DO COLLECTIVE ACTION CLAUSES RAISE BORROWING COSTS?*

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We compare launch spreads on emerging-market bonds subject to UK governing law, which typically include collective action clauses, with spreads on bonds subject to US law, which do not. Collective-action clauses reduce the cost of borrowing for more creditworthy issuers, who appear to benefit from the ability to avail themselves of an orderly restructuring process. Less creditworthy issuers, in contrast, pay higher spreads. It appears that for less creditworthy borrowers the advantages of orderly restructuring are offset by the moral hazard and default risk associated with the presence of renegotiation-friendly loan provisions. We draw out the implications for the debate over whether to encourage the wider utilisation of these provisions as part of the effort to strengthen the international financial architecture.

For nearly a decade, since the outbreak of the Mexican crisis, there has been a steady stream of proposals for 'strengthening the international financial architecture' – that is, for more effectively preventing and resolving financial crises.[1] Encouraging the more broad-based use of collective action clauses (CACs) in loan contracts is a prominent initiative on the crisis resolution front. Collective action clauses specify who represents the creditors in negotiations, detail majority-voting procedures for altering the financial terms of the contract and limit the incentive or ability of individual creditors to initiate legal action against a borrower in arrears. They are seen as a useful way of streamlining and simplifying the process of debt restructuring.

While such clauses have long been included in syndicated bank loan contracts, they are absent from roughly two thirds of emerging market debt issued between 1991 and 2001 (where we measure debt by value). In particular, international bonds issued in the US and subject to the law of the State of New York require the unanimous consent of the bondholders to any restructuring, complicating efforts to alter payment terms. US-style bonds also typically lack clauses specifying who represents the bondholders and making provision for a bondholders committee or assembly. In addition, they lack sharing clauses designed to restrain individual creditors from utilising lawsuits as a way of holding up settlements in an effort to extract side payments. Bonds subject to German and Japanese law have the same

[1] Two reviews of these proposals are Kenen (2001) and Eichengreen (2002).

limitations. In contrast, majority voting, collective representation, and *de facto* sharing clauses are typically included in bonds governed by UK law. Bonds governed Luxembourg law feature collective-action clauses as well.

Two arguments exist for the more widespread use of these provisions. First, the existence of transparent procedures for orderly restructuring can avoid extended deadlocks during which the relevant procedures are established and collective action problems are solved, but during which the creditors receive no interest and the debtors are barred from the capital market. More complete contracts could thus remove one source of inefficiency and deadweight loss in international financial markets (Sachs, 1995). Second, the existence of more orderly restructuring procedures would reduce the pressure for international financial assistance for countries with problem debts – assistance motivated by the desire to avert a costly and disruptive default and restructuring. CACs, which go some way toward establishing such procedures, would thus reduce the pressure for the International Monetary Fund to provide financial assistance to countries with problems of debt sustainability (Shadow Financial Regulatory Committee, 2002). This would mitigate the moral hazard associated with official lending, limiting the tendency for governments to cling to unsustainable policies and investors to lend without due regard to the risks. Removing this distortion, in this view, would enhance the efficiency of resource allocation and, to the extent that moral hazard is a problem, even perhaps reduce the incidence and frequency of crises.

The more widespread use of collective-representation, majority-voting and sharing clauses in bond contracts was suggested by the Group of Ten countries in their post mortem on the Mexican crisis and echoed in a series of G-7 and G-22 reports and declarations; see Group of Ten (1996), Group of Twenty Two (1998), Group of Seven (1998). The G-7 then placed the issue on its work programme for reforming the international financial system. Then US Treasury Secretary Robert Rubin endorsed it in a speech designed to set the agenda for the spring 1999 meetings of the IMF's Interim Committee (Rubin, 1999). G-7 finance ministers embraced it in their Cologne Summit report on strengthening the international financial architecture (Group of Seven, 1999). The US Treasury explicitly endorsed this initiative in 2002 (Taylor, 2002). But, despite all this official support, little concrete progress has been achieved to date.

One reason is that some observers worry that collective-action clauses would raise borrowing costs (Dooley, 2000; Cline, 2001). By making it easier for borrowers to modify their contractual obligations, easier restructuring would encourage opportunistic behaviour and leave the markets reluctant to lend. The consequences might include 'a prohibitive increase in borrowing costs at a time when trillions of dollars are needed for infrastructure finance...' in the words of Folkerts-Landau (1999, p.2). However, the analogy with domestic bankruptcy and insolvency procedures suggests that provisions for orderly restructuring might in fact render emerging-market issues more attractive by minimising acrimonious disputes, unproductive negotiations and extended periods when no debt service is paid and growth is depressed by a suffocating debt overhang. In the words of

The Economist (1999), 'the prospect of an orderly renegotiation rather than a messy default might actually make some bonds more attractive.' Still another view (Roubini, 2000) is that contractual provisions and the initial allocation of rights should have no effect – that, as suggested by Coase, market participants should be able to work around them.

These are empirical questions but questions informed by little evidence. This is peculiar, since, as noted above, there already exists a market in London in bonds which feature collective-action clauses. Comparing the spreads on these bonds with spreads on otherwise equivalent American-style instruments is the obvious way of evaluating these arguments. The explanation for the dearth of such comparisons may be the difficulty of controlling for other borrower characteristics and market conditions that also affect emerging-market spreads. In addition, the choice of governing law may be endogenous and not all borrowers are in the market at all times, giving rise to a selectivity problem that may further bias ordinary-least squares estimates of the relationship between characteristics of the borrower and his loan contract, on the one hand, and the spread he pays, on the other.

This does not mean that the impact of collective action clauses on borrowing costs is impossible to analyse, only that this must be done using an appropriate framework. We develop and implement such a framework in this paper. Our goal is to identify the impact of collective action clauses on borrowing costs. Assessing the broader welfare implications would of course require additional assumptions and analysis.

We find that collective action clauses reduce borrowing costs for more creditworthy issuers, who benefit from being able to avail themselves of orderly restructuring. Less creditworthy issuers, in contrast, do not enjoy lower spreads; if anything, their spreads are higher. It appears that for less creditworthy borrowers the advantages of provisions facilitating easier restructuring are offset by the moral hazard and default risk associated with the presence of renegotiation-friendly loan provisions, while for more creditworthy borrowers the opposite is true.

1. Background

International bonds governed by UK law, with very few exceptions, include contractual provisions aimed at ameliorating collective-action problems. These clauses enable the holders of debt securities to call a bondholder assembly with the power to pass extraordinary resolutions addressing issues relating to the settlement of defaults or other modifications to the original bond covenant subject to the consent of bondholders holding a clear majority of the outstanding principal (typically, 75%, although some bonds provide for lowering the quorum to 25% if a 75% quorum cannot be attained). Its resolutions are binding on all bondholders so long as the requisite majority has agreed.

In contrast, US-style bonds do not provide for a bondholders assembly. They make no provision for modification of the financial terms of a contract by majority vote of the creditors, precluding any effort to modify payment terms without the

consent of each and every bondholder.[2] Bonds governed by UK law also typically specify procedures for selecting a bondholders' representative and enumerate his responsibilities. This representative, typically the trustee, is empowered to communicate the bondholders' negotiating terms to the debtor. Bonds governed by US law instead provide for a fiscal agent but this agent lacks the power to represent the bondholders in negotiations. The fiscal agent is an agent of the issuer rather than of the bondholders. His responsibilities are essentially administrative: he keeps track of interest and amortisation payments and distributes these to the holders of the debt securities.

UK bonds governed by Trust Deed Agreements, but not those involving fiscal agents, generally prohibit individual bondholders from initiating litigation. The power to do so is vested with the trustee, acting on the instruction of creditors holding a specified fraction (typically, at least 25%) of the principal, who is required to distribute any funds recovered in proportion to the principal amount. *De facto*, these bonds thus include the equivalent of sharing clauses and offer the debtor some protection against litigation. American-style bonds, in contrast, do not include such limits on litigation or a requirement to share the proceeds with other bondholders.

Since bonds subject to UK law virtually always include collective action clauses, while bonds subject to US law, with very few exceptions, do not, these variables are commonly used as proxies for the relevant contractual provisions. To the best of our knowledge, the exceptions are very few in number. Unfortunately, the presence or absence of specific clauses, as opposed to the governing law, cannot be determined using standard sources; gathering these data would require going through the individual documentation for many thousands of bonds. To deal with the possibility that this variable is measured with error, we use instrumental variables to correct for bias due to errors-in-variables.

2. Patterns of Debt Issuance and Spreads

The bonds we study are fixed income securities with a specified maturity, face value and coupon. They are placed on international markets; while issued by emerging market borrowers, they are denominated in developed country currencies. Although the bulk of this market consists of bonds placed in the Euromarkets (mainly the Eurodollar market), over our sample period a growing number of countries floated bonds on the US public market for foreign issuers (the Yankee market). The bonds are typically underwritten by a syndicate of investment banks,

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[2] The prohibition on majority voting in debt securities issued in the US dates from the US Trust Indenture Act of 1939. Section 316(b) of that act, which applies to the publicly-traded bonds of corporate issuers, prohibits any reduction in the amounts due a bondholder without that bondholder's consent. This regulation was adopted in response to the belief that corporate insiders had taken advantage of other creditors in the financial crisis of the 1930s by forcing through restructurings that enriched shareholders at the expense of bondholders. New-York-law sovereign bond documentation ever since has followed the precedent set by the Trust Indenture Act in shunning collective-action clauses, even though the rationale for Section 316(b) does not obviously apply to sovereigns. But both tradition and the fear of creating the perception that foreign debts are second-class assets evidently militate against their use. Roe (1987) describes the practice of shunning collective action clauses in sovereign bonds issued in the US as an example of historical path dependence.

whose members commit to placing them with investors. After placement, they trade on the secondary market and may be listed on an exchange.

Our data, drawn from the Capital Bondware database, include 3,295 bonds. In principle, this is the universe of all fixed and floating rate bonds issued between 1991 and 2000 by emerging markets; of this total, 1,588 bonds were subject to UK governing law, 1,103 to US law, and the rest to other laws that typically do not include collective action clauses (Table 1).[3]

We construct the spread as the yield to maturity at the time of issue (this is the launch or primary market spread, as distinct from the secondary market spreads that are quoted subsequently as the price of the bond varies) minus the yield on a risk-free bond of comparable maturity. The relevant risk-free bond depends on the currency in which the bond is issued: it is the US Treasury Bond for US dollar

Table 1

Trends in Bond Issuance Under Various Governing Laws

	Law			
Year	UK	US	Other	Total
	Number of bonds			
1991	38	15	28	81
1992	74	73	34	181
1993	180	115	67	362
1994	176	77	73	326
1995	212	87	75	374
1996	264	168	97	529
1997	256	231	80	567
1998	89	114	33	236
1999	165	130	54	349
2000	134	93	63	290
Total	1,588	1,103	604	3,295
	Bond spreads (basis points)*			
1991	262	360	169	261
1992	356	376	222	354
1993	357	340	264	340
1994	216	308	190	233
1995	171	296	203	206
1996	190	284	203	223
1997	205	256	172	222
1998	405	398	332	391
1999	343	428	384	382
2000	212	436	208	282
Total	249	335	229	276

*100 basis points equals one percentage point. 'Spread' is measured as the difference between the bond's yield to maturity and the yield to maturity of a 'risk-free' bond of comparable maturity and issued in the same currency.

[3] We include bonds governed by Luxembourg law in the UK category, since the contractual provisions are similar, as noted above. Eleven bonds report both US and UK laws; we have classified them as US law bonds on the assumption that they would be subject to the bondholder 'holdout' problem. However, none of the results reported below are sensitive this classification. For 19 bonds no law was specified; we place these in the 'other law' category. Launch spreads were not reported for 229 bonds; these were principally bonds issued in currencies other than the US dollar, the Japanese yen, the German deutschemark and the euro.

bonds, the UK government bond rate for sterling-denominated bonds, the Japanese government bond rate for yen-denominated bonds etc.

Table 1 shows that, for most of the 1990s, spreads on bonds subject to UK law were narrower than spreads on bonds subject to US law.[4] However, these averages disguise differences by borrower credit quality, as revealed by Table 2, which distinguishes borrowers by their *Institutional Investor* country credit rating, which ranges from 0 for countries with the poorest credit to 100 for countries with the best credit. (The advantage of the *Institutional Investor* data over the Moody's and Standard and Poor's ratings used by other authors is more complete country coverage and more regular publication.) The frequency of bonds governed by UK law relative to US law is higher for issuers from countries with *Institutional Investor* ratings above 50. It is also for these borrowers that the spreads are most favourable on UK bonds. Evidently, issuers from countries with good credit ratings receive favourable treatment when they issue bonds with collective action clauses, while this is less true for issuers from countries with poor credit. Note, however, that the lowest rated category (countries with *Institutional Investor* ratings from 0 to 35) also has a relatively high ratio of bonds subject to UK law, consistent with the notion, flagged by Petas and Rahman (1999), that provisions facilitating orderly restructuring are valued when the likelihood of having to

Table 2
Distribution of Governing Laws Across Rating Categories

	Number of bonds					Spread on bonds (basis points)*				
	Rating category[†]									
Law	0–35	35–50	50–66	66–100	Total	0–35	35–50	50–66	66–100	Total
All bonds										
UK	319	529	374	366	1,588	446	324	133	66	249
US	190	638	181	94	1,103	409	368	258	109	335
Other	46	293	155	110	604	367	320	124	75	229
Total	555	1,460	710	570	3,295	439	344	165	75	276
Public bond issues										
UK	93	253	106	102	554	465	296	101	56	243
US	43	245	49	53	390	385	355	212	101	304
Other	21	256	84	59	420	343	316	93	72	239
Total	157	754	239	214	1,364	427	323	123	72	261
Private bond issues										
UK	226	276	268	264	1,034	467	349	146	70	253
US	147	393	132	41	713	416	376	275	119	352
Other	25	37	71	51	184	389	345	159	78	206
Total	398	706	471	356	1,931	443	364	186	76	286

*100 basis points equals one percentage point. 'Spread' is measured as the difference between the bond's yield to maturity and the yield to maturity of a 'risk-free' bond of comparable maturity and issued in the same currency. [†]Rating categories are from *Institutional Investor*, with 0 denoting the poorest and 100 the highest possible credit.

[4] On average, bonds issued under other laws carry lower spreads. This may reflect the impact on spreads of borrowers' ability to access the German and, particularly, Japanese market, where for much of the period funds were cheap and plentiful.

restructure is high. These lowest credit quality issuers, however, pay higher average spreads for bonds governed by UK law. This suggests the importance of disaggregating by credit quality when estimating the association between governing law and spreads, since that relationship may not be monotonic.

3. Data and Methodology

The model estimated in previous studies of emerging-market spreads (Edwards, 1986; Cantor and Packer, 1995; Cline and Barnes, 1997; Kamin and Kleist, 1997) is a linear relationship of the form:

$$\log(spread) = \boldsymbol{\beta}\mathbf{X} + u_1 \tag{1}$$

where the dependent variable is the logarithm of the spread, $\mathbf{X}$ is a matrix of issue, issuer, and period characteristics, $\boldsymbol{\beta}$ is the vector of coefficients to be estimated, and u_1 is a random error.

Such models are typically estimated by ordinary least squares. But OLS will be biased if the choice of governing law is endogenous and/or the sample of observed issuers differs from the population of potential issuers. To address simultaneity, we estimate (1) using instrumental variables. We first estimate a multinominal logit of the choice of governing law (taking US, UK and other laws as the three alternatives). We then construct the fitted probability that a particular bond is governed by one of these laws and use the estimated probabilities rather than the dummy variable representing the law in the spreads equation.

But even with the choice of governing law instrumented in this way, (1) will not provide an unbiased estimate of the relationship between governing laws and spreads if not all potential issuers are in the sample. The spread will be observed only when positive decisions to borrow and lend are made. Assume that spreads are observed when a latent variable B crosses a threshold B' defined by:

$$B' = \mathbf{g}\mathbf{Z} + u_2 \tag{2}$$

where $\mathbf{Z}$ is the vector of variables that determines the desire of borrowers to borrow and the willingness of lenders to lend, and u_2 is a second error term. Assume further that:

$$u_1 \sim \mathrm{N}(0, \sigma)$$

$$u_2 \sim \mathrm{N}(0, 1)$$

$$\mathrm{corr}(u_1, u_2) = \rho.$$

Equations (1) and (2) can be identified by the nonlinearity of the fitted probabilities in the selection equation or by the inclusion of elements in $\mathbf{Z}$ that are not also in $\mathbf{X}$, and the system can be estimated either by a two-step procedure proposed by Heckman (1979) or by maximum likelihood. We estimate the model both ways, obtaining virtually identical results, although we only report the maximum likelihood estimates.

The dependent variable is the spread at the time the bond is issued.[5] There does not exist a tightly-specified theoretical framework dictating the vector of explanatory variables. Our strategy is to draw on previous work, including in **X** variables suggested by the existing empirical literature (contributions to which are enumerated in the first sentence of this Section). We err on the side of inclusiveness in order to minimise the risk of attributing to governing laws the influence of other, omitted variables. Once we thereby construct a composite list of explanatory variables, we resist the temptation to add or drop some of them or add still others in order to avoid biasing statistical inference through pre-testing.[6] For ease of presentation, we do not discuss the coefficients on the control variables at any length; such discussion can be found in our earlier papers (Eichengreen and Mody, 1998, 2000).

From Bondware we gathered information on the maturity of each issue, whether the issuer was a private or governmental entity, the currency of denomination of the issue, whether the interest rate was fixed or floating and the governing law. In addition, we extracted information on contractual terms such as guarantees of payment (distinguished by foreign or domestic guarantor), put or call options and additional collateral, as well the nationality of the lead manager (the 'book runner') and the market in which the issue was placed. As a measure of credit worthiness we used the rating reported by *Institutional Investor*. In addition, from the *International Country Risk Guide* we drew a measure of political risk. As with the *Institutional Investor* rating, this varies between 0 and 100, with higher values implying lower risk. Using the IMF's *International Financial Statistics*, the World Bank's *Global Development Finance* and the Bank for International Settlements' *The Maturity, Structure, and Nationality Distribution of International Bank Lending*, we constructed international reserves relative to imports, external debt relative to GNP, debt service relative to exports, bank credit to the private sector relative to GDP, the growth rate of real GDP, the variance of the export growth rate, and short-term debt as a share of total commercial bank debt. To control for industrial-country credit conditions, we used the yield on ten-year US treasury bonds. Ten-year rates are appropriate since the term to maturity of the underlying asset roughly coincides with that on the international bonds in our sample. We also include the monthly rate of growth of US industrial production, the US high-yield spread (the spread between the rates paid by less than investment grade US corporate issues and the US treasury rate), and the standard deviation of the log daily change in the emerging market bond index (again averaged over the quarter). The data Appendix provides more details on the sources and construction of these variables.

Estimating (2) also requires information on those who did not issue bonds. For each country we considered three types of issuers: sovereign, other public, and private. For each quarter and country where one of these issuers did not come to the market, we recorded a zero, and where they did we recorded a one.

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[5] While, in principle, the analysis can also be conducted with secondary market spreads, only for a small number of bonds are the secondary spreads quoted reliably at a relatively high frequency.

[6] When two variables are perfectly collinear we are of course forced to drop one of them. For example, in some of the subsamples analysed below, adding the nationality of the lead manager (the 'book runner') leads to perfect multicollinearity with the currency of issue or market in which the bond is issued.

4. Choice of Governing Law

Different governing laws imply different commitments and send different signals. Choosing US law signals a stronger commitment to repay, since ability to restructure is limited and the borrower is more likely to be faced with the extreme options of continuing to pay in full or to have to suffer a costly and disruptive default. But the commitment not to restructure implied by US law may not be credible when it is offered by issuers of low credit quality; it may then be seen as a sign of desperation.

Such logic suggests treating the governing law as endogenous, where issuers choose it by varying the market in which they borrow. Table 3 presents the results of a multinominal logit regression where the choice is between UK, US, and other governing laws. We model this choice as a function of global credit conditions, transaction-specific variables, credit quality, and other issuer characteristics. Global credit conditions are measured by the US 10-year treasury rate, US industrial growth, US high-yield spreads, the difference between US and Japanese treasury two-year rates, and the standard deviation of the daily EMBI change during the same quarter. Transaction-specific variables include the nationality of the book runner and the market in which the bond is issued. (We constructed dummies for book runners from the UK, US, Germany, Hong Kong, the Netherlands and Italy, omitting the residual category of those from other countries. The book runner dummy for Japan was almost completely collinear with the dummy for issuance in yen, so both could not be utilised.) Including these variables allows us to address the objection that the governing law is simply an artifact of market structure and a product of existing long-term relationships between participants in that market and the borrower, and not a choice variable affected by issuer characteristics and current economic conditions. We also include the size of the issue, its maturity, dummy variables for whether the issue is backed by guarantees or collateral, whether it features put or call options, whether the bond is issued through an offshore entity and whether the issuer is a public (though non-sovereign) or a private entity, and the sector (industry, services etc.) in which it is engaged. Finally, we include the *Institutional Investor* country credit rating and its square (the latter to allow for a non-linear influence on the choice of law).

Table 3 presents the coefficients for UK law in column 1 and other laws in column 2 (with US law as the omitted alternative). As credit quality improves from low levels, the probability of observing issuance under UK law declines relative to the probability of issuance under US law but as credit quality continues to improve there is then an increase in the probability of issuance under UK law. The inflection point is a country credit rating of 50; we use this cut-off when dividing 'low' and 'high' rated issuers in what follows.[7]

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[7] The term 'high' is relative, since according to the Moody's ratings the bulk of the issuers in that category are in the 'B' category (though typically at the high end of 'B') and, as such, have five-year default probabilities of 2 and 5% (Bhatia, 2002). Of the 3,295 bonds in our database, ratings on individual bond issues are available for 2,077 bonds from Moody's and for some additional bonds from other rating agencies. The comparison above is based on this subset of bonds. Moody's ratings range from the highest quality that carry a rating beginning with the letter 'A' to the worst that begin with the letter 'C'. Within each category are several sub categories. 'Baa' is the lowest so-called 'investment grade' category, i.e., just above 'junk bond' status.

Table 3

Multinomial Logit Results for Choice of Governing Law*

	UK law		Other laws	
	Co-efficient	z-statistic	Co-efficient	z-statistic
Log amount	−0.459	−5.72	−0.213	−1.88
Maturity	−0.057	−3.77	−0.059	−2.86
Log 10-year US treasury rate	−1.216	−2.01	0.172	0.19
US industrial production growth	82.493	2.97	93.634	2.34
US minus Japanese 2-year rates	−0.039	−0.45	−0.106	−0.85
Log US high-yield spreads	0.028	0.10	0.738	1.68
EMBI volatility × low-rated issuers	−11.742	−1.53	3.785	0.33
EMBI volatility × high-rated issuers	10.481	0.95	21.256	1.56
Credit rating	−0.075	−2.46	0.047	0.99
(Credit rating)$^2 \times 10^{-2}$	0.071	2.22	−0.022	−0.47
Book runner nationality:				
US	−1.553	−7.18	−2.159	−6.01
UK	0.422	2.57	−1.439	−5.99
Germany	0.772	2.07	1.276	3.01
Japan	−0.323	−0.25	5.349	4.66
Hong Kong	1.187	4.10	−0.774	−2.16
Netherlands	0.553	1.99	−1.205	−2.19
Market of issue:				
Yankee	−2.120	−6.01	0.292	0.82
Yankee, private	−2.841	−6.03	−0.415	−0.91
Global	−2.155	−4.94	−0.694	−1.40
Foreign guarantee	−0.383	−1.31	0.055	0.13
Domestic guarantee	−0.218	−1.28	0.266	1.01
Put option	0.576	2.84	0.254	0.77
Call option	0.314	1.65	0.606	2.07
Collateral	−0.869	−3.74	0.059	0.18
Offshore issue	0.342	2.01	0.081	0.30
Latin America	−0.822	−4.83	−0.245	−1.02
Public (non-sovereign) issuer	−0.034	−0.10	−1.162	−2.42
Subsovereign issuer	−0.553	−1.13	−0.589	−0.84
Financial sector	0.214	0.63	0.580	1.19
Oil and gas sector	0.900	2.00	0.603	0.85
Private issuer	−0.559	−2.39	−1.105	−3.27
Financial sector	0.456	2.86	−0.100	−0.38
Oil and gas sector	0.567	1.46	0.658	1.06
Yen	0.935	2.86	0.843	1.58
Mark	1.222	2.07	3.208	5.17
Euro	0.824	3.07	2.101	6.00
Other currencies	2.185	7.99	2.488	7.44
Fixed rate	−1.101	−5.78	−1.364	−5.42
Constant	7.586	3.05	−4.844	−1.29
Number of Observations: 3,194, Log likelihood = −1707.387, Pseudo R^2 = 0.481				

*US Governing Law is the omitted alternative.

5. Impact on Spreads

We now use predicted probabilities obtained from these multinominal logits as instruments for observed governing laws. The standard Hausman test confirms that instrumentation is appropriate – that the governing law should be treated as endogenous.[8]

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[8] While we cannot distinguish whether this reflects measurement error (that governing law measures the presence or absence of collective action clauses imperfectly) as opposed to endogeneity, the results do not hinge on this treatment, as we describe below.

In addition, we correct for the fact that not all potential issuers will be present in the market at each point in time and that actual issuers will not be a random sample of potential issuers. We do so by jointly estimating equations for the decision to enter the market and the spread, using maximum likelihood. (Heckman's two-step procedure, using a probit equation to model the decision to issue a bond and constructing the Inverse Mills Ratio, gives virtually identical results, as noted above.) We report several diagnostics, including ρ (the correlation between the error terms in the selection and spreads equation), σ (the estimated standard error of the residual), the log of likelihood and the probability value from a Wald test that the coefficients other than the constant are zero.[9]

Our first look at relative spreads (in Section 2) and our multinomial logit model of choice of governing law (in Section 4) both suggest that the relationship between spreads and governing laws varies with issuer credit quality – in particular that renegotiation-friendly contractual provisions may reduce spreads for high-quality borrowers but raise them for low-quality borrowers. Intuitively, more credit-worthy emerging-market borrowers value their capital-market access and are unlikely to walk away from their debts. Including collective-action clauses in their loan contracts is not an invitation to act opportunistically. Indeed, in the unlikely circumstance that they have difficulties in servicing their debts, the fact that they can resort to provisions facilitating the orderly restructuring of their obligations is viewed positively by the markets.[10] For less credit-worthy borrowers, in contrast, the presence of collective-action clauses increasingly aggravates moral hazard as ratings decline, raising borrowing costs.

We therefore allow the effect of governing laws to vary with credit quality. The most general specification allows all coefficients to differ by credit quality. A more restrictive specification (useful for subsamples with small numbers of bonds, reported in Sections 7 and 8) allows the coefficients on governing laws to differ by credit quality but constrains the other coefficients to be equal.

The key variable is UK (versus US) law.[11] In Table 4 the coefficients on UK law for all four credit-rating categories are significant at standard confidence levels; they

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[9] To save space, we do not report the coefficients on the selection or issuance equation, having done so previously (Eichengreen and Mody, 1998, 2000). In addition to the country and global variables in the spreads equation, the additional explanatory variables for the issuance equation were debt service relative to exports, short-term debt relative to total commercial bank debt, reserves relative to imports. For those rated below 50, we also included interaction terms between the global, country and type-of-issuer variables with the Latin American dummy.

[10] Recall that debt service difficulties for these borrowers have a low but non-negligible probability. As noted above, even in the high category range, the large bulk of the borrowers are in the 'B' category and, within that category the best (and most frequent) are just above 'junk' bond status, and a significant number are below that level. Thus, ease of restructuring has real value.

[11] Other governing laws, mainly German and Japanese, enter with negative coefficients. As indicated above, this may be picking up the impact on spreads of borrowers' ability to access the German and, particularly, the Japanese market, where for much of the period funds were cheap and spreads were narrow. The other coefficients enter with plausible signs. We find that global conditions (US growth, US interest rates and the level of swap spreads, a commonplace measure of risk aversion) matter importantly for emerging market spreads, though their influence varies by rating category. Country and borrower characteristics also generally enter with plausible signs and coefficients. Borrowers with higher debt pay higher spreads, other things equal. Faster growing countries pay lower spreads, while countries with higher variability of export earnings pay higher spreads. Lower political risk and more reserves in relation to short-term debt typically reduce spreads.

Table 4

Implications of Collective Action Clauses for Borrowing Costs

Credit Rating Category	Dependent variable: Log of launch spreads							
	0–35		36–50		51–66		67–100	
	Co-efficient	z-statistic	Co-efficient	z-statistic	Co-efficient	z-statistic	Co-efficient	z-statistic
Log amount	−0.090	−3.56	−0.050	−2.75	−0.056	−1.73	−0.135	−3.36
Maturity	−0.008	−1.37	0.006	2.75	0.006	1.99	0.007	1.37
Log 10-year US Treasury Rate	−0.247	−1.80	−0.532	−3.76	0.258	0.72	−0.957	−2.43
US industrial production growth	−11.313	−1.49	14.717	2.54	19.039	1.31	−2.783	0.16
Log US high-yield spreads	0.180	1.87	0.398	6.40	0.779	5.23	−0.228	−0.96
Standard deviation of EMBI	−1.318	−0.64	1.862	1.14	7.392	2.10	7.024	2.00
Political Risk	−0.002	−0.61	−0.006	−3.17	−0.023	−4.41	−0.028	−2.77
Debt/GNP	0.555	3.59	0.745	6.67	−0.079	−0.39	0.672	2.42
GDP growth rate	−7.706	−3.44	−6.769	−3.92	−34.949	−8.19	−4.116	−0.41
Variance of export growth rate	0.011	0.29	−0.003	−0.16	0.116	1.61	0.219	3.15
Reserves/short-term debt	−0.086	−3.90	−0.091	−4.62	0.075	3.57	−0.137	−3.26
Private bank credit/GDP	0.001	2.00	−0.184	−4.88	−0.157	−5.94	0.111	3.66
Fixed rate bonds	0.332	5.87	0.510	11.22	0.401	5.01	0.123	1.10
*UK governing law**	0.315	2.58	0.181	2.44	−0.371	−2.67	−0.722	−3.68
*Other governing laws**	−0.265	−1.37	−0.145	−1.49	−0.403	−2.42	−0.242	−1.12
Foreign guarantee	−0.444	−5.05	−0.517	−6.15	−0.142	−1.34	−0.308	−2.24
Domestic guarantee	−0.034	0.61	−0.046	−1.20	0.103	1.31	0.171	1.31
Put option	0.077	1.32	0.066	1.33	0.085	1.09	0.188	2.35
Call option	−0.845	−1.32	−0.205	−4.65	−0.266	−3.66	0.001	−0.02
Collateral	0.032	0.48	0.009	−0.19	0.385	4.26	0.360	2.01
Offshore issuance	−0.170	−3.61	−0.095	−2.26	0.206	2.83	0.235	1.69
Lambda (inverse-Mills ratio)	−0.045	1.36	−0.120	−2.87	−0.692	−15.63	0.158	1.85
Constant	5.691	7.34	4.569	8.26	3.347	2.23	10.620	4.66
Rho (ρ)	−0.147		−0.287		−0.890		0.248	
Residual standard error (σ)	0.310		0.421		0.777		0.640	
Log likelihood	−633.219		−1614.085		−1,177.135		−751.093	
Prob > χ^2	0.00		0.00		0.00		0.00	
Number of observations	2,879		2,430		1,299		751	
Number of bonds	499		1,282		635		493	

*US Governing Law is the omitted alternative.

Notes: Dummy variables were included for private and Latin American users, and also for industrial sectors, currency of issue. Estimates were obtained using STATA's maximum likelihood Heckman procedure. Fitted values from Table 3 were used as instruments for the governing laws.

fall from 0.32 for the countries with Institutional Investor ratings of 0 to 35, to 0.18 for countries with ratings of 35–50, to −0.37 for country ratings between 50 and 66, and, finally, to −0.72 for countries with ratings above 66. These estimates suggest that issuers from countries in the lowest rating class pay about a 32% premium for the choice of UK law, which translates into about 140 additional basis points at the mean value of spreads in that category. Issuers in the 30–50 credit rating class pay an average additional 70 basis points, while those with credit ratings above 50 enjoy a discount of about 50 basis points when opting for UK law.[12] This pattern of

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[12] These effects are in the same range as those associated with other contractual arrangements, which buttresses their plausibility. For example, guarantees by foreigners reduce spreads by about 40 to 55% for issuers from countries in the low rated categories.

coefficients, with steadily growing positive (negative) effects on spreads as borrower credit quality deteriorates (improves) is consistent with our earlier interpretation, which emphasises the tradeoff between the efficiency advantages of more orderly restructuring, which dominates for high quality borrowers who are unlikely to default opportunistically and the associated moral hazard which dominates for low-quality borrowers whose motives and response are suspect.

6. Public Versus Private Borrowers

Moral hazard may be a particular problem for sovereigns because they are not subject to the jurisdiction of a bankruptcy court. At the same time, it could be argued that collective-action clauses are particularly attractive in the case of sovereign issues because there do not exist other mechanisms (domestic bankruptcy and insolvency procedures in particular) for orderly restructuring in the event of default, like those which apply in principle to corporate bond issues. These opposing considerations may offset each other if they apply with equal force to a particular category of borrowers. Alternatively, focusing on sovereign issues could produce even larger estimates of the impact of collective-action clauses on borrowing costs if moral hazard concerns apply mainly to low-quality borrowers and ease of restructuring is relevant principally for high-quality borrowers.

This suggests allowing the effects of the governing laws to differ for sovereigns. Initially, we constrain the coefficients on other coefficients to be the same for sovereigns and other borrowers. Below we also estimate the more general model, which allows the coefficient on all variables to differ. Note that the coefficients on these other explanatory variables are not reported to save space. Although there are some minor changes in the estimates, reported in Table 5 – the coefficient for the 0–35 credit-rating category now has a slightly higher point estimate than before while that for the 35–50 category is somewhat lower – the key results carry over. The interactions between sovereign status and UK governing law suggest that sovereigns in the lowest credit-rating category do not pay a premium that is significantly different from other issuers. The results are also virtually unchanged for sovereigns with credit ratings between 50 and 66. There are no sovereign issuers in the 67–100 category. Note that although the interaction terms in the two lower rating categories are not significantly different from zero they are negative, suggesting that factors such as the special attractions of provisions that facilitate restructuring when bankruptcy courts have no jurisdiction may be relevant.

The next step is to allow the coefficients on all variables to differ between sovereign and private issues. This test is more demanding, because we must now estimate a substantial number of coefficients using a smaller sample. We therefore estimate the entire vector of coefficients separately for only two credit-rating categories, above and below 50, while still allowing the effects of UK governing law (but not other variables) to differ depending on whether the issuer is from a country in the 0–35, 35–50, or 50 and above rating range. This facilitates comparison with the preceding results. We combine all public issuers, noting that the bulk of the public issuers below 50 rating level are sovereigns and that the bulk of them above that cut-off point are other public issuers (such as subsovereigns and

Table 5

Testing for Separate Effects for Sovereign and Other Borrowers

	Dependent variable: Log of launch spreads	
Credit rating category	0–50	51–100
UK law, 0–35	0.590 (8.57)	
Interacted with sovereign dummy	−0.036 (−0.32)	
UK law, 36–50	0.100 (1.43)	
Interacted with sovereign dummy	−0.079 (−0.81)	
UK law, 51–66		−0.333 (−2.69)
Interacted with sovereign dummy		0.030 (0.08)
UK law, 67–100		−0.670 (−5.44)
Interacted with sovereign dummy		
Rho (ρ)	−0.269 (−3.59)	−0.716 (−14.39)
Residual standard error (σ)	0.404	0.717
Log likelihood	−2522.92	−1958.19
Prob > χ^2	0.00	0.00
Number of observations	5,309	2,050
Number of bonds	1,781	1,128

Notes: Other than the interaction terms reported here, the specification used is the same as in Table 4. The other coefficients are not reported to conserve space. Throughout the comparison of the UK law is with the US Governing Law, which is the omitted alternative in the regression. Figures in parentheses are z-statistics. Estimates were obtained using STATA's maximum likelihood Heckman procedure. Fitted values from Table 3 are used as instruments for the governing laws.

publicly owned companies). Columns 1 and 2 of Table 6 report the results. We see the same pattern as before. Public issuers with ratings below 50 pay higher spreads when issuing under UK law, while those with ratings above 50 pay lower spreads, just as in the full-sample estimates. Note again that there are no sovereigns in the 67–100 range.

7. Robustness

Our key finding that the interest premium associated with UK law is positive for low credit quality borrowers (those with *Institutional Investor* ratings below 50) and turns negative for higher quality borrowers is insensitive to whether or not we use instruments for the governing law. We estimated the same specification reported above, correcting for selection bias but not also correcting for endogeneity. The results, not reported in detail to conserve space, support the finding of differentiation between borrowers with varying credit quality: for the UK governing law, the coefficients (and their z-statistics) from the lowest to highest rated categories are: 0.06 (1.83), 0.07 (2.22), −0.44 (−5.79) and −0.30 (−2.56).

   We also varied the specification of the first-stage probit to test further the sensitivity of the results to implementation of the selectivity correction. We respecified the dependent variable as the spread as a proportion of the riskless rate. We dropped the variables in the spreads equation with insignificant or apparently counterintuitive coefficients. In all cases, our key findings for the effect of governing laws on spreads were robust to these changes.

Table 6

Effect of Governing Law on Public Issuers

Credit rating category	Dependent variable: Log of launch spreads			
	0–50	0–50	51–66	67–100
UK law, 0–35	0.487 (5.02) ⎫			
UK law, 36–50	0.006 (0.06) ⎭	0.309 (3.26)		
UK law, 51–66			−0.300 (−1.40)	
UK law, 67–100				−0.587 (−1.96)
Rho (ρ)	−0.491 (−4.29)	−0.366 (−2.90)	−0.683 (−3.50)	0.556 (2.94)
Residual standard error (σ)	0.416	0.418	0.670	0.785
Log likelihood	−1453.98	−1483.049	−512.96	−360.49
Prob > χ^2	0.00	0.00	0.00	0.00
Number of observations	3,094	3,094	684	383
Number of bonds	736	736	204	184

Notes: Other than the interaction terms reported here, the specification used is the same as in Table 4. The other coefficients are not reported to conserve space. Throughout the comparison of the UK law is with the US Governing Law, which is the omitted alternative in the regression. Figures in parentheses are z-statistics. Estimates were obtained using STATA's maximum likelihood Heckman procedure. Fitted values from a multinomial logit for only public issuers are used as instruments for the governing laws.

Readers may worry that the coefficients on governing laws are picking up the characteristics of the market in which the bond is issued (London or New York) and its implications for borrowing costs rather than the impact of the associated governing law and contractual provisions (Becker *et al.*, 2000). We explored two ways of dealing with this concern. First, we included dummy variables in the spreads equation representing the market in which the bond was issued as a way of assessing whether the law governing bond contracts was a mere by-product of this factor. The key results were unchanged. Second, we considered only the subset of bonds issued in the Euro market. While bonds issued in the Euro market have a higher likelihood of being issued under UK law, this is not uniformly the case. Again, our basic result – higher spreads for UK law bond issuance in lower rated categories and lower spreads in the higher rated categories – continues to hold. We also added British interest rates to the spreads equation as a direct measure of UK market conditions. This extension also does not change our findings concerning the impact of choice of governing laws on spreads. Finally, we also dropped bonds that were not issued under UK, US, Japanese, German or Luxembourg law on the grounds that in other cases (e.g. Spanish law bonds and Hong Kong law bonds) it is impossible to disentangle the effects of the law from those of the market and the currency of issue (since these coincide exactly). Again, this changed nothing. All this supports the inference that what we are picking up are the effects of governing laws and associated contractual provisions and not local credit-market conditions.

There is the possibility that the markets began to focus on the implications of collective action clauses recently, as the debate over mandating these provisions has heated up, leading them to price debt securities differently only in recent years. We test this hypothesis by estimating our model separately for different

portions of the decade (before the Mexican crisis, between the Mexican and Asian crises, and after the outbreak of the Asian crisis). The debate over mandating CACs commenced immediately after (and in response to) the Mexican crisis (Eichengreen and Portes, 1995) and gained new prominence following the Asian crisis (Group of Twenty Two, 1998), which suggests this periodisation. The results suggest that even before the Asian crisis and the recent policy debate, the markets took cognisance of the implications of legal provisions for default risk and restructuring costs.

8. Conclusions

This paper has presented the first systematic evidence on the choice of laws that govern bonds issued by emerging markets and whether borrowing costs are influenced by the presence in these laws of collective-action clauses designed to facilitate the orderly restructuring of emerging-market debt. While not dismissing factors like the borrower's relationship with the lead manager and the choice of the market in which the bond is issued, we find that economic considerations play a significant role in determining the bond's governing law. Low-rated issuers tend to use UK law more than US law, followed by a greater use of US laws in the middle and then a shift back to UK laws for the better emerging market credits.

Comparison of borrowing costs for American and British-style bonds is complicated by the fact that borrowers are able to choose which type of security to issue, by choosing in turn where to issue it. The comparison is further complicated by the fact that borrowers can decide whether to borrow, lenders whether to lend. Our analysis attempts to take these complications on board. We find that the impact of these contractual provisions is different for different types of borrowers. Collective-action provisions tend to reduce borrowing costs for more credit-worthy issuers, while raising them for less credit-worthy issuers. Low-quality borrowers with *Institutional Investor* credit ratings below 50 pay a premium, while high-quality borrowers with ratings above 50 enjoy a discount when issuing under UK law. These effects are sizeable; the point estimates suggest that issuers from countries with low credit ratings pay about a 32% premium for the choice of UK law. We conjecture that more credit-worthy borrowers benefit from being able to avail themselves of an orderly restructuring process, since investors find the availability of this orderly process attractive, while for less credit-worthy borrowers the advantages of provisions facilitating an orderly restructuring are offset by the moral hazard and additional default risk associated with the presence of renegotiation-friendly loan provisions.

These results do not suggest that mandating the inclusion of collective-action clauses in all sovereign bonds admitted for trading in the US and UK or making the use of CACs in new bond issues a condition of IMF assistance; as suggested by Taylor (2002), would necessarily raise borrowing costs for emerging markets as a class. This should put to rest one frequent objection to proposals for official initiatives along these lines. That said, this research, by itself, does not establish the

desirability of such a mandate. One view would be that rational agents already choose the governing law optimally, minimising expected costs, including both costs at the time of launch and prospective costs in the event of subsequent debt-sustainability problems and that what is individually optimal is socially optimal as well. But another view, which dominates in official circles, is that there is a negative externality associated with the absence of collective-action clauses from a significant segment of emerging market debt. By increasing the difficulty of debt restructuring and threatening major disruptions to the subject country and potentially the international financial system if default occurs, the prevalence of these contracts places the IMF under pressure to lend in order to limit the likelihood that these costs will be incurred. This in turn encourages reckless lending and reckless borrowing, resulting in a greater frequency of crises and in an insufficient readiness to specify renegotiation-friendly contractual provisions. These presumptions motivate proposals for using moral suasion or mandates to encourage the more widespread use of collective action clauses, resistance to which is grounded in the belief that emerging markets would then pay higher borrowing costs.

This controversy cannot be resolved here. But the evidence on pricing behaviour in this paper represents a first step toward such a resolution, in that it does not suggest that emerging markets would incur higher borrowing costs as a class. Borrowers with poor credit would but borrowers with good credit would not. Indeed, if the goal of reforming the international financial architecture is to sharpen the incentive for borrowers to improve their credit-worthiness, then this would seem to be a step in the right direction.

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Date of receipt of first submission: October 2001
Date of receipt of final typescript: June 2003

Technical Appendix is available for this paper: www.res.org.uk/economic/ta/tahome.asp

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