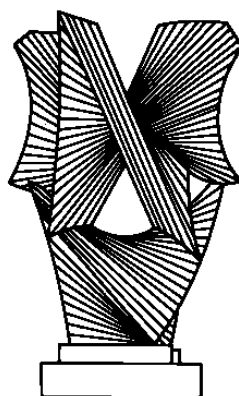


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## The Dynamics of Contract Evolution

*Stephen J. Choi, Mitu Gulati, and Eric A. Posner*

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# The Dynamics of Contract Evolution

Stephen J. Choi, Mitu Gulati and Eric A. Posner\*

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## Abstract

Contract scholarship has given little attention to the production process for contracts. The usual assumption is that the parties will construct the contract *ex nihilo*, choosing all the terms so that they will maximize the surplus from the contract. In fact, parties draft most contracts by slightly modifying the terms of contracts that they have used in the past, or that other parties have used in related transactions. A small literature on boilerplate recognizes this phenomenon, but little empirical work examines the process. This Article provides an empirical analysis by drawing on a data set of sovereign bonds. We show that exogenous factors are key determinants in the evolution of these contracts. We find an evolutionary pattern that roughly separates into three stages. Stage one where a particular standard form dominates; stage two where there are external shocks and marginal players experiment with deviations from the standard form; and stage three where a new standard emerges. The pattern confirms roughly to the S curve commonly described in the product innovation literature. We also find that more marginal law firms are likely to be leaders in innovation at early stages of the innovation cycle but that dominant law firms are the leaders at later stages.

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## I. Introduction

The literature on the evolution or production of contracts is sparse. Contracts, and the provisions in them, are generally conceptualized as arising as a function of the needs of the specific transaction at hand. Parties draft contracts *ex nihilo*, the way that an author might write an original work. Reality is different. Lawyers typically produce new contracts by modifying existing templates, including older contracts or forms that have been developed by trade associations. They are more like inventors than authors: they take existing products and try to improve them so that they meet the needs at hand. As a result, contract production is path dependent, giving rise to the phenomenon of boilerplate.<sup>1</sup> Boilerplate has an odd dual quality: it is thought to be necessary (which is why it is left in the contract) but parties often do not know why it is important. Judicial opinions reflect this confusion, with many courts expressing skepticism about boilerplate even while they frequently enforce it.<sup>2</sup>

Boilerplate is sticky but not static. We know that boilerplate changes, as do form contracts generally. But we know little about *how* these contracts change. In a prior article, we examined the evolution of sovereign debt contracts over a roughly fifty-year period.<sup>3</sup> Over a period that long, we found that contract provisions did change and often did so meaningfully; these were not just cases of contract language being modified around the margins; entirely new provisions showed up and old provisions disappeared. However, those changes did not occur in a manner that resembled the conventional model of deal-to-deal tailoring of contract provisions. Contracts generally changed on an industry-wide basis, in response to major events, such as global financial crises. For example, after the Latin American debt crisis in the early 1980s, sovereigns adopted new terms in their sovereign bond contracts including waivers of sovereign immunity, consent to enforcement, consent to jurisdiction, governing law, agent for service of process, and cross default provisions. Individualized change or tailoring—that is, where terms used by one issuer were not also used by the other issuers—was less prevalent, but not absent. Individualized change also tended to show up in response to shocks or significant events, but the events in question were significant for particular actors and not the

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<sup>1</sup> For a discussion of the literature on contract stickiness, see ROBERT SCOTT & MITU GULATI, *THE THREE AND A HALF MINUTE TRANSACTION: BOILERPLATE AND THE LIMITS OF CONTRACT DESIGN* (forthcoming, U. Chicago Press 2013).

<sup>2</sup> Compare *Henningsen v. Bloomfield Motors*, 161 A.2d 69 (NJ 1960) (refusing to enforce boilerplate clause), and *ProCD Inc. v. Zeidenberg*, 86 F.3d 1447(7th Cir 1996) (Easterbrook, J.) (making the point that boilerplate can be useful).

<sup>3</sup> Stephen J. Choi, Mitu Gulati & Eric A. Posner, *The Evolution of Contractual Terms in Sovereign Bonds*, \_\_ J. LEGAL ANALYSIS \_\_ (2012), available at <http://jla.oxfordjournals.org/content/early/2012/05/31/jla.las004.full..>

market as a whole – in the case of sovereign debtors, these were individual defaults rather than regional or global crises.

In this article, we extend our prior research to analyze the internal dynamics of these periods of clustered change. We assess how boilerplate terms shift to a new standard.

The industry we use in our analysis is the sovereign bond market for foreign-law governed bonds. These are the bonds typically purchased by cross border investors and are typically governed by either the laws of New York or England. The parties in this market tend to be sophisticated (states, banks, mutual funds, pension fund, hedge funds, etc.). Regulation is sparse—after all, the key actors are the states themselves. And the basic economic problem in the transaction has remained the same over centuries. States borrow money from foreign investors. But it is hard to force the states to pay the money back if the states decide that they would rather not. States nonetheless have an economic incentive to give investors some confidence in getting repaid in order to get the investors to lend to the states in the first place. The stability of the basic economic transaction over time is important because it enables us to test our evolutionary model over a long period of time.

We focus on a particular shift in the boilerplate sovereign bond contract for those issuances governed under New York law: the shift toward collective action clauses (or CACs) from unanimity action clauses (or UACs) governing changes to payment related terms. The shift to CACs was a watershed event in the history of sovereign bond covenants.<sup>4</sup> It significantly increased the ability of bondholders and issuers to engage in debt restructurings.<sup>5</sup> Our interest is not only with how and when New York-law governed contracts shifted from UACs to CACs for payment terms but also the process of change for a number of other CAC-related terms, including the vote threshold for non-payment terms as well as disenfranchisement, mandatory meeting, and aggregation clauses (we explain these later). Together particular combinations of these terms form the “model” that applies in any

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<sup>4</sup> There is now a large literature discussing this debate and the eventual shift to CACs in the New York market. See, e.g., JOHN B. TAYLOR, GLOBAL FINANCIAL WARRIORS 100(2007); Randal Quarles, *Herding Cats: Collective Action Clauses in Sovereign Debt--The Genesis of the Project to Change Market Practice in 2001 to 2003*, 73 L. & CONTEMPORARY PROBLEMS 29 (2010); Sean Hagan, *Designing a Legal Framework to Restructure Sovereign Debt*, 36 GEO. J. INT'L L. 295 (2005); David Skeel, *Can Majority Voting Provisions Do it All?* 52 EMORY L. J. 417 (2003).

<sup>5</sup> On the impact of these CACs, see Michael Bradley & Mitu Gulati, *Collective Action Clauses for the Eurozone: An Empirical Analysis* (March 2012 draft; available on SSRN.com). The question of exactly how important these CACs have been is a matter of continuing debate, but the basic point that a bond with a unanimity requirement to alter payment terms is harder to restructure than one with a supermajority one is not at issue. Cf. FEDERICO STURZENEGGER & JEROMIN ZETTELMEYER, DEBT DEFAULTS AND LESSONS FROM A DECADE OF CRISES (2006).

particular sovereign bond contract. In discussing the evolution of this model, we will occasionally describe innovations as “major” and “minor”. Consistent with the policy debates over CACs, we call the shift away from unanimity as the “major” shift and the changes in other terms as “minor” shifts.

Shocks to the sovereign debt market, in the form of Mexico’s crisis in 1995, the Asian Financial Crisis in 1997–98, and Argentina’s default in 2001, were important triggers for the changes in the contract model. We report on the types of contract innovations that took place with the start of these shocks and the market participants associated with these changes. Importantly, a shift in the CAC model as the new standard did not occur overnight. Instead, there was a period of time after Mexico’s crisis in 1995 through Argentina’s default in 2001 during which the use of CACs was infrequent and only associated with more marginal market participants.

After this initial period, a tipping point occurred—driven by the cumulative effect of the default shocks as well as vocal public sector pressure—at which point top market participants changed from supporting the old standard to competing actively with one another to generate the new standard. At this tipping point, the usage of the old standard dropped rapidly and the incidence of the new CACs increased dramatically—giving an X pattern at the point where their usage percentages in the market crossed. We report evidence that once this tipping point—the X point—is reached, subsequent CAC innovations, largely involving the CAC-related terms such as the aggregation clause, are driven by the top market participants competing to control the eventual new CAC-standard. This competition eventually led to a new standard, Mexico’s version of the CAC first used in 2003 and a gradual slowing of adoption of the CAC model in the market as CACs saturated the market. This slow initial experimentation, then rapid acceleration of adoption, followed lastly by a slowing adoption in the market as the CAC became dominant, tracks the classic S adoption curve found in the product innovation literature.

In Part II, we survey the background literature on contract innovation. We draw from this literature to set up our hypotheses regarding the process of boilerplate contract change. Part III describes our sovereign bond dataset, including the key CAC clauses, and the shocks to the sovereign bond market during the time period of our dataset that we use in our empirical tests. These shocks primarily hit issuers using New York-law governed bonds, and that was the market segment from which the impetus for innovation arose. Part IV presents evidence from the New York-law governed portion of our sovereign bond dataset on the process of contract change. Part V extends our analysis to parallel contractual change that occurred in the CACs within the English-law-governed sovereign bond market. We use

differences in how contract innovation occurred in this separate market to illuminate what distinguishes the initial stages of contract innovation from later stages of new contract standardization. In particular, the presence of external calls for change (in our case from the public sector) is an important factor in determining when top market participants shift from defending the existing standard to competing to generate the new standard.

## II. Background: The Innovation to Standardization Cycle

The idea of conceptualizing standard-form contracts as products is not a new one.<sup>6</sup> However, that conceptualization has not been extended into asking—as is frequently done in the commercial product literature—how the cycle of innovation to market dominance occurs for contract terms. We call this the innovation-to-standardization cycle because entering the standard-form or boilerplate is the equivalent of market dominance.

While the whole cycle has not been examined, portions of it have been studied. For example, scholars have examined the question of what factors induce shifts in the boilerplate, using models built on assumptions about strong network effects. Network effects, when added to the fact that returns from innovation in contract are difficult to capture (the difficulty in patenting the innovation combined with the ease of copying it), results in contract stickiness.<sup>7</sup> When contract parties abandon a standard and adopt a new form contract, they take the risk that courts will interpret their terms in an unpredictable way. At the same time, if their new form works well and is consistently interpreted by courts, then other parties can imitate it. Thus, the earlier adopters confer a positive externality while internalizing all the risk. Accordingly, one expects that firms will undersupply innovation of boilerplate or form contracts.

Using a model of network effects and stickiness in contract change, Kahan and Klausner predicted, and found, that high-volume intermediaries would be associated with changes in boilerplate provisions in corporate bond contracts.<sup>8</sup> Research by two of us on sovereign debt contracts found roughly similar high-

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<sup>6</sup> E.g., Mark Suchman, *Contract as Social Artifact*, 37 L. & SOCIETY REV. 91 (2003); John Burke, *Contract as Commodity: A Non Fiction Approach*, 24 SETON HALL LEGIS J. 285 (1999-2000); Hank T. Greely, *Contracts as Commodities: The Influence of Secondary Purchasers on the Form of the Contract*, 42 VAND. L. REV. 133 (1989).

<sup>7</sup> For an overview of the legal literature, see Clayton P. Gillette, *Standard Form Contracts* (2009 draft), available at [http://lsr.nellco.org/nyu\\_lewp/181/](http://lsr.nellco.org/nyu_lewp/181/).

<sup>8</sup> Marcel Kahan & Michael Klausner, *Standardization and Innovation in Corporate Contracting* (or 'The Economics of Boilerplate'), 83 VA. L. REV. 713 (1997).

volume intermediaries as being key change agents (the change agents in question were different in the two settings; but the basic idea was the same).<sup>9</sup> The theory is that in markets with strong network effects, there are costs to deviating from the boilerplate. Higher-volume intermediaries such as investment bankers or law firms are more willing to change boilerplate language than their lower-volume competitors, because the high-volume intermediaries have the scale to ensure the adoption of a new standard while also garnering the benefits of moving to an improved product design, at least in the short term. Being at the forefront of innovation potentially also helps confirm the status of these high-volume intermediaries as market leaders.<sup>10</sup> More generally, scholars studying financial product innovation have found that strong network effects can give rise to big first-mover advantages to innovations by large investment banks.<sup>11</sup>

However, recent research suggests that deviations from the boilerplate or standard form occur more often than the strong network effects model might predict.<sup>12</sup> In the context of boilerplate financial contracts among sophisticated parties, research has found that contract innovations arise not only from high-volume intermediaries but also from marginal players.<sup>13</sup> The reason may be that marginal players believe that they can best compete with established players by innovating, while established players have no reason to take the risk of negative outcomes from contractual innovation if they can rely on returning customers or their reputation for satisfactory performance of legal work. Indeed, it is often thought in the context of production that small firms are more innovative than large

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<sup>9</sup> Stephen J. Choi & Mitu Gulati, *Innovation in Boilerplate Contracts: An Empirical Examination of Sovereign Debt Contracts*, 53 EMORY L. J. 929 (2004).

<sup>10</sup> E.g., Damon J. Phillips & Ezra W. Zuckerman, *Middle-Status Conformity: Theoretical Restatement and Empirical Demonstration in Two Markets* 107 *Amer. J. Soc.* 379 (2001) (suggesting that innovation typically arises from either those at the top of the status hierarchy, seeking to confirm that status, or those at the bottom, seeking to break into the market).

<sup>11</sup> Peter Tufano, *Financial Innovation*, in HANDBOOK OF ECONOMICS AND FINANCE (George M. Constantinides ed. 2003); more generally, see W. Scott Frame & Lawrence J. White, *Empirical Studies of Financial Innovation: Lots of Talk, Little Action?*, 42 *J. ECON. LIT.* 116 (2004).

<sup>12</sup> The studies discussed in the text examined financial contracts with sophisticated lawyers on both sides. Mass-produced take-it-or-leave-it consumer contracts, where only one side has counsel, are a different kettle of fish. Examining this other context, Marotta-Wurgler and Taylor, found more frequent changes in contract language than the prior studies. Marotta-Wurgler and Taylor also found that innovations were more likely to emanate from younger, larger, and faster growing firms. Florencia Marotta-Wurgler & Robert Taylor, *Set in Stone? Change and Innovation in Consumer Standard-Form Contracts*, *NYU L. Rev.* \_\_ (forthcoming 2012).

<sup>13</sup> Mark C. Weidemaier, *Disputing Boilerplate*, 82 *TEMPLE L. REV.* 101 (2009); Mark C. Weidemaier, *Reforming Sovereign Lending Practices: Modern Initiatives in Historical Context* (UNCTAD Working Paper 2012); Mark C. Weidemaier, Robert Scott & Mitu Gulati, *Origin Myths, Contracts and the Hunt for Pari Passu*, *L. & SOC. INQUIRY* \_\_ (2012), available at <http://onlinelibrary.wiley.com/doi/10.1111/j.1747-4469.2012.01313.x/abstract>; Scott & Gulati, *supra* note 1.

firms. In any event, the contractual innovations by marginal players did not always receive high levels of attention in the literature, perhaps because the innovations in question did not receive widespread adoption.<sup>14</sup>

To reconcile these two lines of research, one might hypothesize that there are two distinct periods to the standardization process. During the initial period there are innovations or deviations from the standard form, but they do not necessarily garner widespread adoption. These innovations can come from a wide range of parties. We conjecture that market participants at the margins, without a vested interest in maintaining the existing standard, will be the most likely to promote innovation in the initial period. The dominant players, being the primary users of, and experts in, the existing standard, will be less likely to innovate in this first period. The next period, where a particular innovation becomes widely adopted is where high-volume or high-status intermediaries play a key role in promulgating the innovation. Approval of an innovation by official actors—in the sovereign debt context, a key industry group or the IMF may be such actors—might also have an impact on whether the innovation gained wide adoption.<sup>15</sup>

To summarize, the literature suggests two things. First, deviations away from the boilerplate can and do occur. But early versions of these innovations often receive little notice; it can be decades before an innovation gets picked up for wider adoption. Second, deviations from the standard-form do occasionally displace the old boilerplate and those displacements frequently correlate with the adoption of the deviation by high-volume players in a market.

Accordingly, using our data of sovereign bond contracts, we first hypothesize that prior to a shock, the existing boilerplate standard will dominate with little to no innovation. Standards have inertia and are costly to change. Without any shock to move even marginal market participants away from the standard, we expect the pre-existing standard to prevail in the market. We refer to this as “stage one”. Second, once shocks commence, we predict a period of experimentation by more marginal players in the market (referred to as “stage two”). Third, with enough shocks and possibly external pressure, we predict that the shift to a new standard will accelerate, particularly once a shift to a new standard is viewed as likely in the marketplace, and then eventually slow as the new standard saturates the market

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<sup>14</sup> See Mark Gugiatti & Anthony J. Richards, *The Use of Collective Action Clauses in New York Law Bonds of Sovereign Issuers*, 35 GEO. J. INT’L L. 815 (2004); Ann Gelpern & Mitu Gulati, *Innovation After the Revolution: Foreign Sovereign Bond Contracts Since 2003*, 4 CAPITAL MKTS. L.J. 85 (2009).

<sup>15</sup> Anna Gelpern & Mitu Gulati, *Public Symbol in Private Contract: A Case Study*, 84 WASH. U. L.Q. 1627 (2006).



(referred to as “stage three”). We predict that top market participants that derive value from the specific contract language (such as attorneys selling their services in part as contractual experts) will take the lead in innovation once it is clear that the market will shift away from the old standard.

### **III. The Dataset: Shocks and Clauses**

We use a dataset covering roughly twenty years of sovereign bond issuances. This is the era of the modern cross-border sovereign bond markets. Although there were a small number of sovereign bond issuances done prior to 1990, much of the lending in the pre-1990 period was in the form of syndicated loans. The bond market began growing significantly, in the wake of the Latin American Debt crisis of the late 1970s and early 1980s.<sup>16</sup> Our dataset includes bonds available on the Thomson One Banker database issued between January 1, 1990 and July 1, 2011 and contains over 700 separate bond issues by roughly 75 sovereigns.

The Thomson One Banker database has one of the largest collections of contemporary sovereign bonds. Our data on contract terms is based on the summary of terms provided in the offering documents (prospectuses, prospectus supplements and offering circulars) mentioned available on the databases mentioned above. While we have only a small subset of the actual contracts (roughly 30), we have no reason to think that the offering documents contain inaccurate descriptions of the underlying contract provisions. Further, our comparisons of the actual contracts with the disclosures in the offering documents provided an exact match on the provisions we examined.

For our analysis of the evolutionary process for contract terms, we take as our starting point a period of relative calm in the international lending markets, the early 1990s. This is a period during which both the New York-law and English-law market had developed rather stable, albeit different, boilerplate contracts that evolved out of the experiences with the Latin American debt crisis. From that period of stability, we trace changes in contract terms as they occur before and after subsequent shocks to the sovereign market. We define “shocks” as events that, according to press accounts and policy discussions at the time, caused key actors to question the efficacy of the prevailing boilerplate. The shocks that we discuss have been extensively discussed in the substantial literature relating to CACs.<sup>17</sup>

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<sup>16</sup> On the shift from syndicated loans to bonds, see Graciela Kaminsky, *Crises and Sudden Stops: Evidence From the International Bond and Syndicated-Loan Market*, Bank of Japan Working Paper 2008-E-10, available at <http://www.imes.boj.or.jp/research/papers/english/08-E-10.pdf>.

<sup>17</sup> For references, see Gelpern & Gulati, *supra* note 15.

## A. The Clauses

As noted earlier, the clauses we examine were at the center of reform debates relating to the New York-law market for sovereign bonds, through the period 1995-2003. This is the set of terms referred to as CACs. A sovereign bond is a multi-creditor contract. Typically, there will be hundreds of bondholders governed by a single bond issuance (which, today, is often in the billions of dollars or euros). Prior to 1990, for the most part, if the sovereign debtor needed to ask for debt relief, it needed to conclude a debt reduction agreement with each of the individual bondholders under the prevailing unanimity action clause or UAC. However, as the number of bondholders and their level of dispersion across the globe expanded—which it did, with the expansion of the bond market and the shift away from syndicated loans—the coordination problem became increasingly difficult to solve under UACs. In particular, individual bondholders, despite their small holdings, were able to hold up any collective attempt to renegotiate the debt. This holdout problem worsened with the emergence of hedge funds that used their deep pockets to pay for high-quality litigators and to avoid liquidity problems that might cause small bondholders to settle. The proposed solution from policy and industry experts was for the contracts to be reformed to bind these holdouts to a restructuring, so long as some significant fraction of the creditors agreed to the reform. Hence the term “Collective Action Clause” or “CAC”.

We examine the evolution of this CAC from the time when the dominant model in the market required unanimous consent for modification of terms, to the time at which the new dominant model required less than unanimous consent.

A large literature on CACs already exists.<sup>18</sup> Because much of the existing literature on CACs is from either economics or finance, the focus is on the economic impact on adopting CACs; that is, the impact on the cost of capital for sovereign debtors.<sup>19</sup> By contrast, we are interested in how and why these clauses evolve. Much of the existing research assumes that these bonds meaningfully differ along only a single dimension: the vote that they require for the alteration of payment terms (by “payment”, we mean principal, interest, maturity and currency). Indeed, much of the

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<sup>18</sup> *E.g.*, Barry Eichengreen & Ashoka Mody, *Do Collective Action Clauses Raise Borrowing Costs?* 114 *ECON. J.* 247 (2004); Anthony Richards & Mark Gugiatti, *Do Collective Action Clauses Influence Bond Yields?*, 6 *INT’L FIN.* 415 (2003); Michael Bradley & Mitu Gulati, *Collective Action Clauses for the Eurozone: An Empirical Analysis* (2012 draft), available at [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1948534](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1948534).

<sup>19</sup> *E.g.*, Mark Gugiatti & Anthony Richards, *Do Collective Action Clauses Influence Bond Yields? New Evidence from Emerging Markets* (2003). [www.rba.gov.au/rdp/rdp2003-02.pdf](http://www.rba.gov.au/rdp/rdp2003-02.pdf); Federico Weinschelbaum & Jose Wynne, *Renegotiation, Collective Action Clauses and Sovereign Debt Markets*. 67 *J. INT’L ECON.* 47 (2005).

research assumes that there are only two types of contract provisions, UACs (requiring unanimity to alter payment terms) and CACs (requiring a 75% vote to alter payment terms). An examination of the contracts, however, reveals that these CACs differ along a number of important dimensions other than the raw vote.

Below, we describe five dimensions along which we measure these CAC provisions.

i. Vote Requirement – Payment Term Modification: CACs vary in terms of the vote fraction required to modify payment terms. For each bond, we calculate the *lowest vote* required to alter payment terms. This calculation is made as a function of features in the contract such as quorum and adjourned meeting provisions. Some bonds, for example, allow for the required vote to be reduced at the adjourned meeting if a quorum is not satisfied at the initial bondholder meeting. For the bonds in our dataset, the vote requirements range from a high of 100% (unanimity) to a low of 18.75%.<sup>20</sup> Because this is the most important dimension, we code the models in terms of all of their variations. The models, in New York and England have *Min Mod Vote* equal to either 1, .85, .75, .375, .25 or .1875.

ii. Vote Requirement – Modification of Other Key Terms: While research on CACs has primarily focused on the vote required to alter payment terms, the ability to alter non-payment terms can also be important to sovereign issuers seeking to restructure their bonds. Crucial non-payment terms include the negative pledge clauses, cross default provisions, acceleration provisions and governing law clauses. A sovereign seeking to do a restructuring can use its ability to threaten the alteration of key non-payment terms, assuming it has enough creditor support, to incentivize a restructuring. Because the ability to alter non-payment terms is less important than the ability to alter payment terms, we consolidate the variation into three categories (high, medium and low). We do this in order to limit the number of moving parts in our analysis to fewer than a dozen different CAC models. Specifically, what we have in the data is that *Other Vote* is equal to either 1, .37, .5, .67 and 0.75. For the sake of simplicity, and because there are relatively few bonds with *Other Vote* equal to .37 and .67, all of which show up in the same period (stage two) as the 0.5 value shows up, we fold those two into the 0.5 variable. That gives us

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<sup>20</sup> The 0.1875 vote requirement can be somewhat misleading in that it suggests a much lower vote requirement than operates in actuality. That vote requirement typically comes hand-in-hand with a requirement of a mandatory meeting with diminishing quora. What we calculate for this variable is the minimum vote required to alter payment terms (*Min Mod Vote*). For the bonds that we code as requiring 0.1875, the typical vote requirement at the first meeting is 75% of those present at the first meeting (in principal amount), so long as there is a 50% quorum. If that 75% quorum at the first meeting is not met, the quorum required for the next meeting reduces to 25%. That then translates into a minimum required vote of 75% of 25%, which is 18.75%.

variation between the old standard (1), the intermediate standard (0.37-0.67) and the most recent standard (0.75).<sup>21</sup>

iii. Disenfranchisement: If there is voting where a supermajority of voters can potentially outvote a minority holder and force her to suffer a haircut, the voters might want safeguards to make sure that the debtor is not able to manipulate the vote. However, this is not always the case. Some bondholders are willing to give the issuer wide leeway in terms of who gets to vote on the Modification CAC. Others, by contrast, restrict the voting to those bondholders who are not “owned or controlled” by the issuer. We code this variable, *Disen*, as taking two forms: 0 (no disenfranchisement provision) and 1 (a restriction on the issuer voting bonds it “owns or controls”). There are a handful of additional variations in the data, such as whether Central Banks are allowed to vote. We do not consider those.

iv. Mandatory Meetings: Some bonds require that any vote to decide on whether to activate a Modification CAC has to occur at a physical meeting of the bondholders. The requirement of a meeting typically has two effects, going in opposite directions: one, making it harder to restructure; the other, making it easier. On the one hand, a physical meeting of the holders allows them to coordinate; and that means that they might coordinate to block the intentions of the debtor. On the other hand, because meetings typically come with quorum requirements (and diminishing quorum requirements if the quorum is not satisfied at the first meeting), the actual vote required at a meeting is generally lower than that required in the absence of a meeting requirement. This lower vote requirement, in theory, makes bonds with a meeting requirement easier to apply Modification CACs to than those without one. We code the *Mand Meet* variable as coming in two types: 0 (no meeting required) and 1 (meeting required)

v. Aggregation: The typical CAC operates within an individual bond. Any restructuring therefore has to be conducted bond by bond—a difficult and tedious exercise where a sovereign has hundreds of bonds outstanding, as can sometimes be the case. To solve this problem, some bonds use Aggregation clauses that operate as a function of an approval vote across all of the sovereign’s bonds (typically, a vote that is higher than the requirement in an individual bond). Because, there is only one type of Aggregation provision that was used up to 2011 (requiring an aggregated vote of 85% across the bonds, so long as individual bonds reach at least a 67% vote of the outstanding principal amount), we code the *Agg* variable as either 0 (no

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<sup>21</sup> The degree of variation in the Other Vote variable could be increased further, if we included the effects of diminishing quorum requirements in the English-law models. However, if we were to allow full variation in the *Other Vote* variable, we would have an unmanageable number of models, with much of the variation occurring on a variable of secondary importance as compared to the vote required to alter payment terms (*Min Mod Vote*).

aggregation across bonds; each bond has to vote and approve the change individually) or 1 (aggregation across bonds is allowed).

We treat any particular combination of these five dimensions as our contract “model”. Our empirical tests focus on who introduces new models into the marketplace and when this introduction takes place.

## **B. The Agents**

As part of our examination of the contract evolutionary model, a goal for us is to identify the key change agents, that is, the leaders in the innovation to standardization cycle. To be able to do this, we coded each bond for data for both the contract terms mentioned above and also for the identities of the key agents working on the deals. The agents include the issuer’s lawyers, the underwriter’s lawyers, and the lead investment bank. In terms of the counsel, we coded for the law firm in the legal jurisdiction of issue. That is, if the issue was under New York law, we coded for the New York based law firm that would presumably have had responsibility for crafting provisions that would work with the background New York law. Where the transaction in question was a restructuring, as opposed to a regular issuance, we also code that fact since the lawyers and bankers who tend to work on restructurings are often different from those who do offerings. There are other agents who are involved in these deals, such as the local counsel (e.g., the local counsel in South Africa on an issuance by the Republic of South Africa in New York, under New York law) and the secondary investment banks (that is the banks with smaller shares of the issue). Our understanding is that these actors play minimal roles in the contract drafting process. Hence, we did not collect data on their identities. Finally, since the lawyers and bankers on any deal are ultimately hired by the sovereign issuer, we code for the identities of the issuers as possible architects as change.

Figures A1 through A6 in the Appendix depict the population distributions by total number of deals during our study’s 1990 to 2011 time period for issuers, issuer’s counsel, and underwriter’s counsel both for New York and English law governed bonds. The figures illustrate the dominance of a relatively few market participants for the New York and English-law sovereign bond markets. For example, in the New York law market, Cleary Gottlieb has more than 25% of the market on the issuer counsel’s side and Sullivan & Cromwell has more than 25% on the underwriter counsel’s side. We define high-volume intermediaries as those with more than 25% of the market. The graphs show that there are a handful of firms that dominate and then there are many others that only do a handful of deals each

over a twenty-year period. For purpose of the analysis that follows, we break the data on potential change agents down into quartiles based on total number of deals they have done. We label the top quartile as “quartile 1” where we put the players who make up the top quarter of players and so on.

The data on investment bankers does not show the same degree of skew as that on the lawyers. No single bank, in either the New York or English markets dominates the market. Reported in a different paper, the data show that there tends to be a great deal of variation in bankers in that the same issuer will frequently change its lead bankers from deal to deal (most likely because the deals are put to an auction).<sup>22</sup> By contrast, the lawyers are long-term players. Further, while the bankers change, the lawyers for the bankers and the issuers appear to come in pairs – both having long-term relationships with the issuer. Consistent with the foregoing, the data also reveal that when one set of lawyers changes (e.g., on the issuer side), the other set (on the underwriter side) also typically changes.

### C. The Shocks

We argued earlier that innovation occurs in response to external shocks that call into question the standard model or the boilerplate. The shocks that we use as the basis for our investigation are the shocks that were widely reported in the international press as having caused a rethinking of the existing terms in sovereign bonds. In our two-market system, we assume that shocks that directly impact one market will be felt with a reduced influence in the other market. So, a shock in one market that produces a change to the boilerplate, might be felt only with diminished impact in a second market.

The three shocks we identify that hit during our period of study are: the Mexican “Tequila” crisis (which resulted in a bailout from the U.S.) (1995); the Asian financial crisis (which resulted in a number of IMF bailouts) (1997–98); and the Argentine default (IMF funding followed by a default) (2001).<sup>23</sup> These were the shocks that produced calls for reform, particularly in terms of the need to put in place mechanisms so that there was not a constant need for bailouts. Effectively then, the time period we study has three sub periods. First, the pre-shock period of

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<sup>22</sup> Michael Bradley, Mitu Gulati & Irving De Lira Salvatierra, *Lawyers as Reputational Intermediaries: Sovereign Bond Issuances (1820-2011)* (April 2012; on file).

<sup>23</sup> For discussions of these crises, the bailouts, and the resulting push towards CACs, see Gelpern & Gulati, *supra* note 15; Barry Eichengreen, *Restructuring Sovereign Debt*, 17 J. ECON. PERSP. 75 (2003); JOHN B. TAYLOR, GLOBAL FINANCIAL WARRIORS: THE UNTOLD STORY OF INTERNATIONAL FINANCE IN THE POST 9/11 WORLD 119-131 (2007); John B. Taylor, *Defining Systemic Risk Operationally*, pp. 52-55, in *ENDING GOVERNMENT BAILOUTS AS WE KNOW THEM* (KENNETH E. SCOTT ET AL., EDS. 2007).

calm of 1990–94 (stage one). Then there is the 1995–2002 period during which multiple large shocks hit the global sovereign debt markets (that is, the period of shocks; stage two). And then the post-shock period of 2002–11 (stage three). The three shocks mentioned all primarily hit the sovereign debt markets in New York—the sovereigns in question were primarily users of the New York market and the New York style boilerplate (Russia being an exception). Any impact of the shocks, therefore, should show up in a more marked fashion in the New York market.

As of this writing, in June 2012, the sovereign markets have been hit by a new shock, the Eurozone crisis. This shock has led to fresh calls for standard sovereign bond contract terms to be revised. Specifically, the call for reform has been with respect to the CACs used on the European markets.<sup>24</sup> Our data, however, only reaches up to the beginning of the Eurozone crisis.

#### **IV. Evidence on Innovation in the New York Models**

Based on the five CAC-related dimensions described in the prior section, we find a total of ten different CAC models to have been in use during the 1990–2011 period. In this section, we do two things. First, we examine the evolution of these different models over the periods of 1990–94 (pre-shock period of stability); 1995–2001 (multi-shock and initial innovation period); and 2002–11 (post-shock and standardization period). We hypothesize that these three periods, as demarcated by shocks, correspond to the three stages of our innovation cycle analysis. Stage one is the pre-shock period of stability; stage two is the period during which marginal players commence innovations under the shadow cast by the dominant UAC standard; stage three is the post-shock and standardization period when dominant players commit to the new CAC-centered standard. For each stage, we document those models in use that continue from the past as well as new models that appear in the stage. Second, we unpack the data to identify the types of agents associated with new model innovation during the different stages.

Our focus is on the timing of the introduction of new CAC models and the market participants associated with the innovation. We define a new model as the use of a new combination of the five CAC-related terms. Just like a bicycle model can vary from a prior model by changing one aspect of the bicycle, say the type of brake, we treat a particular contract as using a new model if any one of the five CAC-related terms change from any pre-existing model. For clarity, we give the models the name

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<sup>24</sup> *Euro zone Deal Sees Collective Action Clauses from 2013-Elysee*, REUTERS, November 28, 2010, available at <http://www.reuters.com/article/2010/11/28/eurozone-crisis-france-idUSPISQME6ID20101128>

of the nation that first began using it. Since some of the models in our first stage arise out of the prior era, we have had to utilize a supplemental dataset (for naming purposes only). Thomson One Banker, our primary source for the 1990–2011 period, has relatively little data for the prior period, 1950–90. To examine the origins of the models during this period, we used data collected from the archives at the U.S. Library of Congress.<sup>25</sup>

### A. Stage One (Pre Shock Period of Stability)

To assess the introduction of new models in stage one, we start with three models that were already in use prior to stage one: Belgian Congo 1958, Ireland 1967 and Indonesia 1983. The Belgian Congo 1958 model is what one might call the full unanimity model, requiring 100% creditor approval to change either payment or non-payment terms. The Belgian Congo 1958 model dominated all through the 1800s and the 1900-1980 period, which essentially had no CACs (Min Mod Vote = 1 and Other Vote = 1).<sup>26</sup> The Ireland 1967 model allows for some modification, requiring 100% approval for payment term changes, but relaxing that requirement for non-payment terms (to 50%). Finally, the Indonesian 1983 model is an early version of the modern CAC (the one that dominates the 2002–11 period). It allows for modification of both payment and non-payment terms with a less than 100% vote requirement (75% for payment terms; 50% for non-payment). All three of these models pre date our stage one; that is, the 1990–94 period in our dataset. No new models were introduced during stage one. Table 1 reports the different models that were in use in stage one.

**Table 1: New York Models in Stage One (1990–94)**  
*Pre-Existing Models*

| Model Name         | Min Mod Vote - | Other Vote | Disenfranchisement | Mandatory Meeting | Aggregation | Market Share |
|--------------------|----------------|------------|--------------------|-------------------|-------------|--------------|
| Belgian Congo 1958 | 1              | 1          | 0                  | 0                 | 0           | 17%          |
| Ireland 1967       | 1              | 0.5        | 0                  | 0                 | 0           | 80%          |
| Indonesia 1983     | 0.75           | 0.5        | 0                  | 0                 | 0           | 3%           |

Note: 35 issues

As suggested in Table 1, stage one is a period of calm. All three of the models in use during this period (1990–94) are carry overs from the prior period (Belgian Congo 1958; Ireland 1967; Indonesia 1983). One of those models is from three decades prior (Belgian Congo 1958) another is from two decades prior (Ireland 1967). They are also all two-dimensional models. That is, only two of the five

<sup>25</sup> Thanks to Mark Weidemaier, with his assistance with the Library of Congress data.

<sup>26</sup> See Weidemaier, *supra* note 13. We name it Belgian Congo 1958, because that is the first New York-law bond that we have from the post-World War II period in our Library of Congress dataset.



dimensions we tabulate appear in the stage one models. We report the frequency of use of the models in stage one below.

Among these three models, a single model dominates: Ireland 1967. For the 35 sovereign bond issuances for which we have data for this period, the Ireland 1967 model was used in 80% percent of the issuances. By contrast, the Belgian Congo 1958 model was used by roughly 17% percent and the Indonesia1983 model was used only in a single issuance (Indonesia’s own issuance in 1983). And Indonesia itself, by the end of the stage one period, had switched to the Ireland 1967 model. Basically, there was no innovation or experimentation with CACs in stage one.

## B. Stage Two (Multi-Shock Period)

Stage two begins with a shock: the Mexican debt crisis in 1995, where the U.S. bailout resulted in widespread discussion of the need to reform the unanimity model that dominated the New York-law market in stage one.<sup>27</sup> The subsequent financial crises in Asia (1997–98) and Argentina (2001) and resulting bailouts from the IMF were shocks that added to the concerns about the existing unanimity model and the need to move away from the bailout model. Table 2 reports on the CAC models in use in stage two.

**Table 2: New York Models in Stage Two**  
*Pre-Existing Models*

| Model Name         | Min Mod Vote | Other Vote | Disenfranchisement | Mandatory Meeting | Aggregation | Market Share |
|--------------------|--------------|------------|--------------------|-------------------|-------------|--------------|
| Belgian Congo 1958 | 1            | 1          | 0                  | 0                 | 0           | 6%           |
| Ireland 1967       | 1            | 0.5        | 0                  | 0                 | 0           | 86%          |

Note: 137 issuances

### *New Models*

| Model Name      | Min Mod Vote | Other Vote | Disenfranchisement | Mandatory Meeting | Aggregation | Market Share |
|-----------------|--------------|------------|--------------------|-------------------|-------------|--------------|
| Bosnia 1997     | 1            | 0.5        | 1                  | 0                 | 0           | 2%           |
| Qatar 1999      | 0.1875       | 0.5        | 0                  | 1                 | 0           | 1%           |
| Egypt 2001      | 0.85         | 0.5        | 0                  | 0                 | 0           | 1%           |
| Kazakhstan 1997 | 0.75         | 0.5        | 0                  | 0                 | 0           | 4%           |

Note: 137 issuances

From Table 2, note that the pre-existing models continue to find use in stage two. Overall, there are many more issuances during this period (our dataset has 137 bond issuances in stage two). The old Belgian Congo 1958 model, the anti-CAC

<sup>27</sup> See, e.g., BARRY EICHENGREEN & RICHARD PORTES, CRISIS, WHAT CRISIS? ORDERLY WORKOUTS FOR SOVEREIGN DEBTORS (1995).

model, is still used in the 1995–2001 period; albeit infrequently (being used by only 8% of the issuances, down from 16% in the prior period). The Ireland 1967 model continues to dominate with roughly 86% of the uses (up from 80% in the prior period).

Importantly, it is in stage two that we see the first new models since 1990 emerge, indicating considerably more innovation than during the prior period. Three different sovereign issuers introduce new models: Bosnia 1997; Qatar 1999; and Egypt 2001. The Bosnian innovation is a relatively small one; it introduces a disenfranchisement clause that restricts the issuer from voting bonds it owns or controls. Qatar's innovation is bigger. It borrows a model more commonly used in the English law market—with Min Mod Vote of 0.1875 and the requirement of a Mandatory Meeting. Egypt 2001, by contrast, uses a high Min Mod Vote of 0.85, with no meeting requirement. We treat one other model as a new introduction in stage two. Because the Indonesia 1983 model was abandoned by Indonesia itself in stage one, we treat Kazakhstan's return to Indonesia 1983 model as an independent innovation (effectively, the Kazakh-Indonesia 1997 model). A few years later, Lebanon in 2000 adopts the Kazakh-Indonesia 1997 model.

In sum, what we find during this period is that close to 94% of the issuances are under the two dominant models from the prior period, Belgian Congo 1957 (close to 8%) and Ireland 1967 (around 86%). The other models—Bosnia 1997, Kazakhstan 1997, Qatar 1999 and Egypt 2001—only get a handful of adherents. But these marginal models experiment with CACs on multiple dimensions in addition to the two dimensions (Min Mod Vote and Other Vote) in use in the stage one models—with new disenfranchisement and mandatory meetings clauses in addition to varying percentages for alterations to payment and non-payment terms.

We next examine whether those market participants associated with the innovations in stage two are themselves marginal participants. We hypothesize that larger market participants will not shift away from the existing standard until it becomes clear that a shift to a new standard is clearly underway. In Table 3 below, we set out these new entrants in terms of who their lawyers and bankers are. In reporting the characteristics of these new entrants, we break down the lawyer, banker and issuer characteristics based on whether they are in the first, second, third or fourth quartiles in terms of the number of sovereign bond issuances for the

1990 to 2011 period. That is, if the issuer’s counsel for Kazakhstan is in the top 25% of issuers, by volume, it gets a rank of 1 in the issuer’s counsel box.<sup>28</sup>

**Table 3: Market Rank Associated with New Models in Stage Two**

| Issuer Name     | Issuer Quartile | Issuer Counsel Quartile | Investment Bank Counsel Quartile | Investment Bank Quartile |
|-----------------|-----------------|-------------------------|----------------------------------|--------------------------|
| Bosnia 1997     | 4               | 4                       | n.a.                             | n.a.                     |
| Kazakhstan 1997 | 4               | 4                       | 4                                | 1                        |
| Qatar 1999      | 4               | 4                       | 4                                | 1                        |
| Egypt 2001      | 4               | 4                       | 4                                | 1                        |

n.a. = not available (in this case because Bosnia did a restructuring where typically only one set of lawyers is involved).

Issuers like Bosnia, Kazakhstan, Qatar and Egypt were not big players in the sovereign debt

### C. Stage Three (Post-Shock Period)

Stage three starts in 2002, after the Argentine default in late 2001. The Argentine default is significant because it is the last of the major shocks that occur for sovereigns that issued under New York law during the period of our study. We conjecture that the cumulative effect of the Mexican, Asian Financial, and Argentine shocks, as well as public sector responses to these shocks, led market participants to expect that a change would occur to the Ireland 1967 standard. After the Argentine default in late 2000, and increase in the decibel level of the complaints regarding the old contract models, it became gradually clear that there would be a new model. One of the key indicators here was the IMF’s proposal in 2002 of an alternative to CACs, a sovereign bankruptcy court (SDRM). Prior to that, the leading players in the market, such as the finance ministries of Mexico and Brazil, had been openly skeptical about CACs. However, the prospect of SDRM, along with the release of a G-20 draft of proposed new clauses, and endorsement of CACs by the U.S. Treasury, created a sense that CACs would happen.<sup>29</sup> But the question was, who would design the model that would be the new dominant design.

<sup>28</sup> Quartiles could also be done in terms of the dollar (or euro) value of deals. Our results remain the same when we define quartiles based on total dollar value of deals during the time period of our dataset. The results also remain largely the same if we use breakdowns in terms of the top 10%, next 10% and so on.

<sup>29</sup> This history is described in detail in Gelpern & Gulati, *supra* note 15.

While no additional shocks occur for New York-law governed bond issuances from 2002 to 2011 (hence we refer to this period as one of stability), the realization that a change in the boilerplate standard was to occur led to both a rapid change in the amount of contract innovation as well as the type of market participants involved in these changes. Table 4 reports on the types of pre-existing and new CAC models used in stage three.

**Table 4: New York Models in Stage Three (2002-2011)**  
*Pre-Existing Models*

| Model Name         | Min Mod Vote | Other Vote | Disenfranchisement | Mandatory Meeting | Aggregation | Market Share |
|--------------------|--------------|------------|--------------------|-------------------|-------------|--------------|
| Belgian Congo 1958 | 1            | 1          | 0                  | 0                 | 0           | 1%           |
| Ireland 1967       | 1            | 0.5        | 0                  | 0                 | 0           | 17%          |
| Bosnia 1997        | 1            | 0.5        | 1                  | 0                 | 0           | 3%           |
| Qatar 1999         | 0.1875       | 0.5        | 0                  | 1                 | 0           | 2%           |

Note: 284 issuances

*New Models*

| Model Name   | Min Mod Vote | Other Vote | Disenfranchisement | Mandatory Meeting | Aggregation | Market Share |
|--------------|--------------|------------|--------------------|-------------------|-------------|--------------|
| Mexico 2003  | 0.75         | 0.75       | 1                  | 0                 | 0           | 55%          |
| Brazil 2003  | 0.85         | 0.75       | 1                  | 0                 | 0           | 2%           |
| Turkey 2003  | 0.75         | 0.75       | 0                  | 0                 | 1           | 15%          |
| Uruguay 2003 | 0.75         | 0.75       | 1                  | 0                 | 1           | 5%           |
| Qatar 2009   | 0.1875       | 0.5        | 1                  | 1                 | 0           | 2%           |

Note: 284 issuances

We see four new models show up in 2003, in the early part of stage three: Mexico 2003; Brazil 2003, Uruguay 2003 and Turkey 2003. That means that almost half of all the new models we see over a 20-year period show up in a single year, 2003 (this is a big year for new models in the English-law market as well, as we will see later). The fifth new model during this period is Qatar 2009 (which, as we will see, is qualitatively different from the others).<sup>30</sup>

While the Ireland 1967 model still persists in stage three, it is far from being the dominant model. It drops from a market share of 86% to one of 17%. And the even older old Belgian Congo 1958 model drops from a 6% share to a 1% share (this

<sup>30</sup> There also a Japan 2004 model that comes not from the sovereign itself, but from issuances by the Japanese Development Bank; a quasi sovereign. It is a slight variation on the Mexico 2003 model in that it lacks the disenfranchisement provision.

model had almost a 100% market share in the pre-World War II period). Instead, in 2003, on the heels of the heated debate over the SDRM versus CACs (bankruptcy versus contract) in 2002, we see four new models show up: Mexico 2003; Brazil 2003; Uruguay 2003, and Turkey 2003. And quickly, these models begin to dominate the scene. Two features of these four new models are interesting. First, they all show up during the same year, 2003. This is the point at which the dominant model shifts in the New York market as the Ireland 1967 model exits. Second, the models in stage three that appear in 2003 are from the high volume issuers and their high volume lawyers, unlike what we saw in stage two. These four models are, we surmise, the big players competing to be the authors of the new dominant design.<sup>31</sup> Table 5 reports on the issuers and associated intermediaries that put forward new competing models in Stage three.

**Table 5: Market Rank Associated with New Models in Stage Three**

| Issuer Name  | Issuer Quartile | Issuer Counsel Quartile | Investment Bank Counsel Quartile | Investment Bank Quartile |
|--------------|-----------------|-------------------------|----------------------------------|--------------------------|
| Mexico 2003  | 1               | 1                       | 1                                | 1                        |
| Brazil 2003  | 1               | 1                       | 1                                | 1                        |
| Turkey 2003  | 1               | 1                       | 1                                | 1                        |
| Uruguay 2003 | 1               | 4                       | n.a.                             | n.a.                     |
| Qatar 2009   | 4               | 4                       | 4                                | 1                        |

n.a. = not available (Uruguay 2003, was a restructuring where there is typically only one set of lawyers involved)

Note from Table 5 that the four issuers that sought to compete over a new CAC standard in 2003 are all in the top quartile in terms of issuances. The attorney intermediaries associated with the four competing models in 2003 are also generally in the top quartile in terms of issuances. The issuer counsel and investment bank counsel for Mexico 2003, Brazil 2003, and Turkey 2003 are all in the top quartile. Not only are these players in the top quartile, they are the very top issuers and law firms, including Sullivan & Cromwell, Cleary Gottlieb and Arnold & Porter. The one exception among the 2003 models where we do not see a top issuer counsel is Uruguay 2003, where the issuer counsel is in the bottom quartile. Nonetheless, Uruguay would have received all first quartile scores if we had looked at any of its offerings other than its first one in 2003, which was a restructuring and

<sup>31</sup> The view that the big players like Mexico introduced their innovations because they realized that change was inevitable and wanted to preempt other models from becoming market leaders is consistent with reports from market participants. See Gelpert & Gulati, *supra* note 15 at 1696-1700; see also NOURIEL ROUBINI & BRAD SETSER, BAILOUTS OR BAIL-INS: RESPONDING TO FINANCIAL CRISES IN EMERGING ECONOMIES 309 (n.25) & 313 (2004).

therefore had a special set of lawyers (restructuring lawyers) and had no investment banker counsel. Overall, the point is that unlike what we saw in stage two, the issuer, issuer counsel, and investment bank counsel associated with the new models that are introduced immediately after it becomes clear that a change in the standard will occur are the top market participants. The active participation of the top market participants is consistent with the view that these participants have a competitive stake in controlling the contract standard. Attorneys that control the standard have a competitive advantage in selling their services to future sovereigns seeking to issue under the prevailing market standard. As with the new models in stage two, the investment bank associated with the new models in stage three are not always in the top quartile, consistent with the view that the investment bank itself does not compete based on contract language but instead along other dimensions such as the underwriting discount.

In sum, what we find in stage three is that the new models quickly take over. In our dataset of roughly 300 bonds for stage three (2002–11), over half of the sovereign bond issuances used the Mexico 2003 model of the CAC (55%). Ireland 1967, the holdover model from the prior period, had 17% of the market still, followed by Turkey with 15% and Uruguay with 5%. In some ways, Mexico 2003, the model that won out, also had the most illustrious pedigree. Not only do its issuer's counsel and investment bank counsel show up in quartile 1, but they are each the leaders within their quartiles (Cleary Gottlieb and Sullivan & Cromwell, being the top issuer and underwriter counsel, respectively).

One other thing to note is regarding the Qatar 2009 model. While a new model in stage three, Qatar 2009 is notable in that the issuer, issuer counsel, investment bank counsel are all the bottom quartile in terms of issuances. Importantly, by 2009, the Mexico 2003 model was securely in place as the standard leaving little room for competition. The Qatar 2009 model was thus more akin to the innovations by marginal players that occurred in stage two than the models in 2003 that the top market participants put into play to compete for the new standard. And if we look closely at Qatar 2009 versus the 2003 innovators, we see that the Qatar innovation was relatively minor (the addition of disenfranchisement to its 1999 model), whereas the 2003 innovators (Mexico, Brazil, Turkey and Uruguay) were innovating along the most important dimension – the vote required to modify payment terms.

That said, the new models of stage three, despite being from the big players, are all small variations on the innovations that showed up earlier in stage two. The shift from unanimity to something less (either 75% or 85% for Min Mod Vote) had

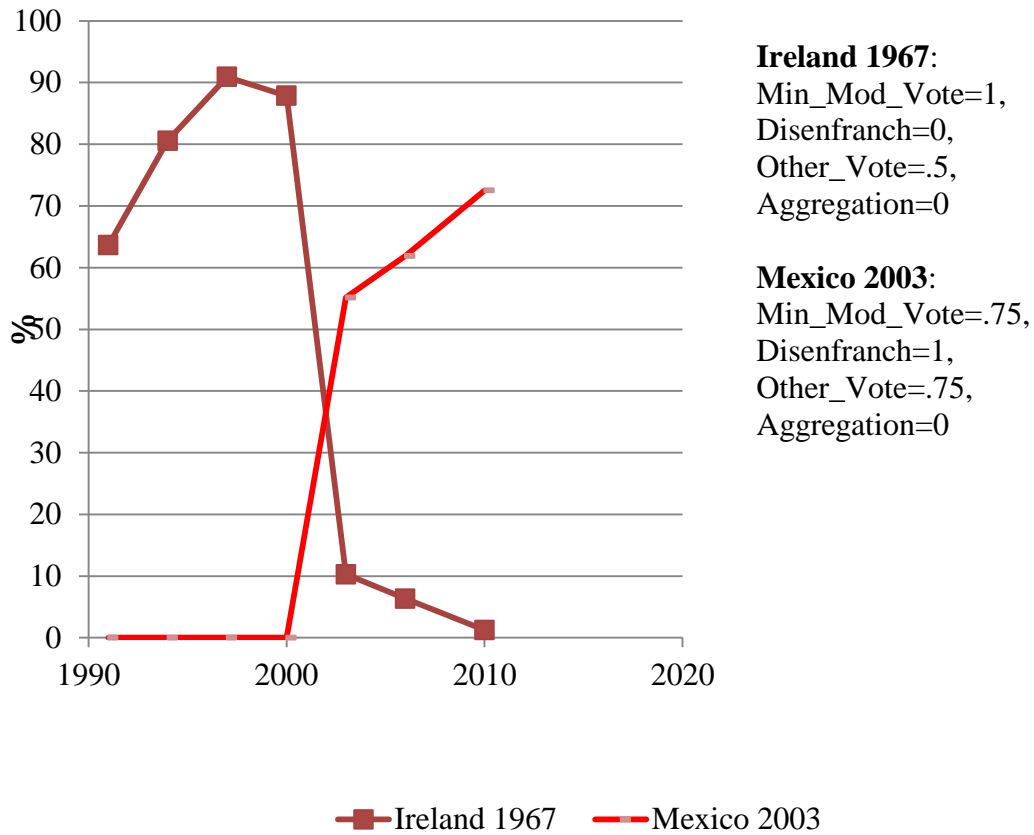
already been demonstrated to work by smaller players like Egypt 2001 (85%) and Kazakhstan 1997 (75%). In stage three, the Mexico 2003 and Brazil 2003 models used the same vote thresholds as Kazakhstan 1997 and Egypt 2001 had. In other words, the key dimension, the vote required to change payment terms, remained the same in the stage three new models. We conjecture that learning on how this key dimension played out in sovereign bond deals in stage two, including how they were priced, allowed stage three new models to incorporate these changes at low cost. What changed in stage three was the addition of ancillary terms, including Disenfranchisement provisions, higher vote thresholds for Other Vote, and Aggregation. It was like Steve Jobs of Apple Computer in the mid 1980s (an example of a top market participant) taking Xerox's mouse (at the time a marginal innovation much like the CAC payment related term in the stage two new models of our analysis) and making it more acceptable to the wider market (with the addition of important ancillary terms). No one remembers Xerox's mouse anymore. Job's mouse, by contrast, is one of the dominant designs on the market.

#### **D. Summary of Results**

We find that shifts in boilerplate contract terms do not occur without some initial shock. Absent a shock, boilerplate standards persist. During stage one, we report no new model innovations. Instead, all contracts use one of the three pre-existing CAC models and most use the dominant Ireland 1967 standard. Shocks can in turn induce a change in the market standard. An initial shock (Mexico 1995), can spur marginal players in the market to commence experimentation, reducing but not eliminating the dominance of a pre-existing standard (corresponding with stage two of our model). Eventually, the cumulative effect of the crises in Mexico 1995, Asia in 1997–98, and Argentina in 2002 as well as public sector pressure produced a loud call for change to some CAC model in New York-law governed bonds. Once market participants expect a change in the contract standard, the bigger players join the competition to set the market standard and changes in market practices take place rapidly (stage three of our model).

Figure 1 below depicts the percentage market share of the two dominant New York Bond CAC standards in effect during the time period of our study: Ireland 1967 and Mexico 2003. Note from Figure 1 that a rapid although not universal shift to the new Mexican model occurs after Mexico's 2003 issuance.

**Figure 1: New York Bond Models**



Importantly, the shift to the Mexico 2003 standard does not occur in isolation. Figure 2 reports on the market share of other competing models during our sample time period.



### Figure 2: New York Bond Models

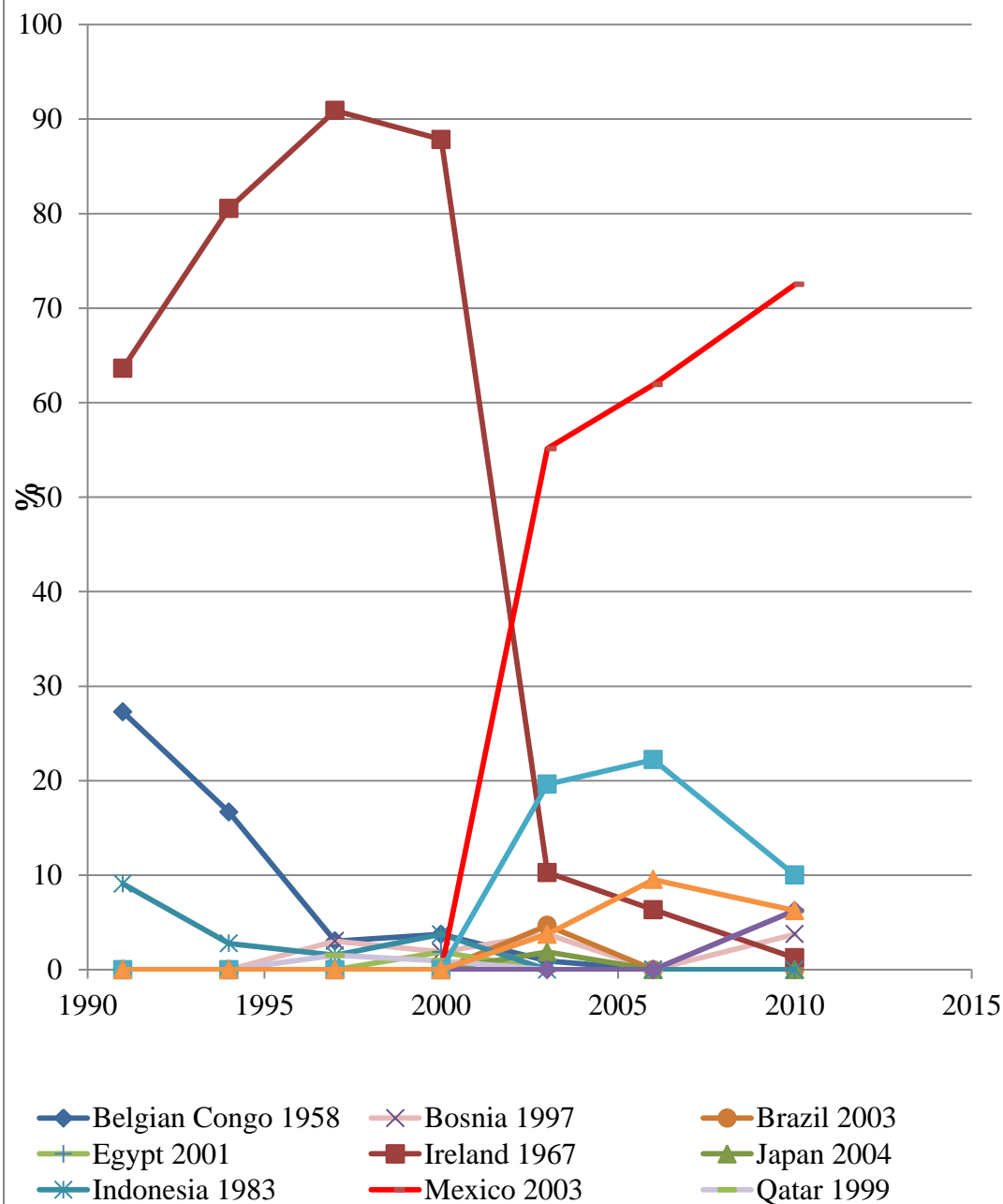


Figure 2 depicts the more marginal competing models prior to the Mexico 2003 shift. During stage two of our analysis, we saw new models from Bosnia 1997, Qatar 1999, and Egypt 2001. Not only are these issuers in the bottom quartile in

term of issuances but the intermediaries most concerned about the contract language (the issuer counsel and the underwriter counsel) are also in the bottom quartile in terms of issuances.

In contrast, once it becomes clear that a new standard is to emerge in the market, after for example the incidence of Ireland 1967 and Mexico 2003 cross in dominance (or at the X mark in the chart), the source of innovation in models changes. During stage three of our analysis, we see new models from Mexico 2003, Brazil 2003, Turkey 2003, and Uruguay 2003. As we report above, these issuers are not only in the top quartile in terms of issuances but the issuer counsel and underwriter counsel are generally in the top quartile as well. This finding is consistent with the hypothesis that once a shift to a new standard becomes clear, the top market participants who compete based on the type of contract they offer will have a strong incentive to take an active role in generating this new standard. The resulting competition among top players results in (a) a delay in the eventual shift to a universal new standard and (b) a time period during which there are competing standards with more than negligible market share until the universal new standard becomes dominant. In terms of Figure 2, this dynamic leads to the S curve of adoption of the Mexico 2003 standard that we observe. This S curve pattern is a familiar one in the scholarship on innovation, but has not yet been explored in the contract innovation research.<sup>32</sup>

## V. Aftershocks: The Impact on English Law Bonds

The sovereign bond market today, and over the period we study (1990–2011), is dominated by issuances out of two locations, New York and London.<sup>33</sup> Over the years, the contract documentation practices in these two markets, under either New York or English law, have developed in different ways. The fact that sovereign issuers themselves, over long periods of time, have shown themselves unlikely to switch between the English law or New York law enables us to examine how and when contract provisions migrate back and forth, independent of movements by the issuers themselves.<sup>34</sup>

In this section, we examine the data on English-law bonds. A key fact is that the shocks that we examine in this paper all primarily hit the New York market. Restructurings in the New York market, in the 1990s, were difficult to conduct

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<sup>32</sup> On the S curve in the innovation area, *see, e.g.*, Vijay Mahajan et al., *New Product Diffusion Models in Marketing*, 54 J. MARKETING 1 (1990); Barbara Wejnert, *Integrating Models of Diffusion: A Conceptual Framework*, 28 ANN. REV. SOC. 297 (2002).

<sup>33</sup> Bradley & Gulati, *supra* note 5.

<sup>34</sup> *Id.* (describing this aspect of the data).

because the vast majority of bonds contained unanimity requirements (UACs) to alter payment terms (Min Mod Vote = 1). The big change that took place in the New York market was the shift from UACs to CACs (Min Mod Vote = 0.75, typically). By contrast, the English market was already using CACs at the time the shocks in the New York market occurred. Indeed, innovators in the New York market were likely looking to the English market to borrow from the models that had had success there. One might expect therefore that there would be relatively little impact of the shocks in the New York market on English-law bonds. As we will see below, however, the English-law bonds, despite already containing CACs, did see innovation and experimentation in line with the New York market, albeit, with some significant differences.

### A. Stage One (Pre Shock)

Table 6 provides English-law bond data on the models in stage one. What we see in stage one for the English-law data from 1990–94 is almost exactly the same as what we saw for New York. There are no new models in this period of calm. The only models in use in the English market are two old models (one from the 1960s and one from the 1970s). One of the old models, Austria 1964 is essentially the same as the Belgian Congo 1958 model we saw in New York. That is, there is no collective action (unanimity is required to alter both payment and non-payment terms). This is a holdover model from the Pre World War II period, where it had nearly 100% of the market. The model that dominates in the 1990–94 period though, is Sweden 1977, which has a 96% market share. Sweden 1977 has a CAC, in that the payment terms can be modified with a vote that is less than unanimous (Min Mod Vote = 0.1875; Other Vote = 0.5; Mand Meet = 1).

**Table 6: English Models in Stage One**  
*Pre-Existing Models*

| Model Name   | Min Mod Vote | Other Vote | Disenfranchisement | Mandatory Meeting | Aggregation | Market Share |
|--------------|--------------|------------|--------------------|-------------------|-------------|--------------|
| Austria 1964 | 1            | 1          | 0                  | 0                 | 0           | 4%           |
| Sweden 1977  | 0.1875       | 0.5        | 0                  | 1                 | 0           | 96%          |

Note: 56 issuances

### B. Stage Two (Multi Shock Period)

Stage two (1995–2001), is when the three shocks hit the New York market (the Mexican crisis, the Asian financial crisis and the Argentine default). Table 7 reports the contract models employed in the English market in stage two. At first cut, what we see in stage two looks similar to what we saw in the New York market

during stage two. Recall that it was in stage two that we saw a number of marginal players innovating in the New York market, modifying their UACs into CACs. We see in stage two in the English market that even though there were CACs already, there is innovation. The innovation is however small, as compared to what was occurring in the New York market.

It is in the New York market where innovations led to the primary restructuring variable, the vote required to alter payment terms (Min Mod Vote), changed from 100% (a UAC clause) to something less (a CAC clause)—a major change. It is important to note that when the New York market switched from UACs to CACs, the dominant model that it moved to was not the dominant English model (Sweden 1977, where Min Mod Vote was 0.1875). Instead, New York moved to a higher Min Mod Vote vote (Mexico 2003 had Min Mod Vote = 0.75 compared with the English market (Sweden 1977 had Min Mod Vote = 0.1875). The New York market also moved to higher votes for non-payment terms (Mexico 2003 had 0.75 for Other Vote compared with Sweden 1977 that had 0.5 for Other Vote) and disenfranchisement was included. All of these were changes to the traditional English CAC model that advocates of CACs in New York had initially used as their basis for a New York CAC model (one New York issuer, Qatar, had in fact attempted to introduce the traditional English model).<sup>35</sup>

In contrast, the innovations in the English market are not as major as the innovations in the New York market during stage two. As Table 7 shows, the three new models that show up in stage two in the English market all are changes in voting thresholds in existing CAC clauses without the addition of entirely new clauses. Denmark 1997 raises the *Other Vote* to 0.75 (from 0.5) whereas Greece 1998 and Tunisia 1999 raise *Min Mod Vote* to 0.25 and 0.5 respectively (from 0.1875). Similar to the experience in the New York market in stage two none of these new English models gets very much adoption in stage two (the market share in each case is very small – 1% each). If participants in the market closest to the shocks (New York) do not adopt a new standard, we expect that participants in the more distant market (English) likewise will also not shift to a new standard. The bulk of the English market share still goes to the traditional Sweden 1977 model.

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<sup>35</sup> For a discussion of the reasons for the move away from the English model of CACs in New York, see Report of the G-10 Working Group on Contractual Clauses, Bank of International Settlements (2002), available at <http://www.bis.org/publ/gten08.htm>

**Table 7: English Models in Stage Two**  
*Pre-Existing Models*

| Model Name   | Min Mod Vote | Other Vote | Disenfranchisement | Mandatory Meeting | Aggregation | Market Share |
|--------------|--------------|------------|--------------------|-------------------|-------------|--------------|
| Sweden 1977  | 0.1875       | 0.5        | 0                  | 1                 | 0           | 91%          |
| Iceland 1981 | 0.1875       | 0.5        | 1                  | 1                 | 0           | 7%           |

Note: 119 issuances

***New Models***

| Model Name   | Min Mod Vote | Other Vote | Disenfranchisement | Mandatory Meeting | Aggregation | Market Share |
|--------------|--------------|------------|--------------------|-------------------|-------------|--------------|
| Denmark 1997 | 0.1875       | 0.75       | 0                  | 1                 | 0           | 1%           |
| Greece 1998  | 0.25         | 0.5        | 0                  | 1                 | 0           | 1%           |
| Tunisia 1999 | 0.5          | 0.5        | 1                  | 1                 | 0           | 1%           |

Note: 119 issuances

Unlike what we saw with the New York market stage two models, Table 8 shows that the English market stage two models do not all come from marginal players. Greece and Denmark, two of the innovators in stage two, are big issuers. As for their counsel, they have some high volume law firms representing them such as Allen & Overy and Freshfields. In other words, unlike with New York, we do not find that innovation in the English market is dominated by the smallest (fourth quartile) market participants in stage two. This is inconsistent with our prediction that the marginal players—those seeking to take chances to raise their market share—will drive innovations in stage two. One possible explanation for this difference with the New York market is that the English market already was using CACs as the standard. At least some large market participants that already employed CACs may have viewed minor innovations around the CAC as part of maintaining the standard (and addressing the concerns of issuers in the midst of the shocks and change in the New York market) without threatening their dominant position due to their expertise with the existing CAC standard.

**Table 8: Market Rank Associated with New Models in Stage Two**

| Issuer Name  | Issuer Quartile | Issuer Counsel Quartile | Investment Bank Counsel Quartile | Investment Bank Quartile |
|--------------|-----------------|-------------------------|----------------------------------|--------------------------|
| Denmark 1997 | 1               | n.a.                    | n.a.                             | 2                        |
| Greece 1998  | 1               | 1                       | 4                                | 1                        |
| Tunisia 1999 | n.a.            | 2                       | 1                                | 2                        |

Note: 119 issuances; n.a. = not available because information was not reported on the prospectus.

We move next to stage three. In the New York context, stage three was where it became clear that a new model was going to emerge. And the biggest players appeared to be competing over which of the models would emerge as the dominant one. Mexico 2003, emerged victorious, with a 55% share. No other model came close. What we see in the English-law data is different. Instead of a new model emerging as clearly dominant, we see a number of models competing across the 2002-2011 time period in our study. But, as with the New York market, we do see eventual convergence to a standard in the English market, albeit at a slower pace than in the New York market.

As Table 9 describes, five new models emerge in the 2002–11 period in the English market (Bahrain 2003, Morocco 2003, Hungary 2004, Finland 2004, and Ukraine 2007). The two 2003 models, Bahrain 2003 and Morocco 2003, are similar to the models that emerged in stage two, in that they both moving the voting threshold for existing CAC clauses, raising Min Mod Vote from 0.1875 (to 0.25 and 0.375) and raising Other Vote slightly (from 0.5 to 0.75 in the Bahrain case). One year later, Hungary 2004 and Finland 2004 are the more major innovations in the English context. Finland 2004 does not add new contract dimensions but does raise the voting threshold on payment terms (Min Mod Vote) well above 0.5 to 0.75, matching the voting threshold in the New York law new models (in particular the Turkey 2003 model). Hungary 2004 not only raises Min Mod Vote to 0.75, the model adopts a new clause—Disenfranchisement (similar to Mexico 2003).

In New York in stage three, readers will recall, Mexico 2003 quickly emerged dominant, with 55% of the market; Turkey 2003 was next with 17%. In the meantime, the previously dominant model in the New York market, Ireland 1967, dropped from an 86% market share to 17% from stage two to three. What we see in stage three in the England market is similar, albeit to a lesser degree. The Hungary 2004 model (the equivalent of the Mexico 2003 model) quickly emerges as a leading model, with the biggest market share of 30%. Finland 2004 (the equivalent of Turkey 2003, in New York) has a 9% share. Together, these New York style CAC models emerge in stage three to take almost 40% of the English market in stage three. Sweden 1977, by contrast shows a sharp decline and slips from its over 90% share in stages one and two, to a 13% share in stage three. Denmark 1998, which is a cross between the traditional English model and the new dominant New York model, also emerges with a 28% share.

Overall, we see that the old dominant model does get displaced in stage three, just as it did in New York. However, unlike with New York, where one new model was clearly dominant, there is no clear victor in the English market at least by

the end of 2011. We also see a feedback loop in operation. The New York CACs drew their inspiration from the English model, but sought to improve upon it. In turn, the English issuers drew from the improvements made to their model in New York and borrowed some of those in their models.

**Table 9: English Models in Stage Three**  
*Pre-Existing Models*

| Model Name   | Min Mod Vote | Other Vote | Disenfranchisement | Mandatory Meeting | Aggregation | Market Share |
|--------------|--------------|------------|--------------------|-------------------|-------------|--------------|
| Sweden 1977  | 0.1875       | 0.5        | 0                  | 1                 | 0           | 13%          |
| Iceland 1981 | 0.1875       | 0.5        | 1                  | 1                 | 0           | 4%           |
| Greece 1998  | 0.1875       | 0.5        | 0                  | 1                 | 0           | 2%           |
| Tunisia 1999 | 0.5          | 0.5        | 1                  | 1                 | 0           | 4%           |
| Denmark 1998 | 0.1875       | 0.75       | 1                  | 1                 | 0           | 28%          |

Note: 177 issuances

*New Models*

| Model Name   | Min Mod Vote | Other Vote | Disenfranchisement | Mandatory Meeting | Aggregation | Market Share |
|--------------|--------------|------------|--------------------|-------------------|-------------|--------------|
| Bahrain 2003 | 0.25         | 0.75       | 0                  | 1                 | 0           | 9%           |
| Morocco 2003 | 0.375        | 0.5        | 0                  | 1                 | 0           | 2%           |
| Hungary 2004 | 0.75         | 0.75       | 1                  | 0                 | 0           | 30%          |
| Finland 2004 | 0.75         | 0.75       | 0                  | 0                 | 0           | 9%           |
| Ukraine 2007 | 0.25         | 0.75       | 1                  | 1                 | 0           | 2%           |

Note: 177 issuances

In terms of the market position of the innovators, we see that stage three in the English market once again does not show the uniformity of the New York market where the new models of stage two came from marginal players and the new models of stage three came from dominant players. In the English market, both marginal and dominant players appear to be innovating in both stages two and three as Tables 8 and 10 suggest show actors from a range of quartiles producing new models. The market positions of the innovating parties, particularly the issuer counsel and investment bank counsel, do seem to increase toward the end of our stage-three time period. This may indicate that the expectation that the English market would move to a new standard arose later in the English law market compared with the New York market, consistent with the sovereign debt shocks affecting the English law market more distantly, at least initially, than the New York market.

**Table 10: Market Position of New Models in Stage Three**

| Issuer Name  | Issuer Quartile | Issuer Counsel Quartile | Investment Bank Counsel Quartile | Investment Bank Quartile |
|--------------|-----------------|-------------------------|----------------------------------|--------------------------|
| Bahrain 2003 | 4               | 4                       | 3                                | 2                        |
| Morocco 2003 | 4               | 3                       | 4                                | 1                        |
| Hungary 2004 | 2               | n.a.                    | 1                                | 2                        |
| Finland 2004 | 1               | n.a.                    | 1                                | 2                        |
| Ukraine 2007 | 4               | 2                       | 1                                | 1                        |

**D. Summary**

The evolutionary patterns in the English data show similarities to what we saw with New York, even though the shocks hit the English market in a dampened form. Most distinctly, we see the data on innovations fit a distinct three-stage pattern, with no innovation prior to the shocks (the period of calm), followed by a number of new models emerging in the wake of the shocks (the period of multiple shocks), and concluding with the displacement of the old dominant model and the emergence of new ones (the post shock period). What we do not see in the English data, however, are the distinct differences that we saw in stage two and three in New York between the identities of innovators in the two stages. In the New York market, marginal players innovated in stage two; large players competed to set the dominant design in stage three. In the English market, there is not such a clear division between stages two and three. Both marginal and large players innovate in those two periods of time and no clear dominant model has emerged, as of mid 2011, where our dataset ended. One explanation for this difference is that the English market felt the sovereign debt shocks in the 1990s and early 2000s only distantly, and thus the recognition that a new standard would take hold in the English market occurred much later than in the New York market.

As of this writing, in June 2012 though, the equivalent of 2002 in the New York market appears to be taking place in the English-law market. The Eurozone sovereign debt crisis hit the European markets hard in 2011. Greece restructured in March 2012, in the largest sovereign bond restructuring ever done. And the Eurozone’s Bonds and Bills Committee has issued a set of proposed new CACs for Eurozone sovereigns. These new Euro CACs, because they contain Aggregation provisions, are likely to be more effective than the ones enshrined in the Mexico 2003 model that became the market standard in New York. The existing models in the English market, such as Hungary 2004 and Denmark 1997, we suspect, will wane in the wake of this new Euro CAC model that the big Eurozone nations are



pushing.<sup>36</sup> We expect to see a transition a new dominant design show up starting in 2013 in the English market much like Mexico 2003 became dominant in the New York market.

## **VI. Conclusion**

In the business context, contracting parties generally do not draft contracts in a vacuum, arising newly formed for any particular deal. Instead, contracting parties rely heavily on boilerplate terms. The use of boilerplate is well known. And boilerplate can change if the benefits from using a new standard outweigh the costs (from network externalities, legal uncertainty and other sources). What is less understood is the process through which one boilerplate standard gives way to a new standard. If the benefits of using a new standard outweigh the costs of sticking with a boilerplate do we observe instantaneous shifts to new standards?

Our contribution is to demonstrate that new contract innovations in at least one important contracting context—the sovereign bond market—occur through a S pattern similar to what is found in product innovation. Prior to any shock, existing standards are sticky and innovation sparse (stage one of our model). External forces can precipitate a change in the standard, such as the shocks in the sovereign bond market we observe during the time period of our study. Rather than result in an immediate shift to a new standard, these shocks initially lead to a period of experimentation on the part of more marginal players (stage two of our model). Top players have a vested interest in supporting the existing standard through which they maintain their competitive dominance. Stage two represents the initial low positive slope portion of the S pattern for the introduction of a new standard.

Stage two continues until market participants come to the conclusion that a shift in the standard will occur (the X tipping point in our analysis). In the sovereign debt context, we conjecture that prior learning from contract innovation in stage two, the cumulative impact of shocks, and public sector pressure led to the tipping point when top market participants abandoned the old standard and began competition over the new standard. In other contexts, other combination of factors including pressure from the public sector (e.g., the IMF) and approval from key industry groups are likely critical in reaching such a tipping point for a contract term standard.

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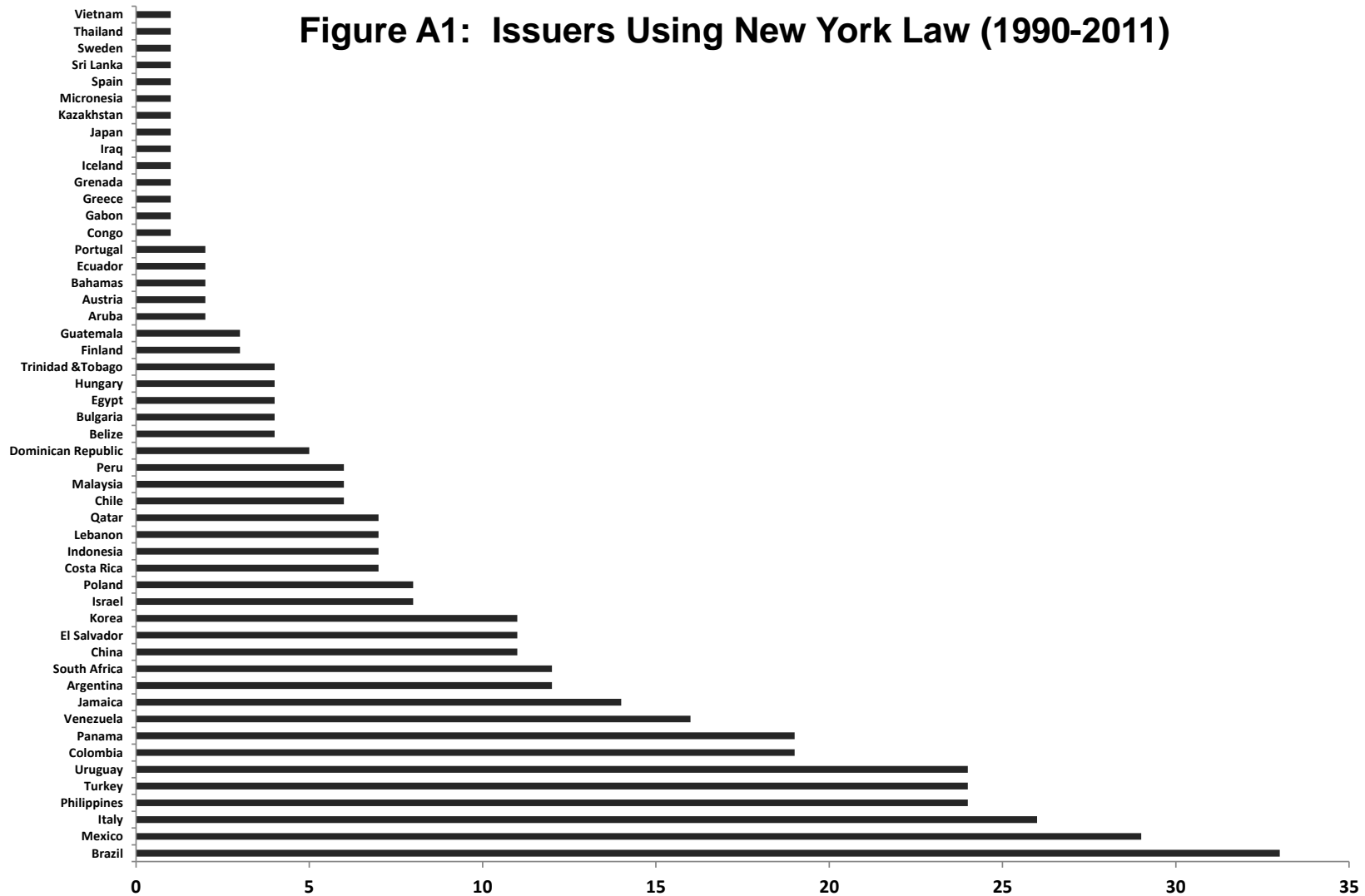
<sup>36</sup> For details on the new Euro CACs, see Bradley & Gulati, *supra* note 5.

Once market participants expect a shift in the standard, we enter stage three of our model. In stage three, top market participants switch from defenders of the existing status quo to promoters of their own individual visions of the coming new standard. Competing visions can then lead to multiple new standards in stage three with one competitor gaining market share to become the new standard (as is the case for the Mexico 2003 standard). The rapid gain in market share represents the high positive slope portion of the S pattern. There is a corresponding drop in the market share of the old standard (in our case the Ireland 1967 standard). Where the market share of the new standard and old standards cross, or the X point, we conjecture that the incentive to compete for a new standard is at a maximum. It is at this cross point in our dataset that we observe not only the Mexico 2003 but also the Brazil 2003, Uruguay 2003, and Turkey 2003 models introduced.

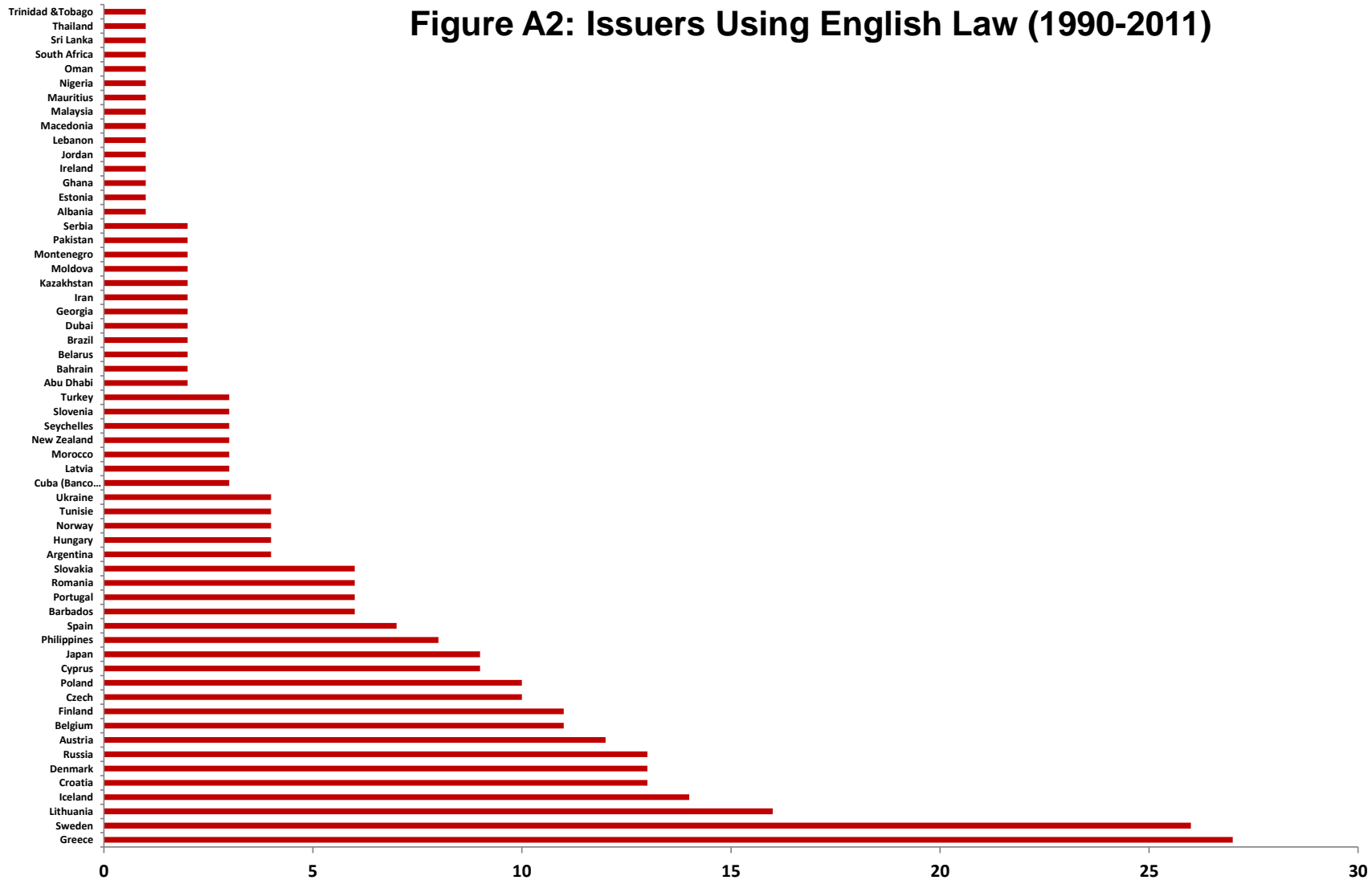
We also observe that standards may vary across differing market segments. The English-law governed sovereign bonds historically had very different collective action terms compared with the New York-law governed bonds. When standards differ by market segments, innovations in one market, the New York-law market, can have an effect (although indirect), on innovations in another market, the English-law market. This effect nonetheless is muted. The shocks and resulting contract innovations in the New York-law market did spur innovation and experimentation in the English-law market. But opinion leaders in the English-law market did not call for a shift to a new CAC standard during the time period of our study. Looking forward, we expect that the recent Greece sovereign debt shock and the numerous public sector calls for reform will lead the English-law market and its top market participants to compete more vigorously to generate a new English-law CAC standard.

Appendix: Market Shares (by Number of Deals) of the Various Participants in Sovereign Bond Issuances

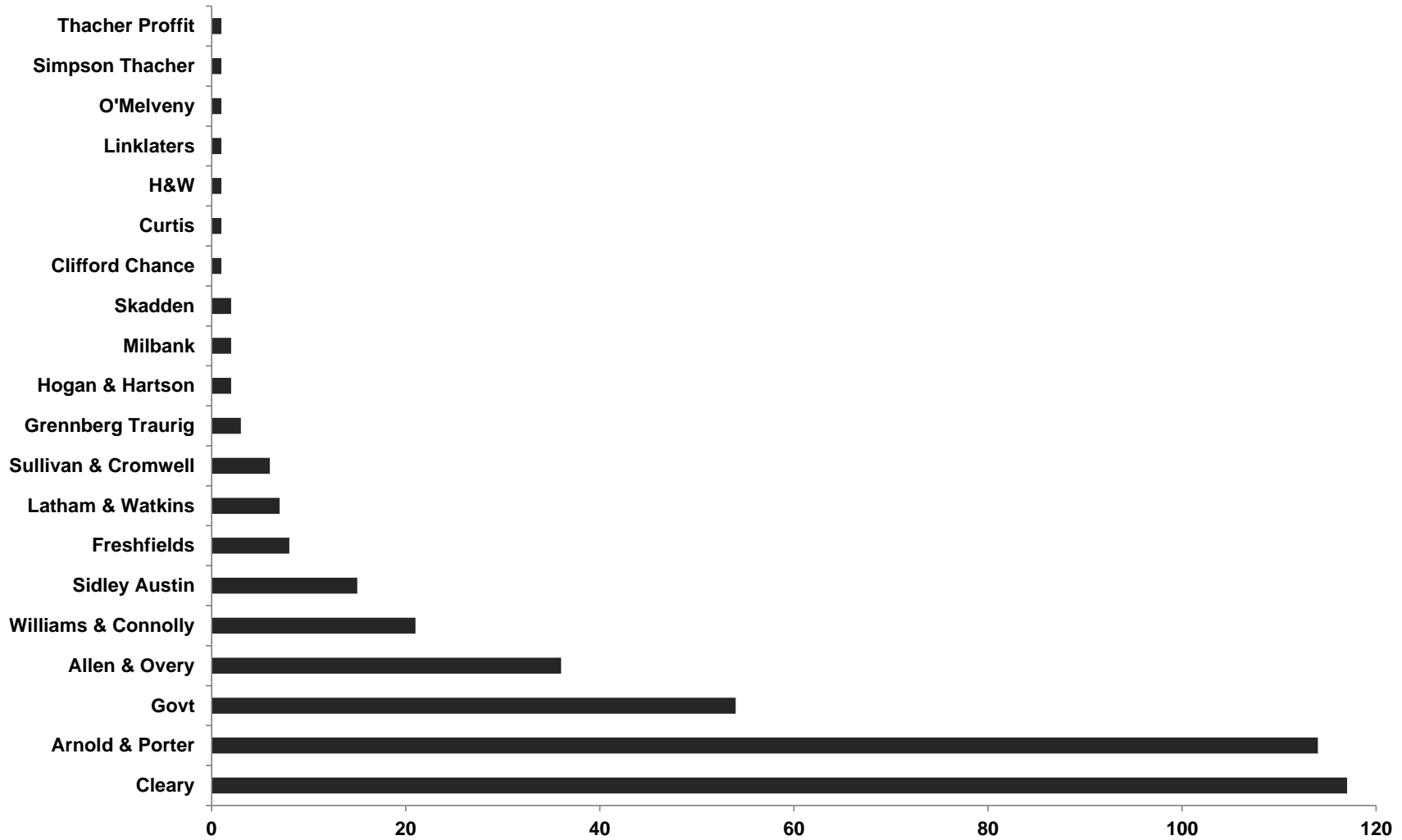
Figure A1: Issuers Using New York Law (1990-2011)



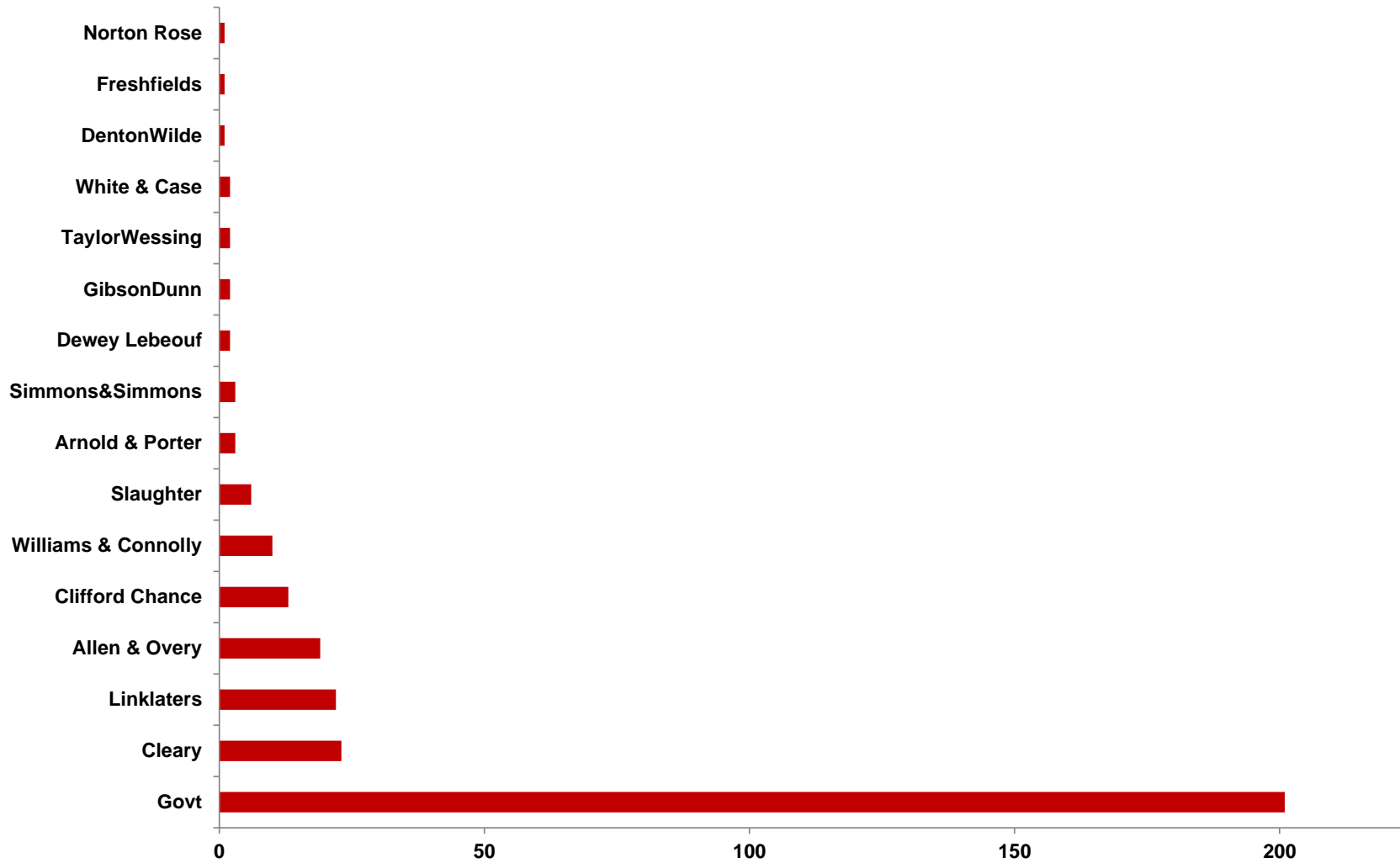
**Figure A2: Issuers Using English Law (1990-2011)**



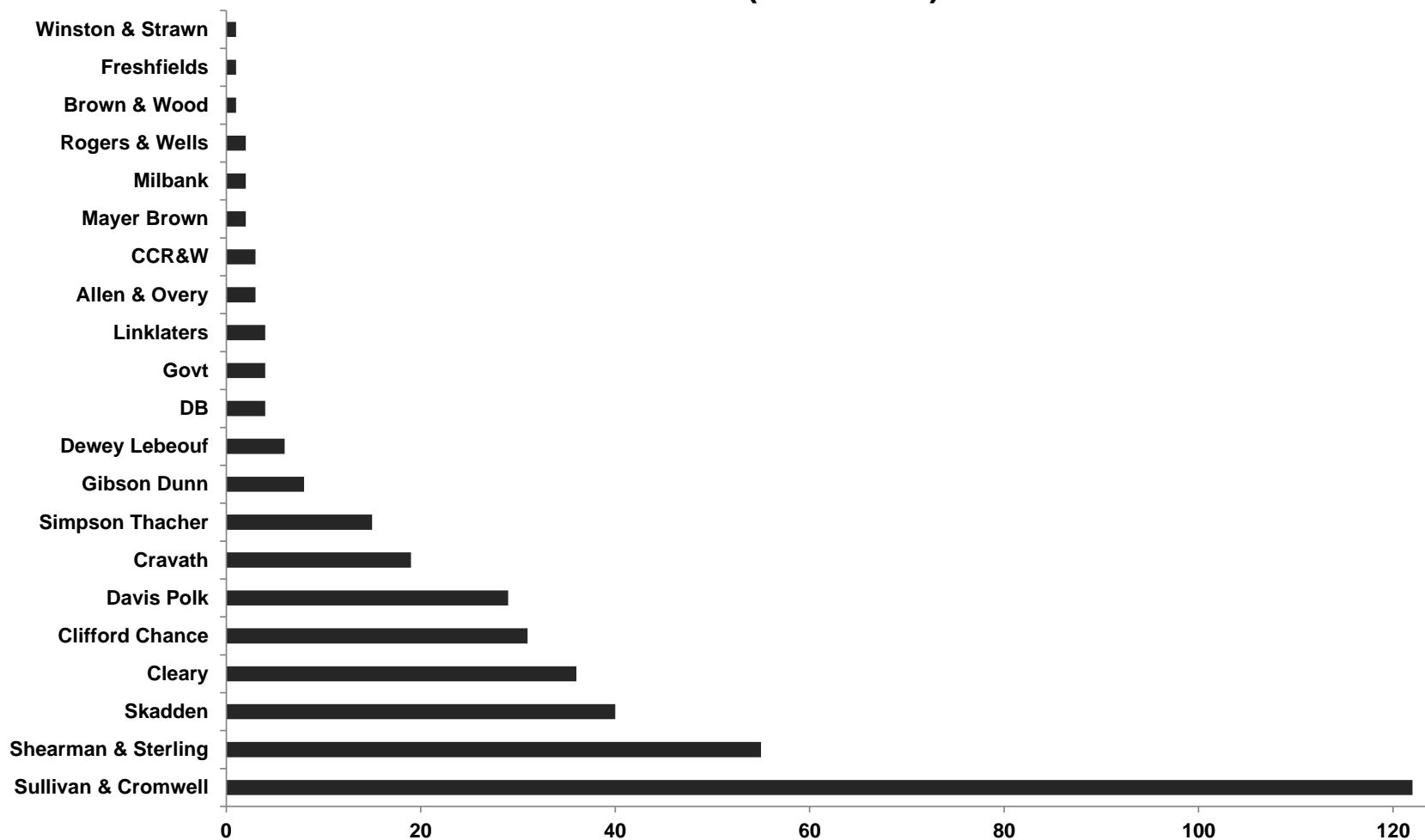
**Figure A3: Issuer's Counsel For New York-Law Bonds (1990-2011)**



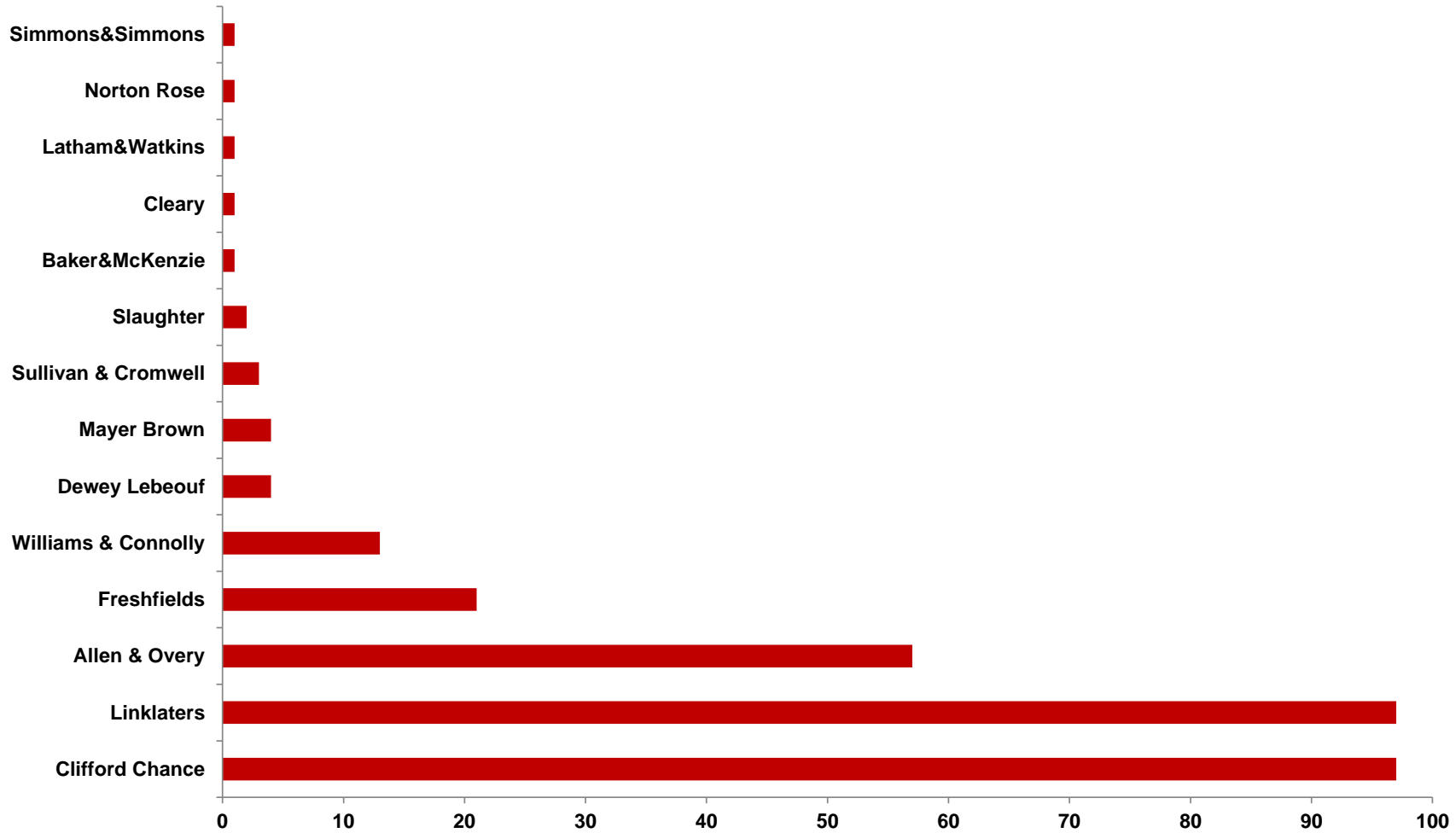
**Figure A4: Issuer's Counsel for English-Law Bonds (1990-2011)**



**Figure A5: Underwriter's Counsel For New York-Law Bonds  
(1990-2011)**



**Figure A6: Underwriter's Counsel for English-Law Bonds (1990-2011)**





Readers with comments should address them to:

Professor Eric A. Posner  
University of Chicago Law School  
1111 East 60th Street  
Chicago, IL 60637  
[Eric\\_Posner@law.uchicago.edu](mailto:Eric_Posner@law.uchicago.edu)

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