Review of New Enhanced Collective Action Clauses in Sovereign Debt Terms and the Resulting Impact on Borrowing Costs

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April 2, 2018

I. EXECUTIVE SUMMARY

In 2014, G-20 Leaders endorsed the use of new enhanced collective action clauses in sovereign debt offerings that would increase the chances of an orderly restructuring in the event of a sovereign default. Collective action clauses have been a feature of debt issued under U.K. law for some time, and prior to 2014, were becoming more common in debt issued under New York law. However, in general, the structure of the pre-2014 clauses allowed for only series-by-series voting for a given bond issue. In practice, this structure allowed so-called "hold-out" creditors to take a relatively small position in a particular bond series and effectively block a restructuring effort in the event of distress or default. To address this issue, the new enhanced clauses allow for aggregation of voting across series, making it considerably more difficult to acquire a blocking position. In addition, these new enhanced collective action clauses have been complimented by modified *pari passu* provisions that prevent the requirement of ratable payments to creditors in the event of a restructuring. While a number of different studies have looked at the costs associated with collective action clauses in sovereign debt issues more broadly, none appear to have specifically examined the costs associated with these new clauses. This paper explores the evolution of both the enhanced collective action clauses and the modified *pari passu* language and examines the impact the new clauses have had a sovereign borrowing costs since their introduction. Ultimately, this paper finds that the new enhanced collective action clauses may be associated with increased spreads over benchmark securities at issuance, and that the effect may be more pronounced for investment-grade issuers. However, given the limited amount of time the new clauses have been in use and the resulting limited sample size, additional study is warranted before a definitive conclusion can be reached.

II. BACKGROUND ON SOVEREIGN DEBT RESTRUCTURING AND COLLECTIVE ACTION CLAUSES

Evolution of Sovereign Restructuring Tools

Sovereign financial troubles have likely existed as long as the idea of sovereign governments themselves, however, the first recorded default occurred in Greece in the 4th century BC, when a collection of cities decided not to pay back their debts to temple of Delos.[1] Since that time, the scale and scope of sovereign borrowing has evolved along with the tools and mechanisms to deal with the restructuring of that debt.

In each era, the mechanisms have adapted to the needs of the time. For example, in the middle of the 20th century, when sovereign borrowing was largely through official channels and on a bilateral basis, the informal group of sovereign creditors referred to as the Paris Club was created. The club, whose mission is "to find coordinated and sustainable solutions to the payment difficulties experienced by debtor countries" was originally brought together in 1956 to deal with Argentina's financial troubles. The central benefit of the group was that it effectively created a single forum for negotiation to allow for the successful restructuring of debt. To date, the Paris Club has reached 433 agreements with 90 debtor countries with a total debt of $583 billion.[2] As global financial markets developed and syndicated bank loans became a significant source of sovereign credit, another informal group referred to as the London Club would be created for private creditors to facilitate similar sovereign workouts.[3]

However, as global financial markets began to further integrate in the 1980s, more countries would begin to issue traded bonds that would be widely held by a diverse set of

[1] (The Economist, 2014)
[2] (The Paris Club, 2017)
[3] (Brown & Bulman, 2009, p. 272)

investors.[4] With the most established markets in New York and London, the vast majority of this debt would be issued under U.S. and U.K. law.[5] The challenge, however, is that in the event of a needed restructuring, negotiating with a diverse set of bondholders becomes significantly more complicated in the absence of a formal framework like the U.S. Bankruptcy Code or informal frameworks like the Paris and London Clubs. Bonds issued under U.K. law have historically included provisions that allow for the terms of the debt to be amended, if approved by a certain majority of bondholders. However, because of slight differences in the evolution of the law, these so-called collective action clauses were originally absent from U.S. issued sovereign debt.[6] In practice, this creates a tremendous challenge in the need to secure agreement from 100 percent of the creditors for any restructuring.

In the early 2000s, in the wake of Argentina's historic 2001 default, the absence of collective action clauses in U.S.-issued debt would become a concern for policymakers as Argentina struggled to find a resolution with its creditors. With a push from Washington, market participants would ultimately ascent to the inclusion of these series-by-series clauses in newly issued U.S. debt. Mexico was the first to issue a bond with new collective action clauses under New York law in February of 2003. Within two years, nearly 95 percent of the sovereign debt issued under New York law would include such clauses. [7]

[4] (Krueger, 2002, p. 1)
[5] (IMF Staff, January 2017, p. 4)
[6] (Stolper & Dougherty, 2017) p. 5
[7] (Quarles, Fall 2010, p. 1)

Challenges to Collective Action Clauses

While collective action clauses were generally considered effective in providing a mechanism to restructure (one that had been used successfully by a number of countries, including Belize, the Seychelles, and St. Kitts and Nevis)[8], limitations eventually emerged.

In the case of Greece's 2011 restructuring, where collective action clauses had been included in the terms of the debt, they were shown to be ineffective in allowing a complete restructuring to proceed. In that case, with debt issued under U.K. law, holdout creditors were able to block the restructuring of roughly €6.5 billion in debt, which amounted to 30 percent of Greece's foreign law debt.[9] Holdouts were able to accomplish this because voting for the restructuring proposal occurred on series-by-series basis, and thus a smaller investment in a single bond series allowed holdouts to prevent restructuring of large portions of the debt. But the limitations of the existing sovereign restructuring framework also emerged on other fronts.

The Rise of Sovereign Litigation and the Pari Passu Ruling

Over the last 40 years, the sovereign borrowing landscape has become more complicated with the rise of distressed debt investors and sovereign litigation. While distressed debt investing is not a new strategy, it was not until more recently that sovereign debt distressed investing became more accessible. Research by Shumacher, Trebesch, and Enderlein (2014) has shown that the erosion of sovereign immunity over the last several decades has fueled an increase in distressed sovereign debt investing. At one point, there was very little hope of recovering assets in litigation from a sovereign, but as the legal landscape changed in the U.S. and U.K. in the mid-1970s, sovereign immunity was slowly chipped away and the doors opened for various

[8] (IMF Staff, October 2014, p. 18)
[9] (IMF Staff, October 2014, p. 6)

litigation strategies. This can be seen in the data, as debt crises involving litigation have risen from less than 10 percent before the 1990s to more than 50 percent in recent years, with 75 percent of that litigation coming from distressed debt investors.[10]

Shortly after Argentina defaulted on its debt in 2001, multiple hedge funds that specialized in distressed debt began to acquire positions, most notably Elliott Management, through its subsidiary NML Capital. One feature of the Argentine debt acquired by these investors, and standard across nearly all sovereign debt, was a *pari passu* clause. The clause specified that "The Bonds rank, and will rank, *pari passu* in right of payment with all of the Issuer's present and future unsubordinated External indebtedness." [11] The generally accepted interpretation of this clause was that it prevented the sovereign from borrowing additional funds and subordinating the old debt.[12] However, when Argentina attempted to restructure its debt in 2005, NML and others rejected the proposed deal and sued in New York court, under which law the bonds were issued, claiming that the *pari passu* provision prevented Argentina from making any payments on the restructured debt unless it also made "ratable" payments on the original debt. In 2012, the U.S. Second Circuit Court ruled against Argentina and decided to block the country from making any payments to the restructured debt holders unless it also made payments to the holdout creditors. This ruling fundamentally changed the landscape for sovereign debt restructuring in that it removed any incentive to accept a restructuring proposal from a sovereign, as it would always make sense to hold out for a better deal.

[10] (Schumacher, Trebesch, & Enderlein, May 2014, pp. 1-2)
[11] (Buchheit & Martos, September 2014, p. 491)
[12] (Buchheit & Martos, September 2014, p. 491)

Strengthening the Contractual Framework

The challenges of series-by-series collective action clauses and the ruling on the *pari passu* provision ultimately led policymakers to believe that updates to the contractual framework would be necessary to improve the orderliness and predictability of sovereign debt restructurings. To address the changing landscape, staff at the Treasury Department in Washington convened an informal Sovereign Debt Roundtable in the spring of 2013. The group, comprised of experts from both government and the private sector, was brought together with the goal of developing modifications to the existing contractual framework that would help to address the two challenges related to the *pari passu* ruling and the limitations of series-by-series voting. The group would ultimately produce model language for both new *pari passu* provisions and enhanced collective action clauses that would allow for voting on foreign law bond restructurings to be aggregated, thereby making it more difficult for holdout creditors to acquire a blocking position in any single series. [13] This model language would be adopted and endorsed by the International Capital Markets Association (ICMA), an industry group that represents a wide range of capital markets participants.

While a number of different proposals were considered for dealing with the U.S. court's interpretation of the *pari passu* clause, including doing away with the clause entirely, a rather straightforward solution was ultimately adopted.[14] The proposed standard ICMA clause simply disavowed the ratability issue directly by adding the underlined text below to the standard clause.

> The Notes are the direct, unconditional and unsecured obligations of the Issuer and rank and will rank pari passu, without preference among themselves, with all other unsecured External Indebtedness of the Issuer, from time to time outstanding, <u>provided, however, that the Issuer shall have no obligation to effect equal or rateable payment(s) at any time with respect to any such other External Indebtedness and, in</u>

[13] (Sobel, 2016, p. 7)
[14] (Sobel, 2016, p. 10)

particular, shall have no obligation to pay other External Indebtedness at the same time or as a condition of paying sums due on the Notes and vice versa. [15]

While expanding the *pari passu* provision was seemingly straightforward, creating more effective collective action clauses posed more of a challenge as there was a need to balance the promise of orderly and predictable restructurings with the protection of creditor and minority rights. To help limit the power of holdout creditors, the roundtable developed, and the ICMA ultimately released, two options for aggregation of voting. The first, the so-called "single limb" approach, would allow for a single cross-series vote on a restructuring plan across foreign law bonds of a particular issuer. To approve the restructuring plan, and make it binding on the minority, the debtor would need approval by 75 percent of the outstanding principal across all series of the bonds.[16] The second option, the so-called "two limb" approach would allow for aggregation of two or more series across foreign law bonds and require two thirds of the total principal across issues and 50 percent of the principal for each individual series.[17]

Given the power that these provisions would grant to debtors in a restructuring proceeding, the roundtable participants and the ICMA would ultimately include a number of provisions designed to protect minority rights. First, a uniform applicability provision would require that all bond series would be offered identical terms in the restructuring. Second, another provision would prevent the debtor from voting any of the bonds that were within its control. And lastly, enhanced transparency provisions would require the debtor to disclose its comprehensive restructuring plan to all of the creditors.[18]

[15] (International Capital Markets Association , 2014), Standard Pari Passu Provision
[16] (International Capital Markets Association , 2014), Standard Collective Action Clauses
[17] (International Capital Markets Association , 2014), Standard Collective Action Clauses
[18] (Sobel, 2016, p. 8) (International Capital Markets Association , 2014), Standard Collective Action Clauses

In October 2014, ICMA released the final model *pari passu* provision and collective action clauses for use by market participants. That same month the new provisions were endorsed by the IMF Executive Board and in November 2014, G-20 leaders called for the inclusion of the new provisions in all future sovereign debt issuances.

> ….in order to strengthen the orderliness and predictability of the sovereign debt restructuring process, we welcome the international work on strengthened collective action and *pari passu* clauses. We call for their inclusion in international sovereign bonds and encourage the international community and private sector to actively promote their use.[19]

Since that call, the market uptake has been substantial. From October 2014 through October 2016, there were a total of 228 sovereign bond issuances, of which roughly 74 percent of the nominal principal amount included the enhanced collective action clauses and the vast majority of that subset included the revised *pari passu* provision.

III. EXAMINING THE IMPACT OF THE NEW POLICY

While there has been broad uptake of the new provisions by sovereign issuers, the key question remaining is what impact these new provisions have had on the cost of borrowing. In a December 2017 review of the new clauses, IMF staff looked at a number of pricing indicators, including yields at issuance relative to a country's existing yield curve, ultimately concluding that no observable pricing effect exists. However, the IMF staff noted that a more systematic analysis would be required to make any definitive conclusions.[20] Based on a review of earlier research on collective action clauses, it might be reasonable to expect a negligible impact on higher rated issuers, while costs for lower rated issuers increase as a result of the perceived moral hazard effect of the more powerful restructuring tool. In general, the existing research appears to

[19] (Leaders, 2014)
[20] (International Monetary Fund , 2017 , p. 6)

be somewhat divided on the impact that collective action clauses have on the cost of borrowing for sovereigns. For example, Eichengreen and Mody (2004) found that the presence of collective action clauses produced divergent results based on the creditworthiness of the issuer, with clauses increasing the costs for lower rated borrowers but decreasing them for higher rated borrowers. On the other hand, Bardozzetti and Dottori (2013) found that there was a negligible spread impact for the highest and lowest rated borrowers, while the presence of clauses decreased costs for borrowers in the middle of the spectrum.

In order to examine the costs associated with these new collective action clauses, this paper will focus on the impact of pricing in the primary market. While more recent studies have examined the impacts of collective action clauses in the secondary market (e.g., Bardozzetti and Dottori), trading for many of the securities remains somewhat limited and therefore there is substantial risk that observed spreads are distorted by shallow markets. However, because the new clauses have only been used in the last three years, the dataset is somewhat more limited than those that previous studies have utilized and therefore further analysis with a larger sample is warranted.

IV. SUMMARY OF DATA AND SOURCES

The data for this research begins with the IMF's "Second Progress report on the Inclusion of Enhanced Contractual Provisions in International Sovereign Bond Contracts." In that paper, IMF staff logged each international sovereign debt issuance from the launch of the new enhanced provisions in October 2014 through the end of October 2016. For the purposes of the IMF staff report and this paper, an international issuance is one that utilizes a foreign governing law.[21] As previously noted, the IMF data from the second progress report includes 228 sovereign issuances

[21] (IMF Staff, January 2017, p. 2)

globally with a notional principal amount of $262 billion. For the purposes of this analysis, the IMF dataset was combined with issuance details collected from Bloomberg for each security. The IMF paper included information on the amount and tenor of each issuance, the relevant governing law, the structure of the issuance, and whether the terms of the debt included the modified *pari passu* provision and any collective action clauses (and the types of those clauses: enhanced, series-by-series, or European Union). From Bloomberg, further information was collected on each individual issue, including the spread to the benchmarks security at issue, whether the security was callable, whether the security was registered with the U.S. Securities and Exchange Commission (SEC), whether it was governed by Reg S, the S&P rating of the issuer, the currency of issue, and the level of the CBOE volatility index on the issue date. In the end, a complete dataset, with all necessary variables, was only available for 107 of the IMF's 228 post-October 2014 international bonds.

In addition to the issuances captured by the IMF from October 2014 through October 2016, additional data were gathered from Bloomberg on the issuances in the proceeding two years from October 2012 up until October 2014. By combining the data sets, a more comprehensive picture of market issuance can be put together. In the four-year window, data were compiled on a total of 258 bond issuances, of which $324 billion were dollar denominated and €67 billion were euro denominated. Of the bonds, 78 included the new enhanced collective action clauses and 82 included the new modified *pari passu* provision. 97 issues would be considered investment grade, that is with a S&P rating of BBB- or higher and 161 would be considered non-investment grade.

Chart 1: Issuance by Rating (EUR billons)

Source: Bloomberg

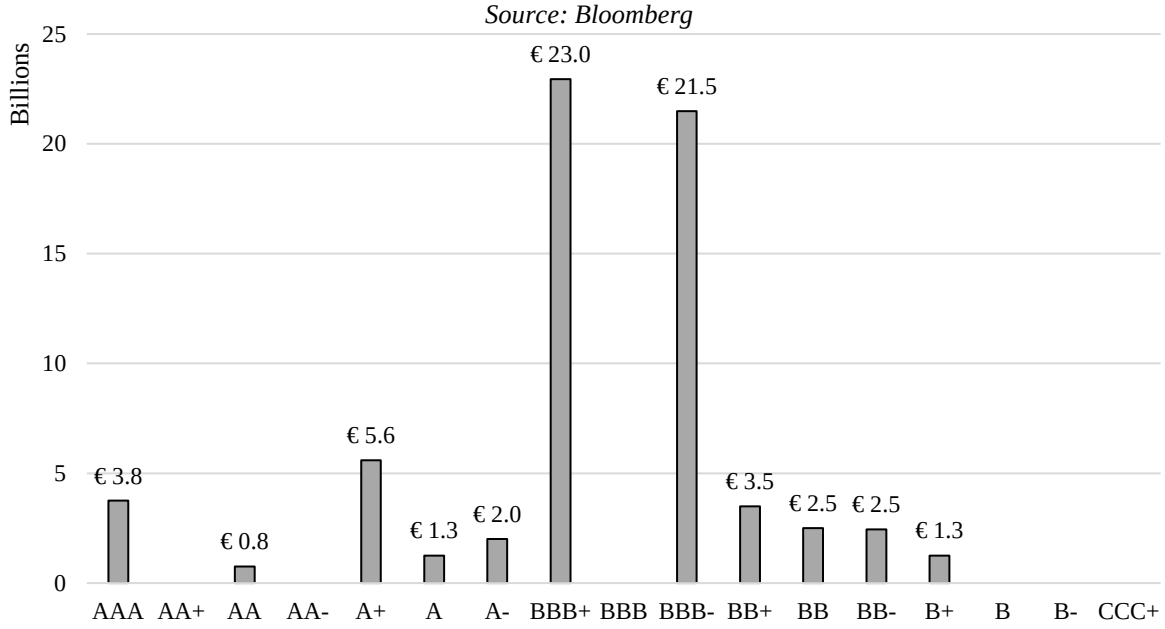


Chart: 2 Issuances by Rating (USD billion)

Source: Bloomberg

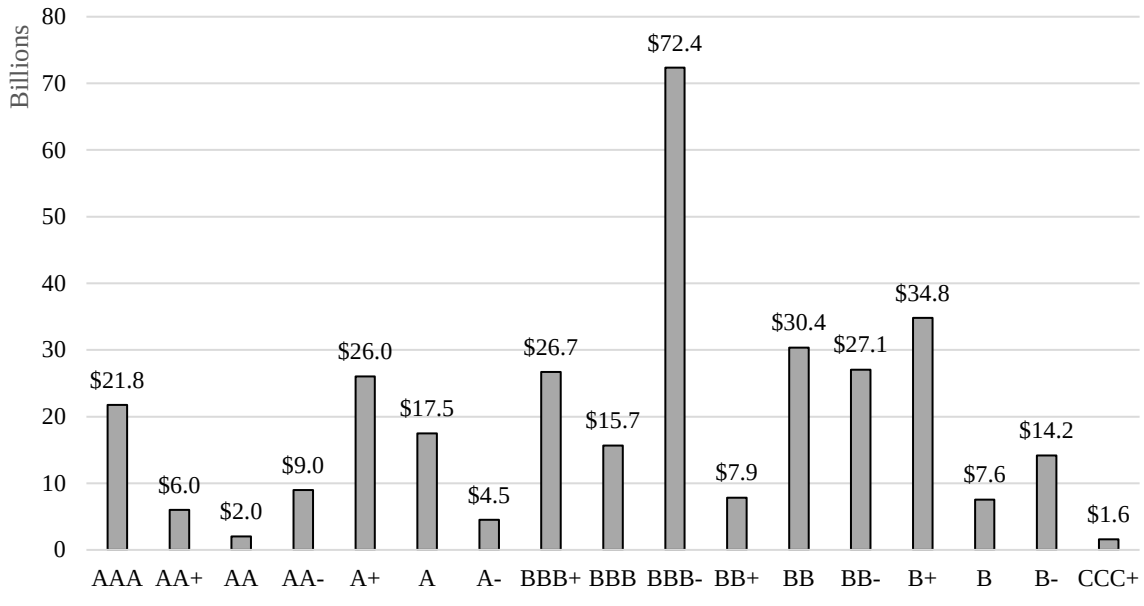


Chart 3: Average Spread to Benchmark by Rating

Source: Bloomberg

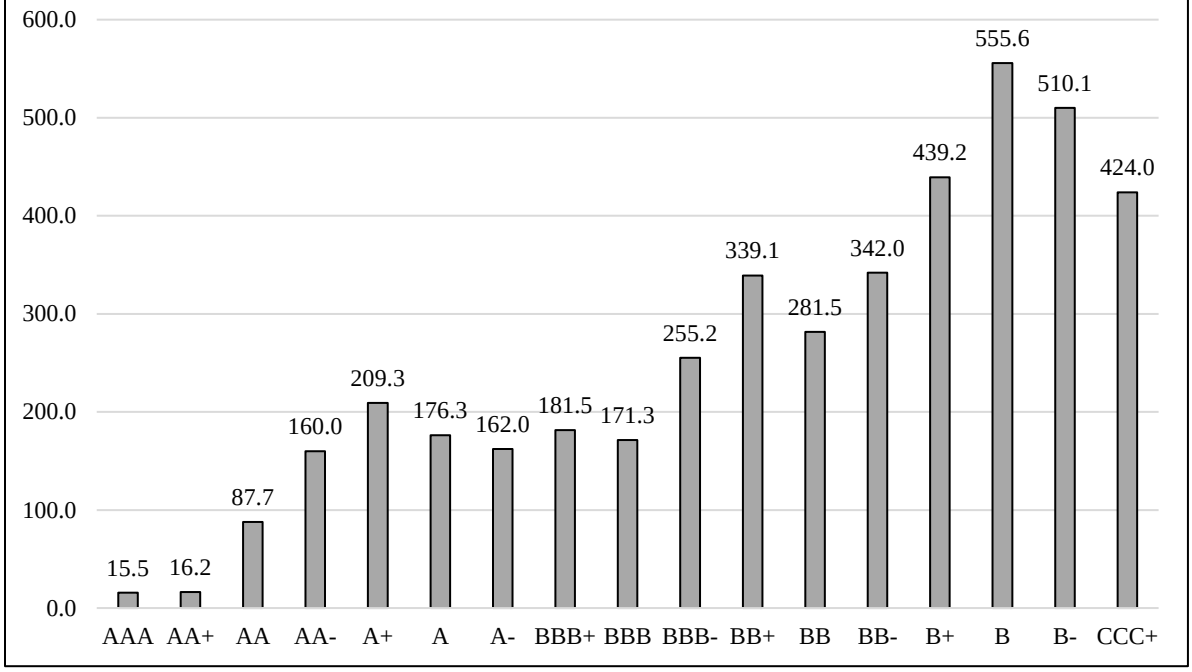
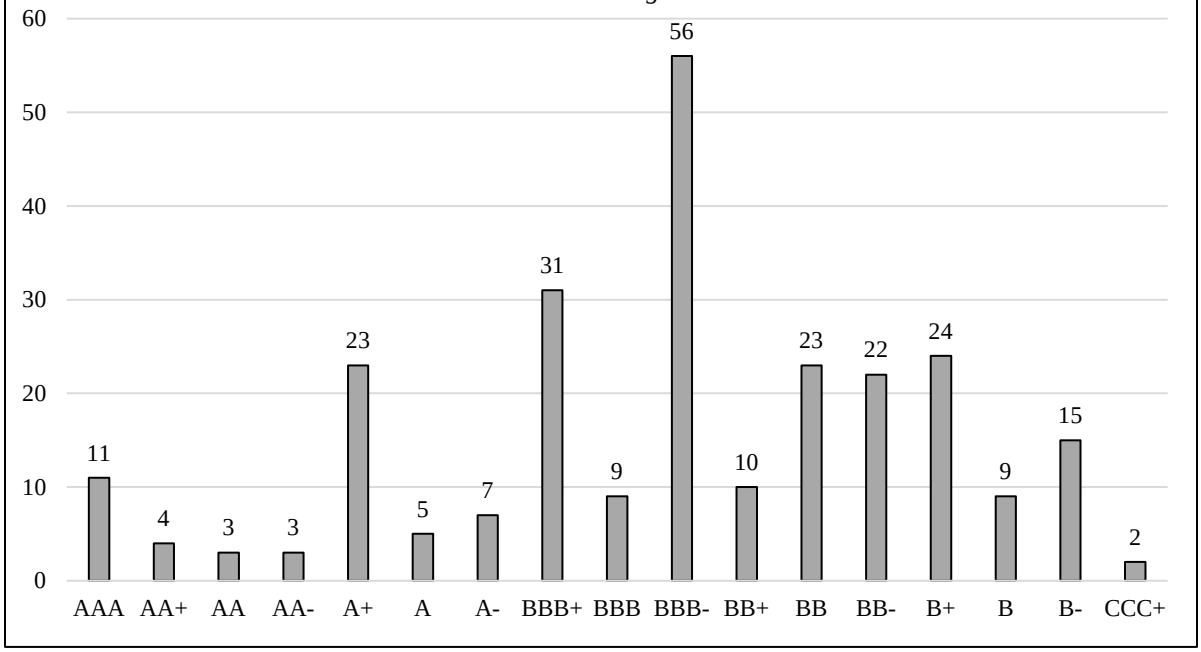


Chart 4: Enhanced Clause Issuances by Rating

Sources: Bloomberg and IMF



V. METHOD OF ANALYSIS AND FINDINGS

In examining the impact of the new clauses in the primary market, this paper utilizes the two-stage least squares methodology employed by Eichengreen and Mody to examine the costs of collective action clauses more broadly in 2004. In this case, ordinary least squares might produce biased results if a sovereign's choice to include the enhanced collective action clause was somehow driven by pricing considerations. As a result, an instrumental variable is required in order to correct for the bias. In this case, finding an instrumental variable that was both correlated with the inclusion of the enhanced collective action clauses and uncorrelated with benchmark spreads at issuance proved challenging. Ultimately, the best available variable to serve this purpose was whether the issuing country had decided to include the modified *pari passu* provision in the terms of the issuance. While this instrumental variable may not have entirely eliminated the potential for bias, it may offer an improvement over the use of a simple dummy variable for the enhanced collective action clause. Using this methodology, a first stage regression is run using the inclusion of the enhanced collective action clause as the dependent variable where a set of each bond's characteristics and external factors are used as the independent variables. For the purposes of this paper, a set of variables was chosen based on those found to be most significant in reviewing earlier research on the subject. These variables include S&P Rating, whether the issue was considered investment grade (with a rating of BBB- or higher), the log of the issuance amount, years to maturity, whether the security was registered with the SEC, whether the securities were issued under Reg S, the level of the CBOE volatility index on the date of issue, and the currency of the issue (for the purposes of this sample whether Euro or Dollar denominated). In addition, a dummy variable was included denoting whether the issue occurred before or after the introduction of the new enhanced clauses in October 2014.

Lastly, based on the findings of Bardozzetti and Dottori (2013) and employing their methodology, a variable denoting the distance from the investment grade cutoff was included to determine the effect on the highest and lowest rated issuers. With all of these factors, the relationship between the dependent variable and the predictor variables in the first stage regression is given by:

$$\textit{Enhanced Collective Action Clause (Dummy Variable)}_{it} = \alpha + \beta_1(\textit{Governing Law})_{it} + \beta_2(\textit{Post Oct 14 Dummy})_{it} + \beta_3(\textit{Callable Dummy})_{it} + \beta_4(\textit{SEC Registration})_{t} + \beta_5(\textit{Reg S})_{it} + \beta_6(\textit{Currency})_{it} + \beta_7(\textit{Maturity})_{it} + \beta_8(\textit{Log(amount issued)})_{it} + \beta_9(\textit{Issuer S\&P Rating})_{it} + \beta_{10}(\textit{CBOE VIX on Issue Date})_{it} + \beta_{11}(\textit{Modified Pari Passu Dummy}) + u_i$$

To utilize this model, the S&P ratings at issuance are converted into a numeric scale following the same method used by Ratha, De and Mohapatra (2011).

Table 1: Rating Conversion

S&P Rating	Numeric Grade
AAA	1
AA+	2
AA	3
AA-	4
A+	5
A	6
A-	7
BBB+	8
BBB	9
BBB-	10
BB+	11
BB	12
BB-	13
B+	14
B	15
B-	16
CCC+	17

Using the regression of the enhanced collective action clause, a probability is fit for each bond issue and the dummy variable is replaced. The regression is then re-run with the spread to benchmark replaced as the dependent variable, and the modified *pari passu* provision dropped as an independent variable. The relationship is then given by the equation below:

$$Log(spread\ to\ benchmark\ at\ issuance)_{it} = \alpha + \beta_1(Governing\ Law)_{it} + \beta_2(Post\ Oct\ 14\ Dummy)_{it} + \beta_3(Callable\ Dummy)_{it} + \beta_4(SEC\ Registration)_{t} + \beta_5(Reg\ S)_{it} + \beta_6(Currency)_{it} + \beta_7(Maturity)_{it} + \beta_8(Log(amount\ issued))_{it} + \beta_9(Issuer\ S\&P\ Rating)_{it} + \beta_{10}(CBOE\ VIX\ on\ Issue\ Date)_{it} + u_i$$

Drawing on the work done in previous studies, the regression was then run using several different variations of the data. First, this paper looked at the complete sample of issuances from October 2012 through October 2016, the period capturing two years before and after the introduction of the enhanced collective action clauses. Next, the sample is divided into investment and non-investment grade, following the work by Eichengreen and Mody and Bardozzetti and Dottori. Finally, the sample is constrained to just examine those countries who decided to include the enhanced collective action clauses in their issuances in two-year period immediately following their introduction, examining how the inclusion of the clauses affected their spreads alone in the pre- and post- October 2014 period.

Complete Sample Analysis

In examining the full set of issuances from October 2012 through October 2016, the first stage regression provides several indications about the type of issuers that elect to include the enhanced collective action clauses. First, as previously understood, those issuers opting to include the modified *pari passu* language are substantially more likely to also include the enhanced collective action clauses as well. This of course is largely a factor of the wide market take-up of both provisions following their introduction. Additionally, the first regression shows a significant negative relationship between the new clauses and the issues covered by Reg S, indicating bond issues outside of the United States are slightly less likely to include the clauses. However, this may be a factor of the somewhat limited data set as Sweden and Poland, two of

the most prominent issuers not to include the enhanced clauses, issued their debt in European markets and thus may have skewed the results.

Table 2: First Stage Regression Results for Inclusion of Enhanced Collective Action Clauses (Full Sample)

	Coefficient	Robust Standard Error	t	P>|t|	95% Confidence Interval	
Governing Law	0.0380	0.0282	1.3500	0.1790	-0.0175	0.0936
Post ECAC Intro	0.0922	0.0689	1.3400	0.1820	-0.0434	0.2279
Callable	0.0057	0.0249	0.2300	0.8200	-0.0433	0.0546
SEC Registration	-0.0254	0.0288	-0.8800	0.3780	-0.0821	0.0313
Reg S	-0.1022	0.0346	-2.9500	0.0030	-0.1703	-0.0340
Investment Grade	-0.0290	0.0189	-1.5300	0.1260	-0.0661	0.0082
Currency (EUR)	0.0347	0.0224	1.5500	0.1230	-0.0094	0.0787
Maturity	-0.0001	0.0006	-0.2200	0.8270	-0.0014	0.0011
Log (Amount Issued)	0.0478	0.0354	1.3500	0.1780	-0.0219	0.1175
Rating	-0.0031	0.0051	-0.6100	0.5400	-0.0130	0.0068
VIX	0.0037	0.0022	1.7200	0.0870	-0.0006	0.0080
Distance from IG	-0.0103	0.0047	-2.2100	0.0280	-0.0195	-0.0011
Modified Pari Passu	0.8177	0.0759	10.7800	0.0000	0.6683	0.9672
Constant	-0.3894	0.3466	-1.1200	0.2620	-1.0721	0.2933

Number of Observations	257
F (12,243)	679.74
Prob > F	0
R-squared	0.8787
Adjusted R-Squared	0.8722
Root MSE	0.1647

In the second stage regression, significant relationships emerge for several of the variables. Most interestingly, the inclusion of the enhanced collective action clauses does in fact appear to be associated with an increase in the spread to benchmark at issuance. This would indicate that investors may in fact require an additional return to compensate for the dilution of their rights or that the inclusion of the clause somehow indicates an issuer is more likely to need

the protection and therefore more likely to face distress. Because the dataset also includes bonds issued before the new clauses were introduced, this effect could be the result of increased spreads in the post-2014 period. However, the results show that the post-2014 bonds appear to be associated with lower spreads. As expected, the second stage regression also shows a significant relationship between the spread to benchmark and the S&P rating, indicating that as the rating declines the spread will increase. Interestingly, the distance from the investment grade rating also appears to be significant, with spreads to benchmark decreasing for the highest and lowest rated issuers, but the overall effect is minimal.

Table 3: Second Stage Regression Results for Spreads to Benchmark at Issuance (Full Sample)

	Coefficient	Robust Standard Error	z	P>|z|	95% Confidence Interval	
Enhanced CAC	0.3875	0.0582	6.6600	0.0000	0.2734	0.5016
Governing Law	0.0132	0.0240	0.5500	0.5820	-0.0339	0.0603
Post ECAC Intro	-0.2572	0.0554	-4.6400	0.0000	-0.3657	-0.1486
Callable	-0.0705	0.0580	-1.2200	0.2240	-0.1842	0.0431
SEC Registration	-0.0937	0.0348	-2.6900	0.0070	-0.1620	-0.0255
Reg S	-0.0055	0.0320	-0.1700	0.8620	-0.0682	0.0571
Investment Grade	0.2373	0.0483	4.9100	0.0000	0.1427	0.3319
Currency (EUR)	-0.0272	0.0306	-0.8900	0.3740	-0.0871	0.0327
Maturity	0.0002	0.0010	0.1700	0.8620	-0.0017	0.0021
Log (Amount Issued)	-0.0855	0.0430	-1.9900	0.0470	-0.1697	-0.0012
Rating	0.0842	0.0056	14.9300	0.0000	0.0732	0.0953
VIX	-0.0080	0.0030	-2.6600	0.0080	-0.0140	-0.0021
Distance from IG	-0.0355	0.0060	-5.9200	0.0000	-0.0473	-0.0238
Constant	2.4397	0.4185	5.8300	0.0000	1.6194	3.2600

Number of Observations	257
Wald chi2(13)	914.88
Prob > chi2	0
R-squared	0.7547
Root MSE	0.17899

Investment Grade Analysis

In examining the differences in the relationship between investment and non-investment grade issuers, the sample was divided with those issuers rated BBB- or higher considered in the investment grade group (1-10 in the scale listed earlier). As result of the divided sample, both the investment grade variable and distance from the investment grade cutoff were omitted from the analysis. With the divided sample, in the first stage regression, the earlier mentioned relationship with Reg S appears to deteriorate and the inclusion of modified *pari passu* language is the only significant relationship in the model.

Table 4: First Stage Regression Results for Inclusion of Enhanced Collective Action Clauses (Investment Grade Subsample)

	Coefficient	Robust Standard Error	t	P>|t|	95% Confidence Interval	
Governing Law	-0.0324	0.0341	-0.9500	0.3460	-0.1003	0.0355
Post ECAC Intro	-0.0099	0.0125	-0.7900	0.4320	-0.0347	0.0150
Callable	0.0494	0.0539	0.9200	0.3620	-0.0579	0.1567
SEC Registration	-0.0592	0.0615	-0.9600	0.3380	-0.1816	0.0631
Reg S	-0.0172	0.0189	-0.9100	0.3660	-0.0548	0.0204
Currency (EUR)	0.0263	0.0285	0.9200	0.3600	-0.0304	0.0830
Maturity	0.0008	0.0009	0.9300	0.3540	-0.0009	0.0025
Log (Amount Issued)	0.0792	0.0824	0.9600	0.3390	-0.0847	0.2432
Rating	0.0030	0.0034	0.8800	0.3790	-0.0037	0.0097
VIX	0.0032	0.0035	0.9200	0.3600	-0.0038	0.0103
Modified Pari Passu	0.9422	0.0603	15.6300	0.0000	0.8224	1.0621
Constant	-0.7566	0.7869	-0.9600	0.3390	-2.3215	0.8083

Number of Observations	96
F(11,84)	1992.1
Prob > F	0
R-squared	0.9536
Adjusted R-Squared	0.9475
Root MSE	0.1036

In the second stage regression of the investment grade sample, the relationship between the inclusion of the enhanced collective action clauses and post-October 2014 issues remains and appears to be more significant. This indicates that the increased spreads associated with the enhanced clauses are most pronounced for investment grade issuers. One explanation for this effect could be that despite the lower risk of distress for these issuers, the erosion of creditor rights posed by the new clauses forced a reassessment of the potential for opportunistic behavior in the event of a restructuring. However, because of the small sample size of investment grade issues, it is difficult to drawn any firm conclusions.

Table 5: Second Stage Regression Results for Spreads to Benchmark at Issuance (Investment Grade Subsample)

	Coefficient	Robust Standard Error	z	P>|z|	95% Confidence Interval	
Enhanced CAC	0.5004	0.0836	5.9900	0.0000	0.3366	0.6642
Governing Law	-0.0077	0.0880	-0.0900	0.9300	-0.1801	0.1647
Post ECAC Intro	-0.3060	0.0634	-4.8300	0.0000	-0.4302	-0.1819
Callable	-0.1912	0.0744	-2.5700	0.0100	-0.3370	-0.0455
SEC Registration	-0.2273	0.0868	-2.6200	0.0090	-0.3973	-0.0572
Reg S	-0.0320	0.1109	-0.2900	0.7730	-0.2494	0.1854
Currency (EUR)	-0.0942	0.0533	-1.7700	0.0770	-0.1986	0.0103
Maturity	0.0028	0.0013	2.1700	0.0300	0.0003	0.0053
Log (Amount Issued)	-0.1956	0.1007	-1.9400	0.0520	-0.3931	0.0018
Rating	0.1209	0.0106	11.4200	0.0000	0.1002	0.1417
VIX	-0.0048	0.0043	-1.1100	0.2660	-0.0133	0.0037
Constant	3.3288	0.9572	3.4800	0.0010	1.4526	5.2049

Number of Observations	96
Wald chi2(11)	394.45
Prob > chi2	0
R-squared	0.6748
Root MSE	0.23886

Non-Investment Grade Analysis

In the first stage regression of the non-investment grade sample, the significance of the modified pari passu provision deteriorates somewhat and weakens the ability of the model to predict the inclusion of the enhanced clauses for the second stage regression.

Table 6: First Stage Regression Results for Inclusion of Enhanced Collective Action Clauses (Non-Investment Grade Subsample)

	Coefficient	Robust Standard Error	t	P>|t|	95% Confidence Interval	
Governing Law	0.0489	0.0351	1.4000	0.1650	-0.0204	0.1182
Post ECAC Intro	0.4750	0.2484	1.9100	0.0580	-0.0159	0.9658
Callable	-0.0361	0.0260	-1.3900	0.1670	-0.0874	0.0152
SEC Registration	-0.0104	0.0280	-0.3700	0.7110	-0.0657	0.0450
Reg S	-0.1016	0.0353	-2.8800	0.0050	-0.1715	-0.0318
Currency (EUR)	0.0165	0.0359	0.4600	0.6460	-0.0544	0.0875
Maturity	-0.0005	0.0011	-0.4800	0.6310	-0.0027	0.0016
Log (Amount Issued)	0.0514	0.0450	1.1400	0.2540	-0.0374	0.1403
Rating	-0.0153	0.0078	-1.9500	0.0530	-0.0307	0.0002
VIX	0.0097	0.0043	2.2500	0.0260	0.0012	0.0182
Modified Pari Passu	0.4208	0.2504	1.6800	0.0950	-0.0740	0.9156
Constant	-0.3878	0.4076	-0.9500	0.3430	-1.1934	0.4177

Number of Observations	161
F(11,149)	325.92
Prob > F	0
R-squared	0.8622
Adjusted R-Squared	0.852
Root MSE	0.1795

In the second stage regression of the non-investment grade sample, the relationship between the enhanced collective action clauses and spreads at issuance appears to deteriorate past the point of significance. This is perhaps not surprising given the earlier finding that the

effect is more pronounced for the investment grade sample. Without a clear relationship, it is more difficult to draw conclusions, but it is possible that the market had already priced in the cost of opportunistic behavior in the event of a restructuring and therefore the effect of the new clauses is somewhat muted for the lower-rated issuers.

Table 7: Second Stage Regression Results for Spreads to Benchmark at Issuance (Non-Investment Grade Subsample)

	Coefficient	Robust Standard Error	z	P>|z|	95% Confidence Interval	
Enhanced CAC	-0.0716	0.1630	-0.4400	0.6600	-0.3911	0.2478
Governing Law	0.0342	0.0208	1.6500	0.1000	-0.0065	0.0749
Post ECAC Intro	0.1282	0.1430	0.9000	0.3700	-0.1520	0.4085
Callable	-0.0632	0.0753	-0.8400	0.4010	-0.2109	0.0845
SEC Registration	-0.0544	0.0295	-1.8400	0.0660	-0.1123	0.0036
Reg S	-0.0231	0.0233	-0.9900	0.3210	-0.0689	0.0226
Currency (EUR)	-0.0041	0.0308	-0.1300	0.8940	-0.0645	0.0562
Maturity	-0.0025	0.0010	-2.4100	0.0160	-0.0045	-0.0005
Log (Amount Issued)	-0.0162	0.0431	-0.3700	0.7080	-0.1007	0.0684
Rating	0.0442	0.0056	7.8700	0.0000	0.0332	0.0552
VIX	-0.0030	0.0048	-0.6300	0.5280	-0.0123	0.0063
Constant	2.1745	0.4289	5.0700	0.0000	1.3337	3.0152

Number of observations	161
Wald chi2(11)	262.84
Prob > chi2	0
R-squared	0.5701
Root MSE	0.10551

Enhanced Collective Action Clause Countries Only

Lastly, by examining just those countries that elected to include the collective action clauses in their post-October 2014 issuances, it may be possible to avoid the challenges of sample selection bias and endogeneity that arise in the previous regressions. Given that each country in the subsample has elected to include the clauses in their post-October 2014 issuances,

there will be less potential distortion caused by an issuer's desire to telegraph any particular signal to the market by using the new clauses. As a result, there is no need to utilize the two-stage least squares regression and ordinary least squares is employed.

The results of this regression indicate that there is no significant relationship between the inclusion of the clauses and the spreads to benchmark at issue. The most significant factors are the issuer's rating, whether the security is registered with the SEC, whether it is investment grade, and whether it Euro denominated debt.

Table 8: Regression Results for Inclusion of Enhanced Collective Action Clauses (Enhanced CAC Countries Only)

	Coefficient	Robust Standard Error	t	P>|t|	95% Confidence Interval	
Enhanced CAC	0.1131	0.0864	1.3100	0.1930	-0.0578	0.2840
Governing Law	0.0173	0.0256	0.6800	0.5000	-0.0334	0.0680
Post ECAC Intro	-0.0276	0.0860	-0.3200	0.7490	-0.1976	0.1425
Callable	-0.0112	0.0426	-0.2600	0.7940	-0.0954	0.0731
SEC Registration	-0.1344	0.0313	-4.2900	0.0000	-0.1964	-0.0724
Reg S	-0.0302	0.0271	-1.1200	0.2660	-0.0838	0.0233
Investment Grade	0.0947	0.0447	2.1200	0.0360	0.0064	0.1831
Currency (EUR)	0.0617	0.0278	2.2200	0.0280	0.0067	0.1167
Maturity	0.0010	0.0009	1.1600	0.2500	-0.0007	0.0028
Log (Amount Issued)	0.0303	0.0426	0.7100	0.4780	-0.0539	0.1145
Rating	0.0592	0.0063	9.4500	0.0000	0.0468	0.0715
VIX	-0.0015	0.0031	-0.4800	0.6330	-0.0075	0.0046
Distance from IG	-0.0032	0.0064	-0.5000	0.6170	-0.0160	0.0095
Constant	1.4945	0.4156	3.6000	0.0000	0.6728	2.3162

Number of observations	153
F(13, 139)	26.51
Prob > F	0
R-squared	0.7126
Adjusted R-squared	0.6857
Root MSE	0.11767

VI. CONCLUSIONS

The results discussed above indicate mixed results and make it somewhat more challenging to draw a definitive conclusion about the impact of the enhanced clauses on borrowing costs. On the one hand, analysis of the complete sample, including international debt issued before and after the introduction of the new clauses, would indicate that inclusion of the new clauses is associated with higher costs at issuance. Analysis of the investment-grade subsample would further indicate that this relationship is more pronounced for higher-rated issuers. However, both these results may be affected by either the inability of the instrumental variable (the modified pari passu provision) to correct for sample selection bias or the limited size of the sample available for analysis. In addition, the analysis of only those issuers electing to utilize the new clauses in the post-October 2014 period shows that no discernable relationship exists with benchmark spreads at issuance. When taken together, these results lead the paper to conclude that while the enhanced clauses may be associated with higher borrowing costs, especially for higher-rated issuers, additional analysis would be necessary to reach a definitive answer.

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