International Organization as a Seal of Approval: European Union Accession and Investor Risk

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Much of the literature on international institutions argues that membership regularizes expectations about members' future behavior. Using the accession of the postcommunist countries as a test case, this article argues that the EU can send strong signals to financial markets about the trajectory of a particular country. Examining spreads on sovereign debt from 1990 to 2006, this article shows that closing negotiation chapters on domestic economic policy—in other words, receiving a seal of approval from Brussels that previously existing policy reform is acceptable to the wider EU—substantially decreases perceptions of default risk in those countries. That decrease operates independently from policy reform that the country has taken and is also distinct from selection processes (modeled here with new variables, including UNESCO World Heritage sites and domestic movie production, that proxy for cultural factors). Thus, this particular international organization has played an important role in coordinating market sentiment on members, conferring confidence that policy reform alone could not accomplish.

In December 2004, the European Union set 17 March 2005 as the date to start accession talks with Croatia. Champagne flowed, politicians rejoiced, and Croatia was instantly touted as a model reformer that other postcommunist countries should emulate. Earlier that year, EU Enlargement Commissioner Günther Verheugen had claimed that "the economic position of Croatia . . . is better than the majority of countries which will enter the European Union on 1 May [2004]."[1] Enthusiastic market analysis chalked up Croatia's decrease in sovereign risk specifically to EU talks.[2]

But on 16 March 2005, the day before talks were scheduled to begin, the EU announced that accession would be suspended indefinitely, until Croatia surrendered Ante Gotovina, who was charged with war crimes against Serbs in the Balkan wars of the mid-1990s, to the International Criminal Tribunal for former Yugoslavia in The Hague. "Croatia is already living Europe, if you mean by that a set of democratic standards, a functioning democracy and free market . . . [and] rule of law," Croatian Prime Minister Ivo Šanader fumed. But financial markets saw it differently. Spreads on 10-year Croatian Eurobonds jumped by eight basis points by the next day and continued to climb over the next weeks, reaching increases of 23 basis points. In fact, Croatian Eurobonds only returned to their previous levels after the EU announced the reopening of negotiations in October 2005. Croatia's economy was in the exact same position as it had been the day before, but markets responded strongly to this exogenous event—membership in an international institution.

For researchers interested in measuring the effects of membership in international institutions, this may seem an obvious case. Markets would no doubt respond to the

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[1] "EU or Bust," *Transitions Online,* 26 April 2004.

[2] For example, the Economist Intelligence Unit Country Risk Service noted "falling yields in the wake of the EU's surprise decision to open membership negotiations with Croatia" (Croatia at a Glance, December 2004). "Croatia's spread will narrow and will get closer and closer to the spreads of the Romanian and Bulgarian bonds," Marina Purgarić, an analyst with the brokerage FIMA, told SeeNews on 15 September 2004. The pace of the narrowing would depend on Croatia's progress in integrating with the EU, she added.

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prospect of a recently war-torn country joining the politically as well as economically stable European Union. But the crucial issue that remains is to determine the precise mechanism behind this effect. That is, to what exactly are markets reacting? Some might argue that markets like the policy reform that countries must undertake to enter the EU, but such reforms are usually taken well in advance of EU negotiations. We might also expect that markets like the regulatory framework of the EU. But despite the stringent requirements for entry, the EU's policy enforcement record is weak once countries become members. France and Greece have both been in breach of the Stability and Growth Pact's budget limits since the early 2000s, and in 2008 Hungary exceeded the EU's budget caps four times over—all without official penalty from the EU. Furthermore, EU governments are not always stable or market-friendly: voters in both Poland and Slovakia in 2006 put leaders in power with extremist, populist credentials, and the Czech Republic was officially without a government for several months. Yet investor confidence has not been substantially shaken by those events; those countries' sovereign debt yields remain relatively stable.

So how does being credibly on the road to joining the EU confer such an enviable dose of confidence? This article argues that the drop in investor risk is not primarily attributable to policy reform that countries undertake prior to EU accession. Nor do a country's intrinsic qualities drive them both to have lower bond yields as well as to be considered for EU accession (a so-called "selection effect"). Instead, the reduction in risk occurs most palpably during the negotiation stage, when Brussels sends clear signs that a candidate's preexisting policy reform in various issue areas is on par with EU standards.[3] The EU "seal of approval" serves as a piece of reliable, public information in a decision-theoretic problem. When a country's reform endeavors get the seal of approval from the EU, it can mean big drops in risk, such that countries essentially go from being treated as emerging markets to stable OECD countries, even if their previous levels of development remain more or less unchanged. Thus, the things that countries have to do to join the EU matter less than the signal from the institution. The perceived quality and shared nature of this information allow investors to make more informed choices.

That guaranteed EU entry makes countries look less risky is perhaps not surprising. Researchers have already demonstrated convergence of various economic indicators for EU entrants (Brada and Kutan 2001; Cappelen et al. 2003). The contribution here is in showing that the impact comes when Brussels sends public signals that policy reform in accession countries meets EU standards—even if that reform had already taken place well in advance. Once the EU endorses a country's policies, market expectations for that country's performance converge. Interestingly, this suggests that markets pay less attention to the actual path of reform than to the EU pronouncements on it. This has implications not only for the literature on institutional design but also for our understanding of how institutions can confer expectations of regularized behavior.

This article proceeds as follows. After establishing empirically that EU integration is associated with drops in risk for the postcommunist countries, the subsequent sections take on the possible mechanisms underlying this effect. The problem of selection is addressed by using previously overlooked instrumental variables to model first the probability that a country will be asked to open negotiations with the EU. The number of UNESCO World Heritage sites, the level of domestic-language movie production, its distance from the West, and civil liberties proxy for a nation's proclivity to join the EU. Additionally, controlling for policy reform does not detract substantially from the previously observed drops in risk associated with EU negotiations. Instead, markets react primarily to a "seal of approval" from the EU, when it becomes public that the EU has validated a country's reform efforts. Investors take countries' policy reforms seriously once they are endorsed by the EU. Controlling for the percentage of economic chapters of the *acquis communautaire* of which the EU has approved swamps the previous effects of advancing through stages of EU negotiation. This indicates that policy endorsement from the EU allows investors' expectations to converge. The final section concludes.

Investor Risk and EU Membership

One of the many claims about the merits of international institutions is that they can reduce uncertainty (Axelrod 1981; Keohane 1984; Koremenos, Lipson, and Snidal 2001; Morrow 1994; North 1990). Institutions, it has been argued, can create regularized expectations of members' future behavior and therefore promote more stable patterns of behavior among members. This argument has been the bedrock of liberal institutionalism. But this proposition has been infrequently tested, in part because there are few widespread empirical measures of uncertainty in political science. Even separate from the question of whether behavior actually

[3]The game-theoretic frameworks within which signaling arguments usually appear are not appropriate here, since there is no bargaining between investors and the other actors (the EU or applicant countries).

converges, how might we know if *expectations* of government behavior converge once they join international institutions?

In finance, however, calculating risk associated with governments is common. Sovereign debt—the measure employed in this article—is increasingly in use in political science as a means of measuring third-party expectations.[4] Unlike other forms of investment, such as foreign direct investment in plants and long-term projects, bondholders have little interest in the promotion of any one good or in the factor endowments per se of any country. Bondholders seek profit, and they profit from trading other countries' debt by seeking relatively high rates of return in environments with varying degrees of risk. As such, the yields and spreads on bonds do not directly reflect any features of a country: they reflect perceptions of that economy, both in terms of other investors' assessments as well as in future returns on investment. Thus, they are themselves a measure of collective uncertainty about the ability of a country's government to uphold its obligations in servicing its debt. Sovereign yields are therefore an obvious theoretical choice in testing the claims about expectations of future behavior found in the literature on international institutions, which claims that institutions should regularize behavior and encourage cooperation.

Debt instruments' levels change according to the issuer of that particular instrument, the risk of the currency in which the bond is issued, and—most crucially for the purpose of this project—the risk associated with lending to the country itself. Higher yields on sovereign bonds indicate a higher perceived likelihood that a government will default on its debt. Spreads on sovereign debt—that is, the difference between the yield of a country's bond and that of a treasury note of comparable maturity—are essentially a function of their perceived default risk as well as the liquidity of the trading instrument. Though spreads and yields do not perfectly capture levels of risk on the ground in countries, they do reflect the perceptions of investors, which has an important feedback mechanism to countries' access to financing.

It is commonplace in the finance literature to assume that markets respond to news about the future.[5] But particularly in non-OECD countries, where information is relatively scarce and can be unreliable, international debt markets are sensitive to actions or events that are easily and uniformly interpreted. Membership in international institutions—a visible and public act—is such an event. Indeed, Bordo and Rockoff (1996) argue that at the turn of the nineteenth century, signing onto the gold standard operated as a "seal of approval" for peripheral countries, and that "markets attached nearly as much weight to close shadowing of the gold standard as actual adherence"—implying, then, that the record of policy change mattered less to investors than nominal membership. Similarly, Sussman and Yafeh (2000) note that the only two events that improved Japan's country risk were adopting the gold standard in October 1897 and Japan's victory against Russia in 1905—both easily interpretable international acts.

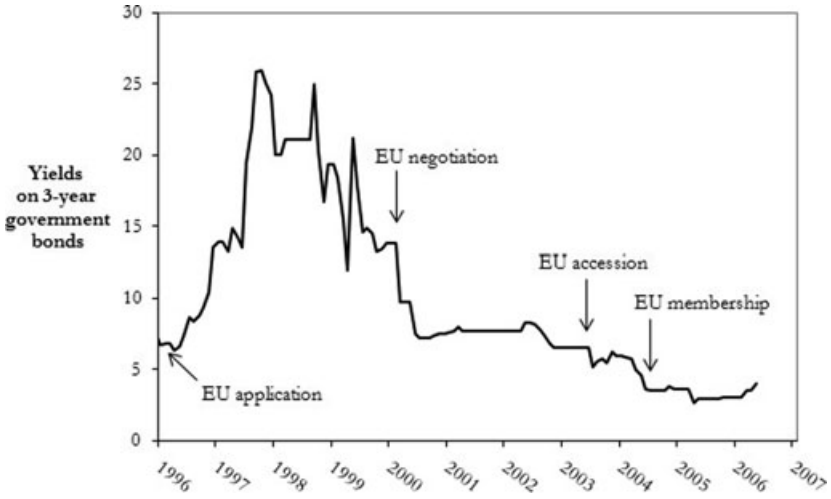
The postcommunist countries are a particularly good test case for examining the engines behind the impact of EU negotiations. First, though all of them had varying levels of wealth and economic conditions, they emerged from the command economies with a need to undertake similar policy reforms at around the same time (Švejnar 2002). Secondly, the time at which many of them were applying to the EU coincided with a consolidation of opinion in Brussels of the need to exercise stronger conditionality on accessor countries—indeed, this decision was spurred in large part by the number of politically diverse and poorer countries lining up for EU admission (Vachudová 2001). EU accession in the late 1990s meant something very different than in previous rounds. Brussels very vocally applied *ex ante* conditionality to the accessor states, with constant public pronouncements about candidates' readiness to join at different times. Additionally, the requirements for entry became more stringent, with the number of *acquis communautaire* chapters increasing from 31 to 35. Thus, unlike the previous rounds of expansion that included the Mediterranean and Scandinavian countries, all the candidate countries in the late 1990s were subject to a negotiation regime where policy reforms were expected to meet stringent criteria.

For most of the accession countries, the impact was immediate in at least one respect: investor risk premiums and yields on government bonds dropped almost as soon as Brussels announced their official candidacy. For example, from the time that Croatia signed the EU's Stabilization and Association Agreement in October 2001, to the time that it officially opened negotiations in October 2005, spreads on its Eurobonds against German notes dropped from 170 to 28 basis points. Central Bank officials credit the drop solely to credible entry into the EU; one claims that "yields were very much elastic toward positive signals from Brussels. . . . Croatian bonds

[4]See Jensen and Schmith (2005), Stasavage (2007), and Tomz (2007).

[5]See Jaimovich and Rebelo (2005) on how news about future total factor productivity spurs recessions, Bussie and Mulder (2000) on how elections impact investment flows, and Beaudry and Portier (2006) on stock market sensitivity to news.

FIGURE 1 Slovak Bond Yields and EU Accession



were almost junk bonds until the EU started taking us seriously."[6]

To illustrate this point more vividly, take the case of Slovakia. Since the dissolution of Czechoslovakia in 1992, the country was ruled by the autocratic Vladimir Mečiar, notorious for his ill treatment of minorities and lack of respect for media freedom. A proreform coalition ousted Mečiar in September 1998. In December 1999, the EU announced that it would include Slovakia among the countries it was considering for potential membership. Negotiations formally opened in February 2000, almost a year and a half after the change of power had taken place.

Figure 1 illustrates the change in spreads of sovereign debt for Slovakia during that time period. Note that the pattern described above, where risk drops in accordance with progress along the road to EU membership, is visible even in this single series. For Slovakia, the biggest drop seems to have occurred between the stages of negotiation—when the EU formally opens discussion on chapters of the *acquis*—and accession, when countries ratify EU treaties into their own domestic law. The sections below will explore this pattern in more depth.

But theories of the effects of international institutions offer competing explanations as to the mechanism behind the cause of such an outcome. One possibility is that states sign onto organizations to whose rules they would adhere regardless (Downs, Rocke, and Barsoom 1996; von Stein 2005; Vreeland 2003). Though this issue has long been discussed in economics (Heckman 1976), empirical work in political science has only recently begun to focus explicitly on the bias caused by selection.[7] In the case this article addresses, the problem originates when the same observable or unobservable factors that drive countries to be asked to open EU negotiations also influence countries to look less risky to investors. Thus, a researcher would falsely attribute the effect of one variable to an omitted variable or groups of variables that are driving both that independent as well as the dependent variable. If this were true, we would expect that modeling the selection process would cause any previously observed significance on the EU variables to disappear, once their effect was correctly attributed to selection.

We can put forward a hypothesis for this mechanism as follows:

H_1 *(Selection)*: The same countries that are likely to start the EU membership process are also the same countries that are likely to have low sovereign yields.

An alternative possibility deals with the observable changes that states undertake prior to or alongside the prospect of EU accession. Particularly in the run-up to EU accession, many countries underwent stringent periods of policy reform in order to be considered as candidates (Schimmelfennig and Sedelmeier 2005; Vachudová 2001).[8] The process of accession has often

[6]Interviews, Ivan Hulják and Lidija Popović, both of the Croatian National Bank, July 5 and 6, 2006.

[7]See von Stein (2005) on how, once controlling for selection, signatories to IMF agreements look no more likely to comply with the provisions than before, and Vreeland (2003) on how modeling the preexisting factors that make countries more likely to receive international aid attenuates the previously observed effects of lending.

[8]For a similar argument about monetary union, see Cote and Graham (2004), who argue that yields are elastic toward the policy reform surrounding euro adoption, and not the currency itself.

entailed extensive policy reform, as countries must comply with the rules and regulations set out in the *acquis communautaire,* which clocks in at some 80,000 pages. Lower levels of risk that we might observe around the time of EU negotiations might be just a function of that preexisting reform.[9] If this were the case, controlling for policy reform would obviate any presumed effects of EU entry.

H_2 *(Policy reform)*: Markets react to changes in economic policy undertaken outside EU negotiations.

A third possibility is that even though countries may enact reforms well in advance of EU negotiation, markets are responsive to public signals from the EU that its potential members meet EU standards. Much of the classical work on realism, as well as studies on signaling in diplomacy (Fearon 1994; Schultz 2001), argues that states act in a way to convey information about their "type" to international audiences and thus increase their credibility in diplomacy. The importance of prior beliefs in a world of incomplete information is also widely used in economics, particularly with respect to economic policies, such as central-bank independence and pegged exchange rates, where publicizing a commitment to fiscal discipline is an important psychological component of that policy's effectiveness (Lohmann 1992; Posen 1995). Similarly, an international institution's endorsement of candidates could also regularize expectations of new members in the eyes of financial markets.[10] In an environment of nonstrategic information aggregation, international institutions can provide public information that unifies investors' expectations.

The idea that international agreements can act as signals is not novel (Fang 2009; Martin 2005).[11] Here, the expected impact is a function not of the *cost* of the signal—accepting new members is indeed costly for the EU, but markets should take that cost into account earlier on in the process—but rather in the power of the public EU voice in signing off on candidate countries' policies, which competes with private information that individual investors have. Even though the policy reform was in many cases undertaken in advance of the negotiation process, and markets had access to all that information, a credible third party endorsing those reforms offers a clear, public piece of information.[12] The uncertainty here is not strategic; it is environmental, due to noise and differing individual perceptions. The closure of negotiating chapters in the EU serves as a credible and public piece of knowledge that facilitates information processing by individual economic agents.

The EU's most explicit pronouncement on the state of a country's economy comes during the negotiation of chapters of the *acquis communautaire.* After a "screening" period in which the Commission explains the details *acquis* to a candidate, the relevant country's ministers or deputies explain their degree of preparedness in the chapter in question. The process of negotiation to close chapters centers on the harmonization of domestic legislation with the EU's body of law. After the EU and the candidate country have agreed on the terms of the individual chapter of the negotiations, that chapter is considered closed. The process can take anywhere from a few months to two years, as the Commission allows better-prepared countries to move more quickly through some chapters than others. Glenn (2004) argues that despite divergent levels of preparedness and varying speeds of negotiations, negotiations on the adoption of the *acquis* have been "unexpectedly uniform."

The *acquis* is ostensibly a technical, rather than a political, process; it is carried out by experts in the Commission, whose mandate is enlargement, and any political foot dragging has usually originated from member states, not from the Commission.[13] Since the opening of chapters can be sequenced, any politicking has often been

[9] A related but distinct strain of literature suggests that policy reform in the context of an international organization may be particularly important for developing countries, which need a third party to push through important reforms (Mansfield and Pevehouse 2006; Putnam 1988). Others have argued that an international institution can help consolidate policy reform, either because of the costly commitment involved in joining the institution or because a government can use the institution as a scapegoat and thereby assuage domestic opposition to reform (Pevehouse 2002). This has more to do with the effectiveness and durability of reforms on the ground, and those reforms' credibility to *domestic* audiences, not international audiences such as bond traders.

[10] It is beyond the scope of this article to explore whether those perceptions are justified. A rich debate exists in the finance literature on whether bubbles can in fact be rational; some theorize that even though stocks or assets may be overvalued, it may still be rational for investors to follow market sentiment, since bubbles can have self-fulfilling effects (Diba and Grossman 1988; Froot and Obstfeld 1991; Lei, Noussair, and Plott 2001; Santos and Woodford 1997).

[11] Rodrik (1989) pointed out that in developing countries, where information is often poor, governments may have to rely on signals that communicate their intentions.

[12] See Eichengreen and Mody (1998) on how emerging-market spreads are more a function of market sentiment than of fundamentals.

[13] Although some have argued that the EU chapters are too general to be suitable for objective assessment (Grabbe 2002), little quantitative work has fully analyzed this proposition. An exception is Hille and Knill (2006), who find that bureaucratic efficiency on the part of candidate countries is a better predictor of advancement in the *acquis* than politics (veto points). Admittedly, the suspension of Turkey's negotiations in 2007 was certainly a political decision, reflecting widespread anxiety amid EU public opinion about the pace of enlargement. But for the postcommunist countries, where political will for enlargement was stronger, the chapter negotiations are generally believed to be more technocratic.

reserved for the opening of chapters that are politically difficult, and economic chapters have tended not to fall in this category. Existing empirical research shows that levels of democracy and the extent of market reforms together determine whether a country will apply for EU accession, while the EU's decision to accept those countries comes after the EU observes the reform process in applicant countries imposed by the *acquis* conditionality (Mattli and Plümper 2002; Plümper, Schneider, and Troeger 2005). Note that here, too, this argument acknowledges the extent of reform undertaken *prior* to the country's opening of negotiation. Even though countries undertake significant amounts of policy reform in the run-up to formal EU negotiations, the EU's acceptance of those reforms as being worthy of a member state is a far clearer signal for investors.

Unlike in the selection hypothesis, where the EU "picks winners" (meaning that the same attributes drive a country both to make strides in EU accession and simultaneously to have lower risk levels), here the announcements from Brussels act as judgments that investors can interpret in the same way. In order for EU accession to give a viable signal, it must contain some elements that are not just signals but constitute a shared perspective by all. That is, there must be some commonality of interpretation of the significance of the closing of chapters. For this group of countries, closing of *acquis* chapters brought them irreversibly closer to EU membership. As the chapters of the *acquis* are clearly spelled out, and their closure is widely documented, we can anticipate that market reaction to an EU "seal of approval" would be more widespread than the assessments that individual investors might make of previously observed policy reform. Even if investors have private information about that reform, the EU's public signal allows divergent expectations and interpretations to converge.

Thus, we might expect that when the EU formally signs off on candidates' standing in various economic chapters of the *acquis* during the negotiation stage, estimates of risk drop in a way that overwhelms previously observed effects.

H_3 (Seal of approval): Markets react to signals from Brussels that accession countries have conformed to EU standards.

Thus, even in an environment where bond traders have equal access to a wide variety of information—including preexisting policy reform and earlier progress in negotiations with the EU—the closure of negotiating chapters in the EU serves as a credible and public piece of information that facilitates information processing by individual economic agents. The uncertainty here is not strategic; it is environmental, due to noise and differing individual perceptions. Rational actors who have equal access to the same set of private, noisy information could still reach different conclusions. But because of its relative clarity and the public nature of its announcements, the EU seal of approval coordinates those expectations.

Whether the drop in risk is warranted is a separate point. Membership in the EU does entail access to a rich common market, structural funds, and, for those who adopt the euro as their currency, exchange-rate harmonization, which eliminates currency risk across borders, could doubtless offer stability for members. Membership also provides a framework of regulation through which contracts can be enforced.[14] But some have noted that the spreads between German bonds and those of poorer countries in the unions seem unnaturally low and do not reflect the actual differences in risk between the markets (Codogno, Favero, and Missale 2003; Dullmann and Windfuhr 2000; Orlowski and Lommatzsch 2005).[15] Of related interest, then, would be a separate empirical investigation of whether the EU seal of approval could be self-fulfilling. In economics, the literature on self-reinforcing behavior is well documented theoretically, though empirical tests are less common.[16]

The next section sets up empirical tests of these hypotheses, using data on sovereign spreads in Europe, as well as several different models appropriate to each hypothesis.

Data Analysis

This section tests the hypotheses laid out above with the countries that are acceding to the European Union. To this end, the analysis uses quarterly data from the first

[14]Finance publications mention this phenomenon by name; a January 2003 Deutsche Bank emerging markets bulletin on Croatia notes that "EU membership will provide a greater degree of legal certainty for both investors at large and corporate direct investment. Therefore, the degree of country risk has decreased."

[15]Those hypotheses only address drops in risk associated with the run-up to EU entry. Once countries are full members, and euro adoption becomes an issue, different mechanisms may be at play beyond the reduction of risk. For example, another possible hypothesis is that markets anticipate a bailout if countries sign onto the EU, but this is more likely a concern for countries that have adopted the euro. Additionally, Article 104b of the Maastricht treaty specifically prohibits bailouts, although in early 2009 the EU has contributed to each of the recent multibillion-euro rescue packages to EU and non-EU member states in Eastern Europe.

[16]For formal models, see Corcos et al. (2002) and Vaugirard (2005); for empirical testing through experiments, see Tucker, Matsumura, and Subramanyam (2003).

quarter of 1990 to the fourth quarter of 2006 from 17 of the postcommunist countries to establish the magnitude of the effect of EU accession, and yearly data to test the mechanisms, based on the granularity of the available controls. Not all countries issued their debt on international markets in the time period studied, which necessitated a limit to the countries included.[17] For subsequent analyses, because many of the control variables were not available on a quarterly basis, the analyses use annual data from the same time period, even though a finer degree of granularity would be desirable.

The dependent variable is *logged spreads on three-year sovereign debt*, differentiated against German sovereigns of the same maturity. Benchmarking one asset's yields against those of a more stable one is a common technique to isolate the level of additional risk a less-stable asset carries. Using spreads takes into account not only overall market fluctuations and euro-dollar exchange rate risk, but also Europe-level shocks, such as the ERM crisis of the early 1990s and the Russian rouble crisis of 1998, both of which impacted German yields. The variable is logged to better approximate a normal distribution, for the purposes of linear estimation.

What basic control variables are necessary to explain variation in perceptions of risk over time? The most exhaustive studies on the determinants of sovereign bond spreads come from the literature on finance.[18] Those studies are targeted primarily toward investors and are concerned with finding the specification with maximum explanatory power, not necessarily with parsimonious or theoretically based models. Thus, most include no fewer than 30 explanatory variables, many of which are highly collinear, including total debt as a ratio of gross domestic product, real exchange-rate misalignment, fiscal balance, the current and capital account balances, exports as a ratio of total GDP, a country's default history, and its external amortization. For simplicity of the model, the specifications include only those variables that are most common in specifications of sovereign debt, starting with inflation rates, which signify a structural inability of a government to generate revenue by any other means than running the printing presses, and debt service payments as a proportion of overall GDP. Controlling for *inflation,* or changes in consumer prices, takes into account not only the fundamental stability of the economy but also the government's ability to effectively leverage monetary policy. As such, drastic changes in consumer prices indicate uncertainty not only in an economys' present but also in its medium-term future, since policy measures such as currency revaluation may be necessary to keep inflation under control. Additionally, high amounts of hard-currency *reserves* mean that a country will be able to service its foreign-currency-denominated debt. Total *portfolio liabilities* indicate a country's past loan activity and the depth of its lending market. A higher level of exports in a country's *current-account balance* indicates that a country is receiving hard currency for its goods, which increases liquidity in that market.[19]

The estimation also includes variables for the stage at which countries are invited to apply for EU membership (*EU apply*); the official opening of negotiations, during which chapters of the *acquis communautaire* are closed (*EU negotiate*); the accession stage, at which countries ratify EU legislation into their own domestic legal systems (*EU accession*), and full membership (*EU membership*). The EU variables are coded 1 for each country and quarter when a particular stage is instigated, and for years thereafter, such that coefficients on each variable represent the added effect of each new stage of membership, given advancement from a previous stage.

Pooled time-series datasets such as this one pose immense challenges for researchers, as such data violate the Gauss-Markov assumptions for linear estimation. The presence of relationships within countries and in particular time periods means that there will be serial correlation among observations, as well as structure in the error terms. Though there are many fixes, no one method will work for all types of data (Beck and Katz 1995; Wilson and Butler 2004). To correct for serial correlation while avoiding the downward bias caused by including lagged dependent variables (Achen 2000), two different methods of estimation are employed: Prais-Winsten transformations, which allow for the estimation of time-series regressions in the presence of autocorrelated errors, with panel-corrected standard errors; and fixed effects for year and country, with robust standard errors. The main substantive findings are consistent across estimations and should serve as robustness checks for the findings.

The first task is to establish conclusively that markets are reacting to EU membership, and to specify the stages at which that reaction is strongest. Table 1 shows the effects

[17]The countries are Albania, Belarus, Bulgaria, Croatia, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Macedonia, Moldova, Poland, Romania, Russia, Slovakia, Slovenia, and Ukraine.

[18]See, for example, Cantor and Packer (1996) for work on determinants of credit ratings; Edwards (1986) on loans to developing countries; Eichengreen and Mody (1998), Hilscher and Nosbusch (2007), Kamin and von Kleist (1999), and Min (1998) on issue spreads for emerging-market sovereign bonds.

[19]Bond traders pay a lower price for assets that are illiquid, meaning that they cannot be resold on secondary markets, making it more difficult to hedge risk; see Amihud and Mendelson (1986), Glosten and Milgrom (1985), Lo, Mamaysky, and Wang (2004).

TABLE 1 EU Effect Across Stages of Expansion*

Variable	A.	B.	C.	D.
Constant	1.18***	1.60***	2.07***	2.55***
	(.22)	(.13)	(.09)	(.11)
Inflation	.001***	.001***	.003***	.003***
	(.0003)	(.0003)	(.0007)	(.0006)
Current	.0004	.0008	.0002***	.00003
account	(.002)	(.002)	(.00006)	(.00004)
Reserves	−.0002***	−.00002***	−.00009***	−.0004***
	(.00007)	(.00007)	(.00001)	(.00009)
Portfolio	. − 0004	−.0008	.00001	−.00001
liabilities	(.001)	(.002)	(.00009)	(.00006)
EU	–	−.14	–	−.05
apply		(.12)		(.17)
EU	–	−.49***	–	−1.45***
negotiation		(.08)		(.12)
EU	–	−.31***	–	−.81***
accession		(.08)		(.17)
EU	–	−.75***	–	−.31
membership		(.13)		(.21)
Wald χ^2	26.7	159.33	–	–
Prob > χ^2	0.00	0.00	–	–
σ_μ	–	–	.94	.91
σ_ϵ	–	–	1.21	1.00
N	496	496	496	496

*Dependent variable is the natural log of spreads on government bonds, quarterly from 1991 to 2006. Models A and B are Prais-Winsten regressions with panel-corrected standard errors in parentheses; models C and D are fixed-effects regressions with robust standard errors in parentheses. ***p < .01; **p < .05; *p < .10.

of the four different stages of EU integration on quarterly observations of the data.

Recall that positive values indicate higher levels of investor risk (higher spreads), whereas negative values indicate factors that decrease risk (lower spreads). Inflation also has a strong and statistically significant effect on candidate country sovereigns; more inflation makes a country look more risky. Higher levels of reserves are associated with drops in lending risk, an effect that is statistically significant at the $p < .01$ level across specifications. Save for in the fixed-effects model excluding EU entry, the coefficients on current-account balances are not statistically significant, nor are those for overall volumes of portfolio debt.

Unsurprisingly, the variable for EU application is insignificant in all of the models, since application is not a guarantor of entry: Turkey, for example, languished in the application stage since 1987 before being formally asked to open negotiations in 2005. The statistically significant effects—all at $p < .01$—begin at the EU negotiation stage, which thus far has meant the start of an irreversible process of EU entry. Additional effects are seen at the accession stage, with membership being significant as well in the Prais-Winsten model.[20]

To make comparisons across variables easier, since all are measured in different units, Table 2 shows the expected results of a change in one standard deviation of each of the independent variables. The values are transformed back into their original, antilog units. The stages of EU talks, however, are measured as a change from 0 (not active) to 1 (active).

[20]To see if these results were robust to the inclusion of different international organizations, I included in separate estimations additional variables for membership in the North Atlantic Treaty Organization (NATO), the Organization for Economic Cooperation and Development (OECD), and the World Trade Organization (WTO). These organizations operate quite differently from the EU in terms of their criteria for admission, their mission statements, and the benefits of membership; thus, an adequate exploration of their effects would require a separate set of hypotheses and different empirical specifications. Nonetheless, the EU effects were larger than those of the other institutions, an interesting finding that deserves further inquiry, as discussed in the conclusion.

TABLE 2 Effects of One SD Change of Independent Variables on Bond Spreads

Inflation	−5.56
Current Account	1.08
Reserves	−1.26
Portfolio liabilities	−1.01
EU apply	−1.06
EU negotiation	−3.44
EU accession	−5.67
EU membership	−3.57

Put another way, holding all other control variables at their mean values, risk levels drop by 1.06 percentage points at the application stage, then down a total of 4.50 at negotiation, reaching −10.17 at accession, and a drop in risk of 13.74 percentage points all told, by the time the country reaches the membership stage. According to the model, countries such as Bulgaria, which has the closest to mean values of most variables of any country in the dataset, would see the expected values of their risk levels drop by 14.79 percentage points from application to membership—0.77 at application, 11.62 at negotiation, 1.97 at accession, and 0.43 at membership. To compare, during the onset of the Russian rouble crisis in 1998, spreads for Bulgaria increased by a maximum of about 10 percentage points. Thus, for Bulgaria, moving through negotiations with the EU gives it the same risk levels as Portugal's today.

Test of Selection Mechanism

Let us return to the possible mechanisms behind this effect as laid out in the hypotheses above. It may be the case that countries that end up negotiating with the EU are inherently more stable and prosperous than those that do not, and that the EU is simply selecting prospective members through the same logic that investors might use (although even if that were true, negotiations could still have an impact on market perceptions). This model takes into account the potential endogeneity of EU negotiations by measuring and controlling for the unobservable factors that drive states to negotiate with the EU and that also affect market perceptions. These types of problems have been under examination in political science in recent years.

In the case under study here, selection bias could occur when the same attributes that would lead to lower spreads also lead to EU accession. This conflation is widespread in reports about particular countries. Analysts, for example, speculate as to "whether Albania can curb its reputation for lawlessness and secure a place in the queue for membership of the EU."[21] But if we saw spreads fall in the event that Albania opened EU talks, would they be a result of improved conditions in the country, such as corruption reform and strengthening of the judiciary, or of EU negotiation itself?

To address this source of potential bias, it is possible to model first a country's propensity to undergo a particular dichotomous treatment (here, the "treatment" is the opening of EU negotiations) and then include that probability in the final analysis. One first specifies a selection, or treatment, equation in which the dependent variable is the absence or presence of EU negotiations. Ideally, one would want these variables to be uncorrelated with the second, outcome, equation, though in practice this becomes a matter of degree, as there is a trade-off between the correlation between the two equations and the fit of the selection equation to the treatment variable.

Variables that correlate with opening EU negotiations but not with investor risk can be found in the chapters of the *acquis communautaire*. As mentioned, the *acquis* describes in exhaustive detail all the issue areas on which potential new members must have EU-compliant legislation. Though many of these areas are of potential interest to portfolio investors, some concern cultural areas that would not be of direct relevance to bond spreads. Although they might be correlated with other things investors care about, such as overall levels of wealth in a country, it is difficult to imagine how cultural issue areas would directly affect investor risk. Nonetheless, they are crucial steps in EU integration and thus are theoretically and practically distinct from any outcome equation modeling determinants of bond spreads.

For the selection equation, two new variables proxy for the cultural factors driving countries to join the EU. The first, *movies,* is a measure of the number of native-language movies released in a country in a given year. Local movie production is explicitly mentioned in Chapter 20 of the EU's *acquis communautaire,* on culture and audiovisual policy.[22] A high number of domestically produced movies indicates government efforts toward promoting at least one form of local culture, which the EU explicitly values but should be of no particular interest to

[21] "A bright future around the corner," *Financial Times*, 12 April 2005.

[22] Specifically, "What are (if any) the financial support systems in place for the audiovisual sector (including cinema)?" Source: www.europa.eu.int/enlargement/Chapter20.

investors. Relatively closed Albania produced an average of three domestic films a year, on par with Slovakia, the regional leader in foreign investment. Thus, there is little reason to believe that portfolio investors would be concerned with domestic movie production. This variable is weighted by population size, to take into account the potential audience for locally produced films.

The second new variable counts the number of UNESCO World Heritage sites in any country in a given year. Chapter 8 of the *acquis* refers to such sites explicitly.[23] UNESCO recognizes World Heritage sites on a rolling basis; Croatia went from having three in 1990 to six by 2004, and the Czech Republic started 1990 with no recognized sites at all, but advanced to 12 by the end of 2006. As above, though a high number of World Heritage sites might promote tourism, which would indicate a greater openness to the world economy that might be associated with lower risk premia, it is not necessarily the case; Belarus has four such sites, twice as many as economically open Estonia. Thus, it is reasonable to assume that this variable will do a good job in predicting EU accession and not sovereign spreads. To factor in country size, this variable is weighted by the total land area of each relevant country.

The first-stage equation also uses Freedom House's measure of civil liberties, which serves as a third-party assessment of the strength of civil liberties such as freedom of speech and expression in a country. Again, this should be positively correlated with EU accession, since human rights and respect for civil liberties appear in several different chapters of the *acquis*.[24] However, civil liberties should at best be of indirect concern to investors.

To make sure that the first-stage equation is not underspecified, the equation includes variables that are not orthogonal to the outcome equation: GDP per capita, and distance (measured in number of kilometers) from Bonn, which has commonly been cited as a proxy for cultural and economic closeness to Western Europe (Gallup, Sachs, and Mellinger 1999). Though these variables are likely to help predict bond spreads, their inclusion ensures that the model predicts the probability of EU accession with reasonable accuracy. Among the postcommunist countries, proximity to Western Europe as well as overall levels of income have been strong predictors of the likelihood to join.

As such, the selection equation is as follows:

$$\begin{aligned} \textit{EU Negotiations} = {} & \alpha + \beta[\text{movies}]_i + \beta[\text{UNESCO}]_i \\ & + \beta[\text{civil liberties}]_i + \beta[\text{GDP}]_i \\ & + \beta[\text{Km from Bonn}]_i + \mu_i + \varepsilon \end{aligned} \tag{1}$$

where *UNESCO* is the cumulative number of UNESCO World Heritage sites in a country, weighted by the land area; *movies* counts the number of domestically produced, native-language movies in a given country year, weighted by the population of the country; *GDP* is gross domestic product, weighted by purchasing-power parity; *Km from Bonn* measures the distance of each country's capital from Bonn, Germany; and *civil liberties* measures the degree of civil liberties present in a given country and year, as assessed by Freedom House.[25] Similarly, kilometers from Bonn proxies both for previous history with European political frameworks as well as proximity to European markets (Campos and Coricelli 2002; Sachs and Warner 1996). Because the treatment must be binary (either a country receives the treatment, or it does not), I use the stage of entering into EU negotiations and time periods thereafter, since that is the stage at which the first impact of lower spreads was initially observed.

The outcome equation in which the dependent variable and the control variables are the same as those employed in previous analyses is as follows:

$$\begin{aligned} Risk = {} & \alpha + \beta[\text{Controls}]_i + \delta[\text{EU Negotiations}]_i \\ & + \varepsilon_i + \rho \\ & \text{where } \varepsilon \sim \text{N}(0, \textit{sigma}) \\ & \mu \sim N(0, 1) \\ & \text{and } \rho = \text{corr}(\varepsilon, \mu) \end{aligned} \tag{2}$$

Note that the parameter ρ is included in equations (1) and (2). This measures the correlation of μ (the error term of the selection/treatment equation) and ε (the error term of the outcome equation). If ρ approaches -1 or 1, then standard statistical techniques will produce biased estimates of δ. Any part of ε that is correlated with μ will in this case be attributed to δ; in other words, standard techniques would attribute to being in EU negotiations the unobservable shocks that affect both market ratings and the propensity to enter into negotiations (von Stein 2005). If, however, ρ is close to 0, then μ and ε are independently

[23]The relevant portions are under the subheadings "What, if any, are the support programmes in the field of cultural heritage?" and "What legal regime applies to the preservation of cultural heritage?"

[24]See, for example, the chapter on minorities as well as the chapter on the judiciary.

[25]This measure is coded such that high values indicate a higher degree of civil liberty. To make expectations consistent with the other variables, where we would expect more movies and more UNESCO World Heritage sites to be associated with a higher tendency to open negotiations with the EU, I invert the *civil liberties* variable.

TABLE 3 Treatment Effects—Test for Selection Bias*

Variable	Full
Constant	2.54***
	(.17)
Inflation	.004***
	(.0008)
Reserves	−.00006**
	(.00002)
Debt	.0001
liabilities	(.0002)
Current	.0001
account	(.00009)
EU	−1.02***
negotiation	(.36)
Selection	**Equation**
Constant	3.73
	(1.14)
Movies	.02*
	(.01)
UNESCO	.11*
sites	(.06)
Civil	−1.41***
liberties	(.49)
GDP per capita	.0004
(PPP-weighted)	(.0001)
Km from	.002*
Bonn	(.0006)
ρ	.16
	(.26)
σ	1.10***
	(.07)
λ	.18
	(.28)
N	124

*Dependent variable is the natural log of spreads on government bonds, quarterly from 1991 to 2006. Treatment-effects regression, with country and year dummies suppressed. N = 128. Likelihood ratio test of independent equations ($\rho = 0$): $\chi^2(1) = 0.39 Prob > \chi^2 = 0.53$. ***p < .01; **p < .05; *p < .10.

and identically distributed. As a result, δ would be unbiased, and one could be confident that δ represented the true independent effect of EU negotiations on market perceptions.

Table 3 displays the results of the above analysis controlling for selection effects. Though the treatment-effects model does not address the problems in TSCS datasets, I include country and year dummies in both stages of the regressions. For μ, we would expect ρ to have a negative sign, which would indicate that the same unobservable factors that lead countries to have low bond spreads (a negative effect on *EU negotiations* in the outcome equation) would also make them more likely to enter into EU negotiations (positive coefficients on the variables in the selection equation). Here we observe a positive sign on ρ, although the magnitude of the coefficient is small, and not statistically significant. Were that parameter closer to 1 and of high statistical significance, it would indicate the presence of selection bias, which would mean that standard estimation techniques would understate the impact that opening EU negotiations—our main variable of interest—has on market perceptions. Although selection models are highly sensitive to model specification, the relatively low magnitude (.16) of any selection effect indicated by the low and insignificant values of ρ should alleviate concern about omitted variable bias; namely, that the specification has left out some explanatory variable that predicts movements in both EU negotiations and sovereign spreads.

Additionally, that the coefficient on the *EU negotiations* variable is still strong and significant below the .01 level indicates that, even when modeling and controlling for the selection process, opening EU negotiations still is associated with drops in sovereign debt spreads. This should give us confidence that the effect of EU accession on investor risk is not mistakenly attributed to any underlying characteristics that drive both risk and EU accession.

Test of Hypothesis 2: Policy Reform

As outlined above, another possibility is that policy reform, either undertaken prior to EU negotiation or after the time that negotiations begin, may be a substantial part of the observed effect of EU negotiations. This is to some degree measured by the economic controls; high levels of inflation, for example, and unemployment are of course partially the result of government's policy choice or a lack thereof. However, they are also an indicator of the composition of a particular economy, which is a result of factor endowments as well as geography. Particular reform policies may be enacted—say, attempts at privatization or of boosting employment—that may stall or be altogether ineffective. Thus, in addition to those controls, it may be worthwhile to disentangle an actual government policy from the way it plays out on the ground.

To test whether markets are simply responding to policy reform enacted by governments, a second group of models includes reform indices compiled by Kostadinova (2004), which measure three areas of reform. The first is institutional reform, which covers banking sector reform,

TABLE 4 Test of Policy Reform*

Variable	A.	B.	C.	D.
Constant	5.29***	4.15***	9.09***	9.63***
	(1.49)	(1.52)	(2.05)	(2.19)
Inflation	0.002***	0.003***	0.004***	0.003
	(0.0007)	(0.0008)	(0.0006)	(0.0006)
Current	0.0002**	0.0002**	0.0001	0.0001
account	(0.00009)	(0.00009)	(0.0001)	(0.00008)
Reserves	−0.00004**	−0.00005**	−0.00004*	−0.00004*
	(0.00002)	(0.00002)	(0.00002)	(0.00002)
Portfolio	0.0001	0.0002	0.0001	0.0002
liabilities	(0.0002)	(0.0002)	(0.0002)	(0.0002)
Privatization	−0.06	−0.05	−0.09***	−0.11***
	(0.05)	(0.05)	(0.02)	(0.02)
Price	0.001**	0.001**	0.08	0.06
liberalization	(0.0005)	(0.0005)	(0.07)	(0.065)
Institutional	−0.05**	−0.03	−0.004	−0.003
reform	(0.02)	(0.02)	(0.003)	(0.003)
EU	–	0.34	–	1.27***
apply		(0.31)		(0.35)
EU	–	−0.66**	–	−0.45*
negotiation		(0.32)		(0.25)
EU	–	−1.73***	–	−1.21**
accession		(0.64)		(0.42)
EU	–	0.56	–	1.21*
membership		(0.75)		(0.50)
σ_μ	1.79	1.53	–	–
σ_ϵ	1.05	.99	–	–
Wald χ^2	–	–	33.9	67.21
Prob > χ^2	–	–	0	0
N	113	113	113	113

*Dependent variable is the natural log of spreads on government bonds, quarterly from 1991 to 2006. Models A and B are Prais-Winsten regressions with panel-corrected standard errors in parentheses; models C and D are fixed-effects regressions with robust standard errors in parentheses. ***p < .01; **p < .05; *p < .10.

bankruptcy law, company law, competition policy, contract law, pledge law, stock exchange, and tax. The second is price liberalization, and the third is privatization, or the transfer of large- and small-scale state-controlled property into private hands.[26] It should be said, however, that they do not measure the effectiveness of policy reform (the economic indicators already included in the specifications probably are a better proxy for effectiveness), but rather the degree of reform that a government has pursued. Table 4 includes these variables in the base specifications, along with the EU variables in a second set of specifications.

If EU entry simply sent markets information about the existence of policy reform, we would expect the effects of the policy reform variables to be more or less swamped by the introduction of an EU variable to the base model controlling for policies. Notice, however, that negotiating with EU has effects that operate more or less independently of policy reform. Price liberalization is significant in the Prais-Winsten Models (A and B), but the effect

[26]Other reform measures exist, but as Kostadinova (2004) points out, they are subjective, cover a limited time span, have limited variation, and focus on the end results of economic transformation, rather than policymakers' efforts in particular fields. That said, the same model specification, using policy reform measures from the European Bank for Reconstruction and Development, produced similar results, although the sample size (N = 58) was small. Similarly, the Campos-Horváth (2006) reform scores, though quite comprehensive in substance, only extend to 2001, well before most countries in the sample completed negotiation or initiated accession.

does not attenuate when the EU variables are introduced into the reform, indicating that investors view these processes as distinct. In those specifications, the significance of institutional reform, as well as the magnitude of the coefficient, decreases when the EU variables are included. Accession and negotiation are still statistically significant, and the magnitude of the coefficient on accession increases from previous specifications.

In the fixed-effects models, privatization has a significant effect toward reducing spreads on sovereign bonds, but the EU variables still retain their statistical significance and previously observed magnitude.[27] It is true that policy reform can have weak or mixed effects—simply enacting legislation on capital adequacy requirements for banks, for example, does not ensure compliance with those standards. But this should at least serve as an indicator of market reaction to attempts at domestic policy reform. Again, when EU negotiation enters the fixed-effects model, we see very little attenuation of the coefficients on policy reform—indeed, nor on most of the control variables that are themselves manifestations of the implementation of successful policies. This indicates that the two processes (EU talks and policy reform) are not collinear for markets, and that portfolio investors price market reform into their expectations of a country's default risk separately from that country's dealings with Brussels. This again points to an effect of negotiating with the EU that is independent of policy reform.

Test of Hypothesis 3: Seal of Approval

This final test examines the hypothesis that market expectations about a country's risk levels converge when Brussels officially claims that candidate countries' policies are up to EU standards. As mentioned above, the path to the EU requires substantial policy harmonization, not least in economic policy; out of its 35 issue areas, the *acquis* includes 13 chapters on economic matters. These range from fiscal policy to budget deficits to exchange-rate stability. Closing these chapters indicates that the EU considers not only a country's legislation but also its existing economic indicators to be compatible with the broader EU. We might expect here that investors would pay close attention to such a signal from Brussels, not just in terms of the substantive content of the message (that countries are up to EU standards) but also the highly public nature of such an announcement. Much of the risk (as well as the potential profit) in investment lies in diverging expectations of country performance, and when such a clear indication of progress is made by a visible third party, we could expect investors' expectations to align.[28]

To test this hypothesis, we can evaluate the performance of a separate variable (*Seal of Approval*) that indicates the percentage of those 13 issue areas on which a country had closed negotiations.[29]

For a further illustration of the process, take the case of the *acquis* chapter on taxation, Chapter 10. This chapter covers both direct and indirect taxation, as well as excise duties on alcohol and cigarettes, and business taxation. Slovakia opened that chapter in June 2001, and it was provisionally closed after 15 months of negotiations—a few months above the average year that negotiations on that chapter had taken for the other accession countries. Slovakia had taken a hard line on transition periods for taxes on gas, electricity, and distilled spirits—a concession that was particularly important to Slovaks, who wanted to safeguard their home production of plum brandy for personal consumption.[30] "This was a difficult chapter, maybe not the most difficult, but one of them," Ján Figeľ, Slovakia's chief negotiator, was quoted as saying.[31] The taxation chapter was the 23rd chapter that Slovakia had successfully negotiated. "It shows the people watching the market that we're on the train and it's moving forward," said Toma Kme, an analyst at the Slovenska sporiteľňa bank.[32]

We can analyze just how closely markets were watching this bit of news through an event study of market returns around the date in question. Event studies are common in finance as a means of estimating financial markets' reaction to particular occurrences. After

[27]Interestingly, in this specification, application for the EU is associated with a statistically significant *increase* in spreads. This result is surprising, but perhaps attributable to the uncertainty of a country's success in its quest for EU admission in the early 1990s. It was not until 1997 that the EU decided to move forward with its "big bang" of enlargement.

[28]This recalls the paradigm set out by Keynes, who likened investor sentiment to a beauty contest in which "it is not a case of choosing those which, to the best of one's judgment, are really the prettiest, nor even those which average opinion genuinely thinks the prettiest" (1936, 156).

[29]Those chapters include Chapter 1, Free Movement of Goods; Chapter 2, Free Movement of People; Chapter 3, Free Movement of Services; Chapter 4, Free Movement of Capital; Chapter 5, Public Procurement; Chapter 6, Company Law; Chapter 8, Competition Policy; Chapter 9, Financial Services; Chapter 17, Economic and Monetary Policy; Chapter 29, Customs Union; Chapter 32, Financial Control; and Chapter 33, Budgetary Provisions.

[30]The Czech Republic negotiated a similar concession at the time, as did Romania and Bulgaria two years later.

[31]"Slovakia Wins Case on EU Tax Chapter," *Slovak Spectator,* 1 April 2002.

[32]Ibid.

identifying the event of interest and defining an "event window" around that event—usually a few days before an event, to take into account market anticipation of an announcement, and a few days after to include the fallout—a researcher uses common indicators of market performance of the asset to predict a "normal" outcome during the event window in the absence of the event. One then subtracts the actual returns from the predicted returns to estimate the cumulative abnormal outcome (returns or losses) within the event window, then tests whether the cumulative abnormal return is statistically different from zero.[33]

In this case, the "normal" outcome is yields on 10-year German benchmark bonds, a strong predictor of bond market activity in European countries. If we define the event window as two trading days before and after the 21 March 2002 announcement of the provisional closure of the taxation chapter, the logged abnormal returns for Slovak 10-year government bonds are −1.48—or, in original units, a drop in returns of 4.98. This finding is highly statistically significant, with a test statistic of −6.46.[34] Results are similar with an event window of five days surrounding the event. Thus, confidence peaks when markets receive clear, publicized signals from the EU on the state of countries' policy reform, even though Slovakia negotiated a deal that differed from the original standards set up in the *acquis*.

Table 5 examines the results of the EU's "seal of approval" on countries' legislation in economic policy reform within the time period that countries were negotiating with the EU, indicated by closed economic chapters of the *acquis* (this variable is labeled *Seal of Approval*). The first two specifications compare the results of the "seal of approval" with the dummy variables for different stages of EU integration, as they appeared in previous specifications. The following two compare performance with the policy reform variables, to ensure that the effects of the seal of approval are distinct from those of policy reform. To return to the possible mechanisms delineated above, if markets cared more about the actual trajectory of reform than EU signals about the state of reform, we might expect coefficients on policy variables to cancel out the effects of the "seal of approval." The final two examine the effects of the International Crisis Research Group (ICRG), an organization that sells country risk assessments. The inclusion of these assessments tests whether markets are simply responding to a pronouncement from an expert organization on a country's level of risk.

Notice here that, on its own, the percent of economic chapters closed has a greater magnitude than any one of the stages of EU entry. Similarly, once those other EU variables are introduced in the model, the strength of the *Seal of Approval* coefficient decreases only slightly, indicating a surprisingly small degree of collinearity between those variables. This indicates that the formal channels of EU approval are the part of EU integration that matter most to portfolio investors. Additionally, the significance of the *Seal of Approval* variables against the policy reform variables shows that the "seal of approval" is a pure, supply-side signal and not a reflection of preexisting policy reform, either taken within or outside of the process of EU reform.

Why does the "seal of approval" variable perform better than the policy indices? Markets may observe policy reform in developing countries, but are unsure of its strength until it is endorsed by the EU. Information is often noisy in emerging markets, and the EU blessing makes markets more confident in a country's perceived course. The power of the signal at this stage is that the EU has taken a position on the trajectory of a particular policy, and its credibility as a signaler is taken to heart by markets. Whether the country actually sticks to the reform in question is irrelevant at this stage. The EU's very public pronouncement on policy reform trumps private information that investors may have, and aggregate market sentiment on those countries' risk converges to lower levels.

This view is further bolstered by the lack of statistical significance evidenced by the ICRG variables. On the one hand, this organization, like the professionals in the EU who negotiate the *acquis,* is staffed by experts who amass and process a large volume of information to make judgments on how vulnerable a country might be. One difference between the two, however, lies in the public nature of those judgments. The act of closing chapters of the *acquis* is heralded in the negotiating country and widely publicized. By contrast, the ICRG scores are available at a considerable price. Their relative lack of availability makes them less of a public pronouncement than the signals from Brussels, and thus it is more difficult for them to help build a widely shared consensus on the state of a country's reform.

[33]For a more in-depth explanation with examples of market responses to environmental performance in developing countries, see Dasgupta, Laplante, and Mamingi (1998).

[34]The test statistic is test $= (1/n\Sigma AR/AR_{\sigma})$; that is, the inverse of the number of days in the event window, multiplied by the cumulative normal return divided by the standard deviation of the abnormal return. If the absolute value of the test statistic is greater than 1.96—which comes from the standard normal distribution—we can be 95% confident that the results are different from zero.

TABLE 5 Test of EU Seal of Approval*

Variable	A.	B.	C.	D.	E.	F.
Constant	2.54***	2.23***	3.66***	6.56***	5.88***	4.23***
	(.17)	(.30)	(1.19)	(1.74)	(1.66)	(1.8)
Inflation	.003**	.002***	.002**	.003***	0.001***	0.002***
	(.001)	(.0007)	(.0006)	(.0004)	(0.0007)	(0.0007)
Current	.00003	.0001	.00009	−.0002**	0.0001	−0.00007
account	(.0001)	(.00009)	(.00009)	(.00009)	(0.00007)	(0.0001)
Reserves	−.00004*	−.00004*	−.00006**	−.00003*	−0.00001	−0.00003
	(.00002)	(.00002)	(.00002)	(.00002)	(0.00002)	(0.00002)
Portfolio	.00008	.0001	−.00005	−.0004**	−0.00018	−0.00021
liabilities	(.0002)	(.0002)	(.0002)	(.0002)	(0.0002)	(0.0002)
EU Seal of	−1.99***	−1.93***	−1.77***	−1.73***	−1.40***	−1.62***
Approval	(.31)	(.34)	(.36)	(.32)	(0.35)	(0.25)
EU	−.15	.03	–	–		
apply	(.34)	(.25)				
EU	−.25	−.25	–	–	–	–
negotiation	(.27)	(.23)				
EU	−.24	−.51*	–	–	–	–
accession	(.27)	(.31)				
EU	−.10	−.01	–	–	–	–
membership	(.34)	(.35)				
Privatization	–	–	−.006	.04	–	–
			(.04)	(.06)		
Price	–	–	.0009	−.003	–	–
liberalization			(.0006)	(.003)		
Institutional	–	–	−.02	−.04	–	–
reform			(.02)	(.06)		
ICRG−	–	–	–	–	−0.01	0.001
Financial risk					(0.02)	(0.02)
ICRG−	–	–	–	–	0.03	0.03
Political risk					(0.03)	(0.04)
ICRG−	–	–	–	–	0.04	−0.03
Economic risk					(0.02)	(0.02)
Wald χ^2	–	95.90	–	110.15	62.76	–
Prob > χ^2	–	0.00	–	0.00	0.00	–
σ_μ	.85	–	1.37	–	–	0.81
σ_ϵ	.98	–	.86	–	–	0.77
N	134	94	134	94	112	112

*Dependent variable is the natural log of spreads on government bonds, from 1991 to 2006. Models B, D, and E are Prais-Winsten regressions with panel-corrected standard errors in parentheses; models A, C, and F are fixed-effects regressions with robust standard errors in parentheses. ***p < .01; **p < .05; *p < .10.

Conclusion

This article's primary task has been to delineate three mechanisms through which markets view the process of EU integration. The drops in risk that we see when countries negotiate for EU membership are not a function of selection, where the EU picks the countries that already have the best policies and the highest level of development. Nor are markets responding to the policy reform that candidate countries undergo in order to be in line with the EU. Instead, candidates feel the most forceful drops in market risk when the EU looks favorably on preexisting policy reform.

The implications of this article go well beyond risk assessment and the EU. The findings here offer substantial insights into the potential power of international institutions, even when controlling for factors that may determine selection into those institutions. Many recent empirical studies of the consequences of membership in international institutions have sought to disentangle the problem of selection bias. This article has shown that the EU has an independent effect that is exogenous to the underlying processes that drive countries to join the EU. Thus, modeling selection can help us gain confidence in modeling the precise empirical effects of membership in international organizations.

Further research might examine the institutional qualities that give the EU's pronouncements such power, while exploring if other institutions with similar qualities might offer reductions in risk. The EU does offer a particular set of institutional features, among them ultimate economic gain for members as well as selectivity. An organization might have strict standards for membership but offer no tangible economic benefit once countries join (the OECD might be one example). The economic perks of membership in the EU also undoubtedly play a role in conferring confidence. But markets might not react as strongly to membership in preferential trading agreements with the EU, or in the European Neighborhood Policy—both of which bring economic rewards to countries but fall well short of membership. Thus, economic gain seems a necessary but not sufficient condition for drops in risk.

It is interesting to note that the EU effect is strongest in the stages before countries actually become members. When countries have incentives to reform, in order to be deemed acceptable for membership, the EU leverage may be strongest. Once countries actually become members, Brussels has far less direct influence on countries' behavior. In fact, many have claimed that the EU's only moment of actual leverage is in the accession stage; though Bulgaria has recently been punished with fines for backsliding on corruption, many other breaches of EU regulation have gone unpunished.[35] The trick is that this may not matter to financial markets: the spectacle of clearing an EU-imposed hurdle may be sufficient to categorize a country as being among the EU peer group. That the boost of investor confidence occurs most tangibly at the negotiation stage—not at the moment of membership—implies that markets are most responsive to EU pronouncements on reform, rather than the actual path of reform. This challenges our view that markets are efficient. Many have noted that markets seem relatively sanguine toward blatant breaches of EU policy among member states, including Germany, Greece, and Italy's violation of the limit of acceptable levels of government expenditure. Future research might explore the limits of the seal of approval, and the durability of the confidence it confers on recipients after they have already entered an organization. For example, how long does the EU glow last? Do markets punish countries that backslide on their commitments to EU policy? These questions are beyond the scope of this article to answer fully. However, since the nature of the "seal of approval" seemed to stem largely from public pronouncements from Brussels on the status of a country's policies in a particular reason, we might expect that an equivalent loss of confidence would only occur with a similar verdict on a country's missteps. Since the EU is not in the habit of regularly disciplining its members, despite provisions for such penalties existing in EU law—it does take states to court for noncompliance and has twice fined member states, once on Greece for failing to implement two waste management directives, and on Bulgaria in 2008 for misuse of EU funds—it is possible that a similar effect would not be observed.

Furthermore, as mentioned at the outset of this article, the *acquis* was applied rigorously in the so-called "big bang" of enlargement, but less so for earlier rounds of expansion. Since the effect of a seal of approval hinges on commonality of interpretation, it would be worth exploring whether that effect holds when commonality is less assured. The EU of today is a vastly different entity than that of the mid-1990s. Then it was a union of 15 relatively rich countries. Brussels currently presides shakily over 29 members, navigating internal divisions over foreign as well as domestic policy, disagreement on the extent of integration, and a proven unwillingness to enforce its own rules. Thus, the signal from the supply side may not be nearly as strong. Investigating the effects of progress made toward membership in current candidate countries would help isolate these effects. Similarly, Turkey's candidacy is an entirely different case. Up through the Big Bang of enlargement, no country that opened negotiations had been denied entry. But currently, the opening of negotiations may not be nearly as credible a signal of eventual membership. Particularly with very visible public reluctance to admit Turkey, as well as "enlargement fatigue" throughout the union, investors may well assume that the EU's gestures toward the latest batch of candidates are not as sincere as in previous rounds. Without the promise of eventual membership, the signals from Brussels may lack

[35]The European Commission was pushing for Germany to be fined for exceeding the 3% budget deficit, but the European Council refused. The Commission then took the case to the European Court of Justice, which ruled that the Council could refuse to vote fines but could not scrap the basic rules of the Stability and Growth Pact without due process.

the uniformity of interpretation that seems to have graced the negotiations of the postcommunist countries.

How, then, might countries that cannot join the European Union seek to assure investors? Other visible international signals may not provoke drops in risk of the same magnitude but could offer some benefit. Hard criteria for entry, and clear signals once those criteria are fulfilled, may be critical in endowing countries with the stamp of credibility. Organizations where the requirements for membership are more fungible may not send as strong a signal to markets. Future research might explore the balance between tough criteria and the ultimate payoff of the institution. Although it is beyond the scope of this article, further inquiry into the microfoundations of the elements of the institution and the expected payoffs of membership would help specify which aspects of EU membership might be successfully employed by other regional organizations to reduce risk in its members.

Nonetheless, this is an important finding for the literature not only on international development, but also on international institutions. Institutional membership can signal credibility in a way that goes beyond present economic reform and initial conditions. This should not only be good news for champions of institutions, but could also offer a point of consideration for governments hoping to attract capital. Institutions may help them signal their attributes and intentions in a way that domestic policy reform cannot wholly accomplish on its own.

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