adoption of CACs and the resulting lower spreads documented earlier in this article.

#### B. CACs & Issuer Credit Rating

The results presented thus far indicate that corporate bonds that contain a CAC command lower spreads than bonds not containing such clauses, thus lowering the cost of capital for those firms able to issue bonds incorporating CACs. This link between CACs and yield spreads was documented for the entire sample of bonds, which includes bonds of varying credit quality.<sup>152</sup> Notably, several of the existing studies in this area have not found such a relationship to exist across the entire spectrum of bonds, finding that while CACs lower the spread for some issuers, they

---

<sup>147</sup> The data is presented at the bond issue level. The results are qualitatively similar if the data is aggregated at the issuer-year level – the differences across groups is actually slightly smaller. The data can be collapsed in this manner since for every company in the dataset, the values of the contractual variables considered in these analyses (i.e., the presence of a CAC and the financial covenants) are identical across multiple issuances by the same company in a given calendar year. *See supra* note 123 and accompanying text.

<sup>148</sup> *See infra* Table 4, column (1).

<sup>149</sup> The median prescribed leverage ratios for indentures that contain a CAC is 1.50, while the median for those that do not contain a CAC is 1.40. *See infra* Table 4, column (2).

<sup>150</sup> *See infra* Table 4, column (3).

<sup>151</sup> The difference in the median prescribed interest cover ratios between indentures that contain a CAC (2.815) and those that do not (2.500) is slightly larger. *See infra* Table 4, column (4).

<sup>152</sup> *See supra* Part IV.A.1.

increase it for others.<sup>153</sup> Whether higher or lower credit quality issuers can benefit the most (or even at all) from the adoption of a CAC is therefore an open question in the literature.<sup>154</sup>

Theoretically, it is not clear whether low or high credit quality issuers should benefit the most from adopting CACs in their bond agreements (at least in a way that affects the interest rate spread). As noted earlier, in deciding whether or not to include a CAC, contracting parties will balance the benefits (e.g., quicker and less costly reorganizations) against the costs (e.g., issuer moral hazard).<sup>155</sup> To the extent that less creditworthy issuers are more likely to run into financial difficulties in the future, one would expect them to benefit more from the flexibility that CACs would afford in the event that they need to restructure their debt. On the other hand, riskier issuers may be more likely to engage in activities that increase the prospects of becoming financially distressed, especially if they are already overleveraged.<sup>156</sup> Arguably, in this sense, higher credit quality issuers pose less risk, but can still benefit from the flexibility provided by CACs.

In the next set of analyses, the bond issues in the sample are divided into two groups based on the highest credit rating furnished as part of the registration statement filed with the SVS.<sup>157</sup> One group contains the bond issues for which the highest credit rating was AA or higher; the other group includes the bond issues for which the highest credit rating was AA- or lower.<sup>158</sup> This particular cut-off was chosen because it is the one that divides the sample most evenly into two groups. In the entire sample, 104

---

<sup>153</sup> Eichengreen and Mody's estimates indicate that the inclusion of CACs increase the spread for lower rated sovereign issuers, but decreases them for higher rated issuers. Eichengreen & Mody, *supra* note 39, at 256–59. Becker et al. find a similar relationship in one of the time periods they study, but in another time period find the opposite relationship (i.e., CACs increase the spread for higher rated sovereign issuers, but decreases them for lower rated issuers). Becker et al., *supra* note 39, at 139–43. Bardozzetti and Dottori find that CACs decrease yield spreads for issuers in the middle of the credit rating distribution, but not for those at the top or the bottom. Bardozzetti & Dottori, *supra* note 57, at 287–89. Bradely and Gulati also document differing effects of CACs on the spreads of low and high rated issuers. Bradley & Gulati, *supra* note 56, at 2079–86. Another study that finds similar effects of CACs for low and high rated issuers found no effect at all for either. Gugiatti & Richards, *supra* note 55, at 436–43.

<sup>154</sup> And, as noted earlier, these studies have focused on sovereign bonds, devoting minimal—if any—attention to corporate bonds. *See supra* notes 68–71 and accompanying text.

<sup>155</sup> *See supra* notes 53–55 and accompanying text.

<sup>156</sup> The creditor-shareholder conflict becomes more pronounced when issuers are highly levered, as shareholders have greater incentives to undertake certain risky and value destroying activities. *See* Smith & Warner, *On Financial Contracting*, *supra* note 139, at 153–54.

<sup>157</sup> Firms issuing bonds must obtain two credit ratings, which are submitted as part of the registration materials filed with the SVS. *See* Law No. 18405 arts. 76, 88, Octubre 22, 1981 DIARIO OFICIAL [D.O.] (Chile); *supra* note 98 and accompanying text.

<sup>158</sup> Although higher rated issuers are more likely to adopt a CAC (55.7%) than their lower credit quality counterparts (51.9%), the difference is small and not statistically significant (the p-value from a two-tailed test that the average CAC adoption rate for high rated issuers is equal to the adoption rate of low rated issuers is 0.6486).

of the bonds have a credit rating of AA- or lower while 91 have a credit rating of AA or AA+; while in the post-reform period of the sample, 81 of the bond issues belong to the low credit rating group, while 61 belong to the high credit rating group.<sup>159</sup>

One can then estimate the baseline specification (1) separately on each subset of issuers (though excluding credit rating fixed effects).<sup>160</sup> The results for these specifications, which are presented in Table 5, strongly suggest that both high and low rated issuers benefit in a similar manner from the inclusion of a CAC in the indentures governing their bonds. Let us focus on the subset of bonds issued in the post-reform period. For issuers in the high credit rating group, the coefficient on  $CAC_i$ , -0.245, represents about 23% of the average spread in that subset of the sample and is statistically significant.<sup>161</sup> Similarly, for lower rated issuers, the coefficient on  $CAC_i$ , -0.372, represents about 26% of the average spread in that subset of the sample.<sup>162</sup> The results are qualitatively similar if we include the bonds issued in during the pre-reform period portion of the sample.<sup>163</sup>

---

<sup>159</sup> Determining which credit rating to use and establishing a cut-off (or cut-offs) to divide the sample into two (or more) groups is to some extent arbitrary. In fact, many of the existing articles examining the effects of CACs on the yield spreads of sovereign bonds have used different cut-offs. See Häselser, *Collective Action Clauses in International Sovereign Bonds*, *supra* note 51, at 901.

<sup>160</sup> This is the method followed by Bradley and Gulati in measuring the differing effects of CACs on the spreads of low and high rated sovereign issuers. Bradley & Gulati, *supra* note 56, at 2079–86. One could also estimate a single specification which includes an interaction term between the CAC indicator variable and the credit quality indicator variable. However, estimating a single specification with an interaction term may not be the most suitable method to measure the different effects that adopting a CAC has on the interest rate spreads demanded by investors from issuers of high and low credit quality. Such a joint model would be appropriate if we expected only the inclusion of a CAC in the indenture to interact with the creditworthiness of the issuer in determining the interest rate spread. However, some of the other covariates in the model (such as the issuer's leverage) may also interact with the creditworthiness of the issuer in determining the resulting spread demanded by the market. A single specification would force the coefficient on all these other covariates to be the same for low and high credit quality issuers.

<sup>161</sup> See *infra* Table 5, column (1).

<sup>162</sup> See *infra* Table 5, column (2).

<sup>163</sup> For issuers in the high credit rating group, the coefficient on  $CAC_i$ , -0.302, represents about 29.8% of the average spread in that subset of the sample and is statistically significant. Similarly, for lower rated issuers, the coefficient on  $CAC_i$ , -0.376, represents about 27.6% of the average spread in that subset of the sample. See *infra* Table 5, columns (3) and (4).

TABLE 5. ADOPTION OF CACS, CREDIT QUALITY, AND SPREADS

	(1)	(2)	(3)	(4)
	<i>Post Reform Issues</i>		<i>All Issues</i>	
	High Rating	Low Rating	High Rating	Low Rating
CAC	-0.245** [0.106]	-0.372* [0.217]	-0.302*** [0.110]	-0.376* [0.214]
LogMaturity	0.0181 [0.0600]	-0.0267 [0.0689]	0.0326 [0.0539]	-0.0386 [0.0626]
LogAssets	0.0892 [0.0777]	-0.0088 [0.0975]	0.106* [0.0597]	0.0137 [0.0809]
LogAmount	-0.0447 [0.106]	-0.113 [0.159]	-0.0844 [0.0882]	-0.0415 [0.118]
Debt/Equity	0.2630* [0.134]	-0.0254 [0.104]	0.2130** [0.101]	-0.0323 [0.103]
CoverRatio	0.0054 [0.0062]	0.0000 [0.0105]	0.0009 [0.0074]	-0.0024 [0.0101]
Mean				
Outcome	1.0842	1.4254	1.0120	1.3608
Observations	61	81	91	104
R-squared	0.498	0.273	0.417	0.278

*Notes:* Robust standard errors clustered at the issuer level in brackets (\* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%). The outcome in columns (1) - (4) is the spread of issue *i*, defined as the interest rate on bond *i* and the corresponding bond issued by the Chilean Central Bank with a similar maturity. Columns (1) and (2) include bonds issued between July 1, 2007 and December 31, 2013. Columns (3) and (4) include bonds issued between January 1, 2005 and December 31, 2013. Columns (1) and (3) restrict the analyses to issues that obtained a credit rating equal or higher than AA-. Columns (2) and (4) restrict the analyses to issues that did not obtain a credit rating equal or higher than AA-. The explanatory variables of interest are: (i) *CAC*, an indicator variable equal to 1 if a the bond agreement governing issue *i* included a collective action clause; (ii) *LogAssets*, the natural logarithm of the issuer's total assets for the fiscal year preceding the bond issue, (iii) *LogAmount*, the natural logarithm of the aggregate principal amount the bonds issued of issue *i*; (iv) *LogMaturity*, the log of the term of bond *i*; (v) *Debt/Equity*, the ratio of total debt to total shareholder equity as these appear in the end of year balance sheet for the fiscal year preceding the bond issue; and (vi) *Cover Ratio*, the ratio of earnings before interest and taxes to fixed charges for the fiscal year preceding the bond issue. All regressions include a set of year fixed effects.

The evidence thus indicates that all issuers, regardless of their credit rating, can benefit from the inclusion of CACs, namely lower interest rates. This result contrasts with the results documented in earlier studies in which CACs are found to generally benefit only a subset of issuers.<sup>164</sup>

## V. CONCLUSION

The enabling structure of corporate law generally allows parties to contract freely in order to promote their best interests, leading to socially optimal arrangements.<sup>165</sup> This precept should be particularly true in the context of corporate bonds, which are governed by complex, negotiated indentures and are purchased and held by large, sophisticated investors.<sup>166</sup> Despite these market realities, the regulation of the terms and conditions of public corporate debt in a number of countries has traditionally contained numerous mandatory rules, including prohibitions on the inclusion of CACs. Some countries, such as Chile and Germany, have recently repealed pre-existing legal restrictions on the use of CACs.<sup>167</sup> However, the laws in other countries, most notably the United States, continue to prohibit the use of CACs.<sup>168</sup> The evidence presented in this Article strongly suggests that a

---

<sup>164</sup> See *supra* note 153 and accompanying text.

<sup>165</sup> See, e.g., Lucian Arye Bebchuk, *The Debate On Contractual Freedom In Corporate Law*, 89 COLUM. L. REV. 1395 (1989); Frank H. Easterbrook & Daniel R. Fischel, *The Corporate Contract*, 89 COLUM. L. REV. 1416, 1418 (1989) (“No one set of terms will be best for all; hence the ‘enabling’ structure of corporate law.”); Henry Hansmann & Reinier Kraakman, *The End of History in Corporate Law*, 89 GEO. L.J. 439, 444–49 (2001); Fred S. McChesney, *Economics, Law, and Science in the Corporate Field: A Critique of Eisenberg*, 89 COLUM. L. REV. 1530, 1544 (1989); Roberta Romano, *Answering the Wrong Question: The Tenuous Case for Mandatory Corporate Laws*, 89 COLUM. L. REV. 1599, 1615–16 (1989); Edward P. Welch & Robert S. Saunders, *What We Can Learn From Other Statutory Schemes: Freedom And Its Limits In The Delaware General Corporate Law*, 33 DEL. J. CORP. L. 845, 860 (2008).

<sup>166</sup> See Roe, *supra* note 33, at 277–79 (asserting that the protection of individual investors through the voting prohibition needs to be reconsidered in light of the current situation where institutional investors hold most public debts); Schwartz, *supra* note 33 at 631–32; Kahan, *supra* note 36, at 1060–62. The concentrated and sophisticated nature of modern institutional intermediaries, particularly in the public credit markets, also makes it unlikely that bondholders will be taken advantage of, as was feared at the time when the TIA was drafted and enacted. See Roe, *supra* note 33, at 277–79 (asserting that the protection of individual investors through the voting prohibition needs to be reconsidered in light of the current situation where institutional investors hold most public debts). Historically, Section 316(b) of the TIA was adopted as a response to the financial crises of the 1930s resulting from the Great Depression and was aimed at preventing out-of-court debt restructurings from being forced upon minority bondholders by corporate insiders (such as large shareholders or banks) seeking to further their own interest at the expense of the (possibly uninformed) minority bondholders. See Eichengreen & Mody, *supra* note 39, at 250 n.2; Schwartz, *supra* note 33, at 631–32; and George W. Shuster, *The Trust Indenture Act and International Debt Restructurings*, 14 AM. BANKR. INST. L. REV. 431, 437 (2006).

<sup>167</sup> See *supra* notes 86–89 and accompanying text (discussing the German reform), *supra* notes 80–83 and accompanying text (discussing the Chilean reform).

<sup>168</sup> See *supra* notes 41–48 and accompanying text.

mandatory prohibition of CACs is misguided public policy and, more generally, informs the general debate surrounding the use of CACs in sovereign and corporate debt where allowed by applicable law.

The recent legal reform in Chile, which repealed a preexisting ban on CACs, has yielded measurable economic effects as contracting parties have embraced the flexibility of the new regime. Bonds issued with a CAC after the reform have spreads that are, on average, 20% lower than those bond issues that do not include such clauses.<sup>169</sup> The existence of this negative correlation between the inclusion of a CAC and the interest rate spread of a bond suggests that issuers and investors are adopting CACs in transactions where their inclusion results in optimal, more efficient arrangements that create economic value. The average effect, 28.5 basis points, translates to annual interest savings of over U.S. \$415,000 for the average offering which add up to approximately U.S. \$6.0 million during the life of the average bond in the sample.<sup>170</sup>

Generally, these findings inform a number of ongoing debates surrounding the use of CACs. First, they provide a positive assessment of the recent legal reforms in Chile and Germany which repealed existing bans on the use of CACs in corporate debt. From a practical standpoint, the results suggest that corporate issuers and investors should strongly consider the inclusion of CACs in the instruments governing their bonds when allowed by applicable law and provide additional support for the inclusion of CACs in sovereign debt, an issue that has recently received much attention. From a policy perspective, the experience in Chile provides further support for the repeal of the longstanding ban on CACs for corporate bonds issued under U.S. law, a repeal that would result in lower interest rates, thereby reducing the cost of capital for issuers and fomenting economic growth.<sup>171</sup>

---

<sup>169</sup> See *supra* Part IV.A.1.

<sup>170</sup> This result is robust to including various controls for issuer characteristics and is replicated in specifications that include issuer fixed-effects, confirming that these results are not driven by unobservable variables. See *supra* Part IV.A.2. In addition, the evidence indicates that including a CAC can potentially benefit all issuers regardless of their credit rating. See *supra* Part IV.B.

<sup>171</sup> For a brief description of some of the proposed modifications to the TIA, see *supra* note 48 and accompanying text.