

# Does compliance matter? Assessing the relationship between sovereign risk and compliance with international monetary law

Stephen C. Nelson

Received: 28 January 2009 / Revised: 20 January 2010 / Accepted: 25 January 2010 /  
Published online: 25 February 2010  
© Springer Science+Business Media, LLC 2010

**Abstract** An important theory of international cooperation asserts that governments comply with international law because of the reputational costs incurred by reneging on public agreements. Countries that sign binding international agreements in the realm of monetary relations signal their commitment to an open economic system, which should reassure international market actors that the government is committed to sound economic policies. If the theory is correct, we should observe evidence that noncompliance is in fact costly. I test this argument by examining the effect of noncompliance with Article VIII of the IMF's Articles of Agreement on sovereign risk ratings. The results show that noncompliance with the agreement mitigates any benefits that accrue to Article VIII signatories. The empirical evidence suggests that, in addition to improving economic and political conditions at home, governments in the developing world would improve their access to financial markets by signing and complying with international monetary agreements.

**Keywords** Compliance with international law · Sovereign risk · The International Monetary Fund

JEL Codes · F33 · F53 · F55 · F59 · G24

---

**Electronic supplementary material** The online version of this article (doi:10.1007/s11558-010-9080-7) contains supplementary material, which is available to authorized users.

I thank Asaf Zussman, the participants at the graduate student colloquium at Cornell University, the anonymous reviewers and the editor of this journal for very helpful comments. I thank Beth Simmons and Daniel Hopkins for kindly sharing their data on Article VIII compliance. Christopher Way deserves particular thanks for his advice at every stage in the project. Any errors or omissions remain my own.

S. C. Nelson (✉)

Department of Political Science, Northwestern University, 240 Scott Hall, 601 University Place,  
Evanston, IL 60208, USA  
e-mail: stephen-nelson@northwestern.edu

## 1 Introduction

Scholars of international relations have paid increasing attention to the effects of international agreements on state behavior in recent years (Chayes and Chayes 1993, 1995; Downs et al. 1996; Simmons 1998). This line of research is primarily concerned with two issues: (1) the commonness of compliance with international agreements; and (2) the determinants of states' willingness to comply with the agreements they sign. A central point of contention in this literature concerns whether rules promulgated by international institutions (such as the IMF and WTO) merely ratify the interests of powerful states, or, alternatively, whether international laws exert significant constraints on government decision making. The debate has spurred theoretical and methodological advances, but has produced few conclusive answers about why states comply with international laws and whether compliance matters.<sup>1</sup>

In this article I shift the focus from compliance with international agreements as the dependent variable to compliance as the main explanatory variable. I examine whether compliance with Article VIII of the IMF's Articles of Agreement enhances the credibility of governments' commitments to carrying out sound economic policies and fostering a secure investment climate in the estimation of international financial market actors.<sup>2</sup> Investigating whether compliance with international monetary law has any appreciable effect on the perceived creditworthiness of sovereign states is important because it provides a test of the causal logic underlying path-breaking research on compliance with international agreements. In addition, the research has implications for the development strategies of low- and middle-income countries. Sovereign risk assessments have a significant impact on the ability of states to attract foreign direct investment and financial capital (Sinclair 2005). Previous research has focused mainly on the impact of domestic economic and political factors on perceptions of the riskiness of developing countries' investment climates.<sup>3</sup> I ask whether developing countries can improve their reputations for creditworthiness—thereby, in principle, enhancing their access to capital markets and attracting more FDI—by signing and complying with international laws.

Beth Simmons' research on Article VIII compliance provides an example of sophisticated work on international legalization. Utilizing a sample of 133 countries over the period of 1967–1997, Simmons finds that a commitment to maintaining an open current account is in large part explained by whether a state is a signatory to

<sup>1</sup> See Simmons and Hopkins (2005); von Stein (2005); Grieco et al. (2009).

<sup>2</sup> In addition to serving as the empirical fulcrum for the important debate on compliance between von Stein and Simmons and Hopkins, Article VIII is, as a central part of the IMF Treaty, the “first international accord in history to obligate signatories to particular standards of monetary conduct” (Simmons 2000b, 820). Countries that are signatories to Article VIII are required to maintain an open current account. Article VIII signatories are prohibited from placing restrictions on the availability of foreign exchange for goods, services, and “invisibles”—services such as legal and financial advisement, royalties, foreign remittances, etc. Sections 3 and 4 of Article VIII also proscribe states from engaging in, or permitting any of their fiscal agencies to engage in, any discriminatory currency arrangement or multiple currency practices. Although there was discussion within the IMF in the mid-1990s about adding a section to Article VIII requiring capital account convertibility, the requirement only extends to commercial credits granted by exporters or received by importers. See McKinnon (1979, 4–7).

<sup>3</sup> For example, Jensen (2003) and Sobel (1999).

Article VIII or not (Simmons 2000a, b). In Simmons' analysis, "controlling for every likely macroeconomic influence on the decision to implement current account restrictions, a formal declaration of adherence to Article VIII obligations consistently has a strong negative effect on the probability of imposing restrictions" (Simmons 2000b, 830). The decision by governments regarding whether or not to violate Article VIII is not, however, significantly influenced by the enforcement power of the IMF, which is relatively weak.<sup>4</sup> Nor is the threat of litigation resulting from a violation a significant deterrent. Rather, states choose to accept and comply with Article VIII because "commitment is one way in which governments seek to *enhance their credibility to markets*...The acceptance of treaty obligations raises expectations about behavior that, once made, are *reputationally costly* for governments to violate" (Simmons 2000b, 819).<sup>5</sup> In other words, "governments want to convince markets that they provide a desirable venue for international trade and investment" (Simmons 2000a, 328). The key mechanism in the argument is that, in an investment environment characterized by incomplete information, accession to Article VIII status and observance of the agreement's requirements signals credible commitment to prudent economic policies by signatories.

This article provides a straightforward but demanding test of the mechanism posited in Simmons' work. We would expect states that are signatories to Article VIII *and* refrain from imposing current account restrictions after signing on to the agreement to be rewarded for these behaviors; they should experience better access to capital and lower levels of the costs associated with borrowing. States that sign agreements and then renege on the obligations should be punished by markets. The desire to maintain a good reputation raises the costs for governments that might be tempted to violate the conditions of the international agreement.<sup>6</sup> Just as members of the classical gold standard received a "Good Housekeeping Seal of Approval" from creditors through their adherence to the system, commitment to and compliance with the IMF's legal directives in the current era of financial globalization should provide a visible signal to markets that borrowing governments are creditworthy (Bordo and Rockoff 1996; Obstfeld and Taylor 2003a, b).

The analysis proceeds in steps: in the first section, I discuss theories of compliance. In the second section, I describe Article VIII of the IMF's Articles of Agreement and how it might function as a commitment device. In the third section, I explain the data and methodology employed to test the hypothesis that Article VIII compliance actually matters to financial market actors. The article concludes by describing the results and considering further extensions of the argument.

To preview the findings reported below, the analysis shows that compliance with Article VIII does enable governments to demonstrate credible commitment to sound economic policies to international financial markets: controlling for a number of

<sup>4</sup> In the statistical analysis, use of Fund credits—a proxy for the Fund's sanctioning power—is unrelated to the decision to comply.

<sup>5</sup> Italics added for emphasis.

<sup>6</sup> The argument dovetails with Tomz's (2007) historical analysis of sovereign borrowing. Tomz provides evidence that enforcement through coercive measures (gunboat diplomacy and trade sanctions) cannot explain historical patterns of lending and repayment; rather, governments with good reputations were charged lower interest rates by private lenders, and, preferring to maintain their good reputations, tended to honor their debts in both favorable and adverse economic circumstances.

potential confounding factors, noncompliance exerts a strong positive effect on two different measures of country risk for the 112 countries over the 1979–1997 period included in the analysis. In the pages below, I show that the relationship between market perceptions of risk and compliance with international monetary law persists when I take steps to account for the non-random assignment of Article VIII status and the possibility of reverse causality. The result provides further evidence that compliance with international law does in fact matter to market actors and that the mechanism enforcing compliance is market-based. The findings contribute to the growing body of evidence suggesting that institutions enable governments to credibly signal to markets that the policy environment will be stable in the future.<sup>7</sup>

## 2 Theories of Compliance

Compliance with international laws is a puzzle for theorists of international relations because no central enforcement mechanism exists in the international system. In addition, states may face strong incentives to defect from the agreements that they sign. According to realists, states in an anarchic international system do what they must to defend their core political, economic, and territorial interests; hence, international agreements will exert little independent effect on state behavior in many different issue areas, including trade and monetary relations (Keohane 1984, 99; Mearsheimer 1994/95; Morgenthau 1978, 299; Waltz 1979, 204). As Simmons notes, “Realists view the activities of major powers and the pursuit of important interests as highly unlikely to be constrained by legal authority or prior agreement” (Simmons 1998, 79). Even if the rate of compliance by states is high, this may not be a very meaningful measure of the constraining power of international law on state behavior if agreements simply ratify the preexisting patterns of behavior by powerful states.<sup>8</sup>

An alternative perspective on compliance with international agreements focuses on the benefits that international institutions provide for states—reducing transaction costs and generating and disseminating information, among other benefits. In this formulation, the temptation to defect exists, but compliance is widespread because governments are concerned with maintaining a good reputation. Failing to honor an agreement while other states comply with the same agreement may garner a short-term benefit for the defector state. However, the long-term costs may outweigh the immediate benefits: noncompliance by one state can trigger defections from agreements by other states, which squanders the potential advantages available to states that enter into international agreements (Keohane 1984, 103-06; Axelrod 1984). Keohane was among the first to identify reputation as the central compliance mechanism: “For reasons of reputation...egoistic governments may follow the rules and principles of international regimes even when myopic self-interest counsels

<sup>7</sup> See North and Weingast (1989). Bütthe and Milner (2008) show that membership in GATT/WTO increases foreign direct investment in developing countries.

<sup>8</sup> Downs et al. (1996) suggest that the high rate of compliance identified by Chayes and Chayes (1993) and Mitchell (1994) is a consequence of selection effects.

them not to” (Keohane 1984, 106). Scholars writing on the effects of “audience costs” have pushed the reputational theory of compliance further, noting that governments face two audiences—one external (other states and non-state actors, such as investors), and the other domestic (voters and organized societal interests).<sup>9</sup> Governments that violate international agreements not only risk their good reputation for cooperation at the international level (Tomz 2007); they also risk being punished by their constituents for failing to honor agreements. One of the important findings from this line of research is that democratic regimes are less likely to defect from the agreements they sign, since they face higher domestic audience costs than autocratic regimes (Schultz and Weingast 2003).

Simmons’ aforementioned work provides a good illustration of how reputation effects might drive compliance with international laws. Analyzing the impact of a range of different economic and political variables on the decision to violate Article VIII, Simmons identifies two key influences: (1) the level of compliance in a country’s region; and (2) a country’s commitment to the rule of law. Simmons suggests that these findings are consistent with a reputational theory of compliance. A good reputation for honoring legal commitments in economic areas helps attract foreign investment; consequently, governments want to minimize the reputational costs incurred by noncompliance. These costs increase when similarly placed states that are competing for foreign investment are willing to comply and when a state has a pre-established reputation for protecting property rights at the domestic level.

### 3 Compliance and Domestic Politics: Article VIII as a Commitment Device

The previous section reviewed arguments about how reputational concerns act as an enforcement mechanism in maintaining compliance with international agreements. Left unclear is why a government’s reputation may be enhanced by commitment to international laws such as Article VIII. The IMF notes that signing the agreement functions as “a positive signal that commits members’ authorities to refrain from resorting to distortionary restrictions in the future. This, in turn, could help build overall investor confidence and encourage capital flows” (IMF 2006). Governments may be tempted to restrict the current account for several reasons: (1) to avoid balance-of-payments problems by intervening to conserve foreign exchange; (2) to pursue a development strategy that prioritizes certain types of transactions (exports, capital inflows) over others (imports, capital outflows); (3) as a fiscal instrument for revenue extraction and redistribution.<sup>10</sup> To the extent that policymakers have time inconsistent preferences (i.e., a stated policy preference to maintain a current account free from restrictions at time  $t$  is revised to maximize short-term gains at time  $t + 1$ ), accepting Article VIII obligations can act as a commitment device to prevent governments from renegeing on stated intentions not to interfere in free exchange

<sup>9</sup> The literature in political science on the importance of audience costs is large. Some important works include: Fearon (1994); Gaubatz (1996); Lohmann (1997); Mansfield et al. (2002).

<sup>10</sup> See McKinnon (1979, 41) and Simmons (2000b, 820).

(Simmons 2000a, 317). Governments may claim to be committed to liberal economic policies, but, as Büthe and Milner note, “unilateral, domestic policy choices can often be easily changed, especially if the change is at the expense of foreign private actors” (2008, 742). The public commitment that governments make when they accept Article VIII obligations has two effects on the uncertain investment climate that confronts international investors: (1) it raises the costs of renegeing on policy commitments by exposing noncompliance to both a domestic and international audience; (2) it provides information that allows market actors to more closely monitor government behavior. Noncompliance with international monetary law demonstrates to observers that the policy environment in a country is becoming more unpredictable.

The operation of the classical gold standard provides a parallel with the commitment to Article VIII. Governments face a time inconsistency problem in monetary and fiscal policy—there is a short-term incentive to create “surprise fiduciary money issues in order to capture seignorage revenue or default on outstanding debt” (Bordo and Rockoff 1996, 391). The gold standard, by fixing the price of a country’s currency to a quantity of gold, tied the hands of monetary authorities by requiring that the mint price of gold remained fixed through the purchase and sale of freely convertible bullion. Countries could only suspend convertibility in the context of well-understood contingencies (Bordo and Kydland 1999). Because the gold standard functioned as a credible commitment device for governments to stick fast to market-conforming policies, states that adopted the gold standard developed reputations as trustworthy borrowers, and hence experienced better access to capital. Bordo and Rockoff estimate that the average spread between yields on bonds in secondary markets and bond yields in London was reduced by about 40 basis points for gold standard adherents (Bordo and Rockoff 1996, 413). To the extent that Article VIII functions as a commitment mechanism, countries that comply with the agreement benefit from lower perceptions of sovereign risk.

On the other hand, there are reasons to think that financial market actors may not regard compliance with Article VIII as an important signal of a country’s commitment to “good” policies. Commitment to an international agreement is unlikely to be credible if external audiences do not believe that governments can actually uphold the commitment (Drazen and Masson 1994). For example, market actors will likely disregard a commitment to an open current account by a government that derives significant revenue from intervention in foreign exchange. In fact, the “tough” liberalization stance may actually harm the government’s credibility by worsening the budget situation in the future. In this case, compliance with Article VIII will do little to enhance the perceptions of country risk on the part of financial markets. In addition, Downs and Jones question the impact of reputation on compliance by noting that states often maintain multiple reputations in different issue areas, which do not necessarily overlap (Downs and Jones 2002, 95–114). A reputation for compliance with international monetary regulations may not be as important in the estimation of financial markets as a reputation for timely debt repayment. An empirical test of the relationship between compliance with international monetary law and creditworthiness may help to settle the debate.

## 4 Determinants of Sovereign Risk: Data and Methods

I proceed in this and the following section to the statistical analysis of the effect of compliance on perceptions of sovereign risk. The analysis includes pooled cross-sectional time-series data on 112 non-OECD countries from 1979 to 1997 (see the country list in Appendix B).<sup>11</sup> 1979 is chosen as the start date for the analysis because this is the first year for which the data on country risk is available.

### 4.1 Dependent Variables

Market perceptions of risk strongly influence both countries' access to capital and the cost of borrowing.<sup>12</sup> Two indicators are used to measure the dependent variable. I follow previous scholars in using these indicators to measure perceptions of creditworthiness (Ahlquist 2006; Brewer and Rivoli 1990; Cosset and Roy 1991; Dreher and Voigt 2008; Jensen 2003; Reinhart et al. 2003; Sobel 1999). The first is the ratings compiled by *Institutional Investor*, which are based on survey responses from leading international economists and sovereign risk analysts at major global banks (the *Institutional Investor* rating is hereafter referred to as the IIR). The second measure is the *Euromoney* rating of sovereign risk, which is generated by combining responses by credit rating experts at large financial institutions and quantitative data provided by the World Bank on factors such as debt ratios and economic performance (in this way, *Euromoney's* methodology relies more than the IIR on actual market conditions).<sup>13</sup> For more details on how each indicator is constructed,

<sup>11</sup> I am only excluding wealthy, mature democracies in Western Europe, North America, Oceania, and Japan from the analysis. Since the early 1980s, the only significant incidences of an imposition of current account restrictions by Article VIII members in the OECD occurred in France during Mitterrand's "U-Turn" in 1983 and in Greece in 1996–97. In addition, the focus of this article is on how compliance may or may not affect reputations, which influence access (and the terms of access) to foreign capital; OECD countries have essentially unlimited access to capital markets, so compliance with Article VIII theoretically should have little effect on the reputation of these countries. There is an additional empirical justification for limiting the sample: Blonigen and Wang (2004) present evidence suggesting that pooling of rich and poor countries is inappropriate in studies of FDI.

<sup>12</sup> Previous work has demonstrated a strong correlation between risk ratings and interest rate spreads (Feder and Ross 1982; Mosley 2006, 98). As an admittedly crude additional test, I used Ahlquist's (2006) data on portfolio capital inflows as a proportion of GDP to produce a bivariate correlation with my measures of creditworthiness. Unsurprisingly, I found a strongly negative correlation between portfolio inflows/GDP and IIR ( $\rho = -0.31$ ,  $p = 0.0000$ ) and the annual size of capital inflows and *Euromoney* ( $\rho = -0.37$ ,  $p = 0.0000$ ).

<sup>13</sup> As discussed in Dreher and Voigt (2008, 25), the construction of the *Euromoney* rating might pose an endogeneity problem for some of the covariates described in the next section, because factors such as debt level and composition and economic performance are built into the indicator (and thus almost by definition correlated with the country ratings). For this reason, Dreher and Voigt use a modified version of the *Euromoney* score that extracts three components which are clearly parts rather than determinants of creditworthiness (it is worth noting that Dreher and Voigt report a very high correlation (0.97) between the original and modified ratings). Unfortunately, detailed data that enable the authors to construct a modified rating are only available after 1992; since, following Simmons (2000a, b) and Grieco et al. (2009), my dataset ends in 1997 (and an important robustness check, described below, limits the sample to country-year observations prior to 1992), the Dreher and Voigt solution is too costly for me. However, it is important to note that the explanatory variables I am most interested in—those related to compliance with Article VIII—are *not* components of either of the two measures of perceptions of credit risk employed in this article.



see the description of the variables included in the analysis in Appendix A. The two measures of creditworthiness (IIR and *Euromoney*) are highly correlated ( $\rho=0.89$ ). The IIR is available from 1979 to 1997, whereas *Euromoney* ratings are available after 1982.

I analyze the effects of compliance on two different measures for several reasons: (1) as a sensitivity check to make sure that the results obtained are not due to model specification; (2) even though the two surveys are highly correlated, there is some disagreement between them, which reflects differences in how the measures are constructed; (3) while the IIR measure captures a longer time period, the *Euromoney* rating is available for a greater number of countries. Both dependent variables are originally scored on a scale ranging from 0 to 100, where higher scores imply lower country risk. I transform the variables by  $(100 - \text{IIR}/\text{Euromoney})$  for ease of interpretation, such that an increase in a coefficient implies greater country risk. I do not use the alternative, market-based measures of country risk, such as sovereign bond yield spreads provided by Goldman Sachs' Emerging Market Bond Index or bond ratings by credit rating agencies such as Standard & Poor's, because of data limitations.<sup>14</sup>

#### 4.2 Explanatory Variables

The main explanatory variable of interest in this article is whether a country complies or does not comply with the proscription of current account restrictions embodied in Article VIII. I am also interested in whether agreeing to Article VIII—regardless of compliance with the agreement—has any effect on perceptions of country risk. Consequently, I include a dichotomous variable that captures whether a member state of the IMF has signed on to Article VIII. The number of IMF member countries accepting Article VIII obligations has grown over time: in 1970, only 34% of member states had accepted current account convertibility; by 2004, that figure had risen to nearly 90% (165 of 184 member countries). In the 112 country sample about 36% of observations are coded as Article VIII signatories.

Noncompliance implies that a country has agreed to Article VIII obligations, but nonetheless applies restrictions to the current account. The IMF provides a table at the back of its *Annual Report on Exchange Arrangements and Exchange Restrictions* that indicates of the presence or absence of current account restrictions. In the *Annual Report*, a dash denotes openness and a vertically-centered period

<sup>14</sup> Reliable data on bond spreads are available for only eight emerging markets from 1994 to the present, and sovereign bond ratings by credit rating agencies are available for a smaller number of countries than either IIR or *Euromoney* scores (see Mauro et al. 2006, 100). Interest rate differentials are another alternative market-based measure of risk, but this indicator has drawbacks: the availability of data on national interest rates is spotty at best, and until the 1990s, own interest rates in most developing countries were not market-determined (Aizenman and Marion 2004, 575). Nonetheless, I used a simple *t*-test, relying on Aizenman and Marion's (2004) construction of the interest rate differential  $\ln[(1+i)/(1+i^{US})]$ , where  $i^{US}$  is the US T-bill rate and  $i$  is the national deposit rate), to see whether countries that fail to comply with Article VIII pay higher relative interest rates. On average, the logged interest rate differential is almost twice as large for countries that are noncompliant with Article VIII (0.41) than it is for countries in which the *noncompliance* variable equals zero (0.22). The large *t*-statistic (6.07) indicates that the difference of means between the two groups (compliant and non-compliant) is highly significant ( $p=0.0000$ ).



denotes a restriction on the current account; I call this dichotomous variable *Restriction*.<sup>15</sup> The measure of noncompliance used in the analysis is simply an interaction term between the Article VIII status and the presence or absence of current account restrictions; the variable equals 1 if a country is a signatory to Article VIII and imposes restrictions on the current account, and 0 otherwise.<sup>16</sup> About 43% of Article VIII signatories are coded as being noncompliant at some point.<sup>17</sup>

I include a number of economic and political variables that are theoretically linked to market perceptions of country risk in the analysis. Economic variables that are likely to be important include measures of leverage and liquidity. Countries that have a poor balance of payments position are more likely to be viewed as a default risk; consequently I include a measure of the current account balance as a proportion of GDP. High levels of liquidity (in terms of international reserve assets) may reassure market actors that a government will be able to compensate for short-term difficulties (Brewer and Rivoli 1990, 358). To account for this, a variable that measures reserves as a proportion of total external debt is included. In addition to these variables, countries that are more economically developed (measured as GDP per capita) and experiencing good economic performance (measured as annual growth in GDP per capita) are expected to garner more favorable assessments of country risk.

Countries that are highly leveraged are likely to face tougher conditions to gain access to capital; thus the measure of indebtedness used in the analysis, debt as a percentage of GNI, should be positively related to the measures of country risk. Reinhart et al. (2003) argue that the level of debt is less important than a history of debt repudiation; the historical record shows that some “debt intolerant” countries (“lemons,” in Tomz’s (2007) terminology) tend to default even with a fairly low debt burden. Countries that fail to service their foreign debts can suffer long-lasting reputational penalties. Consequently, I include a measure, drawn from Ahlquist’s (2006) dataset, which captures each country’s record of debt service. *Percent Default* is a cumulative indicator that records the percentage of years since 1960 that a country was in default.<sup>18</sup>

<sup>15</sup> Quinn (1997, 531). See footnote 2 for a description of the actions prohibited by Article VIII.

<sup>16</sup> All member countries of the IMF are, in principle, committed to removing restrictions on the current account. However, upon joining the IMF countries are allowed to retain existing restrictions under Article XIV, which sanctions “transitional” arrangements for countries that are not prepared (or are unwilling) to accept sections 2, 3, and 4 of Article VIII. The IMF attempts to persuade transitional countries to join Article VIII, but some members remained under Article XIV for decades—the Philippines, for example, remained under Article XIV for 50 years (IMF 2006). The Executive Board of the Fund agreed in 1992 that the transitional arrangements had been abused and officials became more forceful in encouraging adoption of Article VIII. It is important to note that once a country notifies the Fund of its acceptance of Article VIII obligations it gives up the right—in perpetuity—to retain existing or impose new current account restrictions. The Fund’s Executive Board has the ability, however, to approve short-term restrictions by Article VIII. The decisions by the Executive Board to approve temporary restrictions are confidential. However, as I discuss in detail below, I take steps to attempt to strip out possible “sanctioned renegars” from the analysis.

<sup>17</sup> 16 percent of all country-year observations in the sample are coded as noncompliant.

<sup>18</sup> For example, if a country was in default in each year from 1960 to 1980, *Percent Default* would take a value of 100 in 1980; if the country began to service its external debt in 1981, the value would decline to 95.2, and if it stayed current on its payments in the next year, the value would decline to 90.9 (since the country was in default for 20 of 22 years in the observation window), and so on.

Two other economic variables are included in the statistical analysis. Inflation is a sign of economic instability, and higher levels of inflation are expected to generate higher country risk ratings. The final economic variable in the analysis is trade openness, measured as imports plus exports as a percentage of GDP. Countries that are more open may benefit from better perceptions of creditworthiness, as trade openness represents a greater diversification against risks; on the other hand, highly open emerging market economies are also more vulnerable to terms of trade fluctuations.

Brewer and Rivoli note that political conditions are likely to be as important as economic conditions in explaining perceptions of country risk (1990, 357–69). To account for political conditions that may affect the measures of creditworthiness, I include three variables. The first is the types of government, measured using the Polity IV scores, which range from  $-10$  (fully autocratic) to  $+10$  (fully democratic). There are competing arguments about the relationship between democracy and sovereign risk. Proponents of the “democratic advantage” argue that since democracies face higher audience costs than autocracies, they are less likely to default on their sovereign debts; consequently, we would expect country risk scores to be lower in democracies (Schultz and Weingast 1998; Jensen 2003). Saiegh’s (2005) research, in contrast, shows that since democracies in the developing world are in fact more likely to reschedule their debts, there is no relationship between regime type and the cost of borrowing.

Governments’ policy preferences are another potentially confounding factor. Grieco et al. find that the frequency of noncompliance with Article VIII commitments strongly increased when there was a shift in preferences—measured by the ideological position of the government in power—to the left of the “configuration of national preferences that produced the original decision to sign Article VIII” (2009, 346).

It is important, then, to control for changes in ideological orientation that influence the commitment of the government to Article VIII obligations and affect investors’ perceptions of sovereign risk. Consequently, I include Grieco, Gelpi, and Warren’s *Shift Left* covariate in all specifications (see the [Appendix](#) for details on the construction of the variable).

The other political variable in the analysis concerns political stability. Archer et al. (2007) argue that political stability is more important for bond rating agencies’ risk assessment than regime type. Political instability is likely to cause observers to downgrade the creditworthiness scores for countries for a number of reasons. Stable countries are more likely to pursue consistent macroeconomic policies. A government’s capacity to repay debts depends on the ability to extract tax revenue; unstable governments are expected to have a lower extractive capacity than stable governments. Following Fearon and Laitin (2003), the *Instability* variable is coded 1 if the Polity IV regime type indicator changes (in either direction) by at least three points during a three-year period.

It is possible that governments that agree to and comply with Article VIII are in the midst of a broader program of economic liberalization. Since the 1980s, international financial institutions and private financial actors have pressured the governments of low- and middle-income countries to pursue reforms (such as tariff reductions, opening of financial markets, tax reform, and privatization of

state-owned enterprises), ostensibly in the interest of better economic performance. I expect that markets will reward governments in a liberalization episode with lower risk assessments and better access to investment capital.<sup>19</sup> If liberalization efforts covary with Article VIII compliance, failure to properly account for policy reform will overstate the independent effect of compliance on perceptions of creditworthiness. I include a policy reform variable to mitigate this possibility. The indicator I use in the analysis is a dichotomous measure of economic openness first developed by Sachs and Warner (1995) and improved and extended by Wacziarg and Welch (2003, 2008).

To account for the possibility that short-term economic problems are correlated with a government's decision to violate Article VIII *and* perceptions of investment risk in the country, I include a variable that equals 1 if a country is under an IMF lending program and 0 otherwise. The effect of this variable on sovereign risk ratings depends on whether market participants think the IMF can enforce a transition from bad to good policies or, alternatively, whether they view programs as having little credibility and a possible sign of deeper economic problems in the near term.<sup>20</sup> Similarly, countries that are in the midst of a currency crisis might apply short-term restrictions to the current account and suffer increasing risk scores. I incorporate a covariate to account for the impact of dramatic events in the exchange market. The *currency crisis* indicator comes from Laeven and Valencia (2008); it takes a value of one in the year in which a country experiences a nominal devaluation of at least 30% that is also at least a 10% hike in the rate of depreciation compared to the previous year.<sup>21</sup>

Summary statistics, drawn from the samples based on the most expansive models of the determinants of sovereign risk ratings, are presented in Tables 1 and 2.

### 4.3 Methodology

I estimate several different models of the impact of compliance with the Article VIII agreement on creditworthiness, of the basic form:

$$Y_{it} = \alpha_i + \beta_1 \text{ARTICLEVIII}_{it} + \beta_2 \text{RESTRICTION}_{it} + \beta_3 \text{NONCOMPLIANCE}_{it} + \gamma \mathbf{X}_{it} + \mu_{it}$$

where  $i$  indexes countries,  $t$  indexes time,  $\beta_1$ ,  $\beta_2$  and  $\beta_3$  are the main explanatory variables of interest, the vector  $\mathbf{X}$  includes the economic and political control variables, and  $\mu$  is the error term.

Pooled data from multiple countries observed over a number of years can cause problems when analysts attempt to apply the standard linear regression model. Panel heteroskedasticity (individual countries have their own error variances) and

<sup>19</sup> Biglaiser and DeRouen's analysis of sovereign bond ratings in Latin America tests the effects of indexes of trade and capital market liberalization, financial liberalization, tax reform, and privatization. The results show that trade reform is the only variable that has a strong (positive) effect on perceptions of creditworthiness (Biglaiser and DeRouen 2007).

<sup>20</sup> The debate on the "catalytic" effect of IMF loans is extensive; see, for example, Bordo et al. (2004); Jensen (2004).

<sup>21</sup> Laevan and Valencia (2008) update the measure of currency crisis originally developed by Frankel and Rose (1996).

**Table 1** Summary statistics (based on estimation sample for model 1 in Table 5)

Variable	Observations	Mean	Std. Dev.	Minimum	Maximum
<i>Institutional Investor</i> rating	1,102	72.01	14.43	26.2	95.7
Article VIII $t_{-1}$	1,102	0.36	0.48	0	1
Restriction $t_{-1}$	1,102	0.66	0.47	0	1
Noncompliance $t_{-1}$	1,102	0.18	0.38	0	1
Reserves/debt $t_{-1}$	1,102	22.98	57.28	0.01	662.55
BOP/GDP $t_{-1}$	1,102	-4.68	7.38	-44.84	38.18
Debt/GNI $t_{-1}$	1,102	75.70	88.45	2.54	1,209.30
GDP growth $t_{-1}$	1,102	0.85	5.39	-30.9	34.63
GDP per capita $t_{-1}$	1,102	1,562.8	1,461.99	84.74	7,894.37
Inflation $t_{-1}$	1,102	106.71	721.22	-14.94	14,315.8
Regime type $t_{-1}$	1,102	0.04	7.09	-10	10
Political Instability $t_{-1}$	1,102	0.21	0.40	0	1
Trade openness $t_{-1}$	1,102	60.78	32.12	6.32	192.11
% Years in Default	1,102	16.12	17.04	0	100
Openness $t_{-1}$	1,102	0.37	0.48	0	1
IMF program $t_{-1}$	1,102	0.57	0.49	0	1
Currency Crisis $t_{-1}$	1,102	0.07	0.26	0	1
Shift Left	1,102	0.06	0.25	0	1

**Table 2** Summary statistics (based on estimation sample for model 3 in Table 5)

Variable	Observations	Mean	Std. Dev.	Minimum	Maximum
<i>Euromoney</i> rating	1,032	61.73	16.31	14.55	96
Article VIII $t_{-1}$	1,032	0.37	0.48	0	1
Restriction $t_{-1}$	1,032	0.68	0.46	0	1
Noncompliance $t_{-1}$	1,032	0.19	0.39	0	1
Reserves/debt $t_{-1}$	1,032	22.65	59.18	0.01	662.55
BOP/GDP $t_{-1}$	1,032	-4.94	8.04	-45.96	38.18
Debt/GNI $t_{-1}$	1,032	87.26	107.41	2.54	1,209.30
GDP growth $t_{-1}$	1,032	0.70	5.58	-30.9	34.63
GDP per capita $t_{-1}$	1,032	1,526.4	1,447.8	84.74	7,894.37
Inflation $t_{-1}$	1,032	113.65	640.58	-13.01	11,749.63
Trade openness $t_{-1}$	1,032	64.44	36.39	6.32	282.40
Regime type $t_{-1}$	1,032	0.40	7.04	-10	10
Political Instability $t_{-1}$	1,032	0.21	0.41	0	1
% Years in Default	1,032	16.94	17.04	0	100
Openness $t_{-1}$	1,032	0.41	0.49	0	1
IMF program $t_{-1}$	1,032	0.59	0.49	0	1
Currency Crisis $t_{-1}$	1,032	0.08	0.27	0	1
Shift Left	1,032	0.06	0.23	0	1

contemporaneous correlation of errors (cross-national phenomena such as financial crises that cause one country's errors to be correlated with the errors of other countries) generate biased estimation of standard errors if left uncorrected; to account for this problem, I estimate panel corrected standard errors in the models (Beck 2001). Serial correlation of errors is another problem endemic to time series data, and the Wooldridge test for autocorrelation indicates that this is indeed a problem in my data.<sup>22</sup> Consequently, I estimate Prais-Winsten coefficients with a panel-specific AR(1) correction in each of the models.

A third potential problem with pooled cross-sectional time-series data is unit-specific heterogeneity (unobserved country-specific effects). The solution to this problem is to estimate models with country fixed effects. The solution, however, can be costly and inefficient: we lose cross-national variation, and cannot estimate the effects of variables that are relatively time-invariant (Article VIII accession and default history, for example) with certainty. For this reason I do not include country fixed effects in the models reported in the next section.<sup>23</sup>

## 5 Discussion of Results

Before reporting the results of the statistical analysis, I present some simple descriptive statistics in the tables below. Tables 3 and 4 display the mean *Institutional Investor* and *Euromoney* values as the legal commitments and application of current account restrictions vary, along with simple difference-of-means tests.

The first row in both Tables 3 and 4 shows that there is little difference in sovereign risk ratings for non-Article VIII countries that apply and do not apply current account restrictions. Countries that have signed Article VIII appear to have better reputations than countries that have not signed: the average risk rating for signatories is about 10 points lower than for non-signatories, and the difference is statistically significant. While the ability to generalize from a set of descriptive statistics is limited, the values in the bottom rows in the two tables are striking: developing states that have signed but are non-compliant with Article VIII have an average country risk score that is about 15 points worse than states that are compliant with Article VIII.

<sup>22</sup> The Wooldridge test for autocorrelation is implemented in Stata 11.0 through the *xtserial* command (Drukker 2003; Wooldridge 2002).

<sup>23</sup> My interest in explaining differences between countries, the relative invariance of the key explanatory variables, and the fact that my data includes many more units (95 countries at most) than observations per unit (18 for panels without missing data on covariates) imply that the fixed effects estimator is inappropriate (Abrevaya 1997). Plümpner and Troeger (2007) propose a solution (the fixed effects vector decomposition estimator) that “allows estimating time-invariant variables and that is more efficient than the FE model in estimating variables that have very little longitudinal variance” (2007, 125). When I re-estimated the models in Table 5 with Plümpner and Troeger’s *xtfevd* routine in Stata 11, I obtained very similar findings; in fact, the coefficient on the *noncompliance* variable is slightly larger in both the fixed effects vector decomposition regressions and OLS regressions with standard errors that assume clustering by country (due to space considerations, the additional results are not reported here, but are available in the online Appendix that supplements the electronic version of this article).

**Table 3** Average *Institutional Investor* ratings, 1979–1997

Legal commitment	Average <i>Institutional Investor</i> rating		
	Yes (# obs.)	No (# obs.)	T-stat for diff. of means ( <i>p</i> -value)
Non-Article VIII countries, apply restrictions?	74.59 (760)	73.10 (236)	1.41 (0.16)
Article VIII signatory?	64.32 (649)	74.24 (996)	11.91 (0.0000)
Article VIII signatories, apply restriction?	73.93 (283)	56.88 (366)	12.21 (0.0000)

Table 5 displays the results from statistical models of the determinants of sovereign risk, using both the *Institutional Investor* and *Euromoney* ratings as dependent variables. Most of the covariates are lagged by one year to account for simultaneity. I lag each of the main variables of interest (*Article VIII*, *Restriction*, and *Noncompliance*) by 1 and 3 years for two reasons: to mitigate the possibility that the decision by governments to comply reflects an attempt to influence ratings, and to account for the possibility that a worsening rating might make governments more likely to violate the agreement.

Many of the variables exhibit their predicted effects on perceptions of sovereign risk.<sup>24</sup> Starting with the economic variables, the measure of leverage (debt/GNI) has a positive and significant effect in three of the specifications. However, the other economic measures of debt sustainability (the ratio of foreign reserves to debt and the balance-of-payments position) are weaker predictors of sovereign risk ratings: better reserves/debt ratio is linked to lower IIR, but is not associated with an improvement in *Euromoney* ratings, and the current account balance is insignificant in every specification. On the other hand, an historical record marred by default on sovereign debt is particularly damaging to market actors' perceptions of country risk.<sup>25</sup> The impact is powerful: increasing the default measure by 34 points (an increase that corresponds to a jump from the mean value (16–17%) to a country that spent half the years since 1960 in default) leads, on average, to an 11.5 point spike in the *Institutional Investor* rating and a 5 point increase in the *Euromoney* score. Increasing the level of economic development also has a consistently powerful effect on perceptions of risk: for each one standard deviation increase in GDP per capita, sovereign risk ratings decline by four to six points, depending on the rating used. Economic growth is negatively related to the measures of risk perception, but is only significant in the models in which the key explanatory variables are lagged by one year (columns 1 and 3). The continuous measure of trade openness is positively signed in all models and significant in three of them, but the substantive impact is relatively minor (a one standard deviation increase corresponds to less than a single point increase in both the IIR and *Euromoney* variables).

<sup>24</sup> Recall that the dependent variables have been re-scaled so that positive coefficients indicate greater country risk.

<sup>25</sup> The finding is consistent with Reinhart et al.'s (2003) contention that defaults in the past make countries more likely to default on their foreign debts in the future, regardless of the level of indebtedness. This result is also consistent with Archer et al.'s (2007) finding that bond ratings are strongly negatively affected by a history of default.

**Table 4** Average *Euromoney* ratings, 1982–1997

Legal commitment	Average <i>Euromoney</i> rating		
	Yes (# obs.)	No (# obs.)	T-stat for diff. of means ( <i>p</i> -value)
Non-Article VIII countries, apply restrictions?	65.03 (670)	67.20 (184)	1.67 (0.10)
Article VIII signatory?	54.72 (621)	65.50 (854)	11.59 (0.0000)
Article VIII signatories, apply restriction?	62.53 (287)	48.01 (334)	9.66 (0.0000)

The effect of the regime type variable highlights differences in the measures of sovereign risk. In line with the results reported by Saiegh (2005) and Archer et al. (2007), democratic countries do not seem to experience any advantages over autocracies with respect to *Institutional Investor* ratings; on the other hand, the claims made by “democratic advantage” proponents are borne out by the significant negative relationship between the Polity score and the *Euromoney* measure. A 20 point shift in the Polity score (corresponding to a transition from full autocracy to full democracy) is associated with a 4–5 point reduction in the *Euromoney* risk rating. Likewise, political instability does not exhibit consistent effects on perceptions of creditworthiness: while the coefficient for this variable is large in the *Euromoney* models, it is an unimportant determinant of countries’ IIR. The *Shift Left* variable also displays findings that depend on the type of creditworthiness rating used. While a leftward partisan shift is associated with an increase in the IIR, there is no clear link with changes in the *Euromoney* score.

A transition from closure to economic openness, on the other hand, consistently improves risk ratings by between three and six points. The association between market actors’ perceptions of creditworthiness and IMF lending programs, however, moves in the opposite direction—a country that takes a loan in the previous year can expect about a one point increase in sovereign risk ratings. Similarly, countries experiencing speculative attacks on the currency are likely to suffer worsening perceptions of credibility.

My primary interest in the article is examining the effect of international agreements on perceptions of country risk, and the results are powerful confirmation that international law is important to market actors. Controlling for many different economic and political factors, the results in Table 5 show that governments that sign Article VIII benefit in the short-term from improved assessments of creditworthiness. This suggests that accepting Article VIII obligations functions as a credible signal to markets that a government has committed to stable, open economic policies. However, the interpretation of the substantive effects of interaction terms is not straightforward. Unlike additive coefficients, for which one can make statements about the impact of a variable on an outcome *in general*, the coefficients for terms in interactive models are *conditional* (Braumoeller 2004; Friedrich 1982). In this case, the coefficient on *Article VIII* indicates that signing the agreement lowers sovereign risk ratings by four to six points when *Restriction* = 0. The results in Table 5 illustrate further that, for the subset of observations that are not Article VIII signatories, applying restrictions to the current account has a negligible effect on sovereign risk.



**Table 5** Determinants of sovereign risk ratings

Independent variables	DV: <i>Institutional Investor</i> rating		DV: <i>Euromoney</i> rating	
	(1) 1-year lag	(2) 3-year lag	(3) 1-year lag	(4) 3-year lag
Article VIII $t_{-1,3}$	-4.690 <sup>c</sup> (0.986)	-3.994 <sup>b</sup> (1.346)	-5.352 <sup>c</sup> (1.440)	-1.086 (1.603)
Restriction $t_{-1,3}$	-0.410 (0.687)	-1.470 <sup>a</sup> (0.515)	-0.400 (1.173)	-2.106 <sup>a</sup> (1.065)
Noncompliance $t_{-1,3}$	3.113 <sup>c</sup> (0.959)	3.665 <sup>b</sup> (1.222)	6.192 <sup>c</sup> (1.770)	6.778 <sup>b</sup> (2.183)
Reserves/debt $t_{-1}$	-0.019 <sup>a</sup> (0.008)	-0.030 <sup>c</sup> (0.007)	-0.002 (0.012)	0.003 (0.013)
BOP/GDP $t_{-1}$	-0.010 (0.022)	-0.027 (0.022)	-0.038 (0.050)	-0.056 (0.052)
Debt/GNI $t_{-1}$	0.005 (0.003)	0.006 <sup>a</sup> (0.003)	0.016 <sup>c</sup> (0.004)	0.017 <sup>c</sup> (0.004)
GDP growth $t_{-1}$	-0.057 <sup>a</sup> (0.024)	-0.034 (0.021)	-0.164 <sup>b</sup> (0.057)	-0.085 (0.052)
GDP per capita $t_{-1}$	-0.004 <sup>c</sup> (0.0003)	-0.004 <sup>c</sup> (0.0003)	-0.003 <sup>c</sup> (0.004)	-0.004 <sup>c</sup> (0.0005)
Inflation $t_{-1}$	0.0003 (0.0002)	0.0002 (0.0001)	0.0001 (0.0004)	-0.0002 (0.0004)
Trade openness $t_{-1}$	0.030 <sup>a</sup> (0.014)	0.024 <sup>a</sup> (0.012)	0.032 <sup>a</sup> (0.014)	0.004 (0.013)
Regime type $t_{-1}$	-0.050 (0.038)	-0.034 (0.050)	-0.205 <sup>c</sup> (0.056)	-0.270 <sup>c</sup> (0.063)
Political instability $t_{-1}$	-0.375 (0.370)	-0.319 (0.378)	1.838 <sup>a</sup> (0.817)	1.849 <sup>a</sup> (0.806)
% Years in Default	0.337 <sup>c</sup> (0.049)	0.352 <sup>c</sup> (0.054)	0.154 <sup>c</sup> (0.044)	0.148 <sup>c</sup> (0.045)
Openness $t_{-1}$	-3.260 <sup>c</sup> (0.671)	-3.527 <sup>c</sup> (0.746)	-5.349 <sup>c</sup> (1.072)	-5.957 <sup>c</sup> (1.176)
IMF program $t_{-1}$	0.985 <sup>a</sup> (0.400)	1.134 <sup>b</sup> (0.364)	1.021 (0.651)	1.274 (0.666)
Currency Crisis $t_{-1}$	0.791 <sup>a</sup> (0.331)	0.879 <sup>a</sup> (0.340)	0.177 (0.766)	0.283 (0.755)
Shift Left	1.818 <sup>b</sup> (0.615)	1.189 (0.670)	-0.352 (1.473)	-1.479 (1.447)
Constant	77.60 <sup>c</sup> (1.788)	74.105 <sup>c</sup> (1.695)	64.266 <sup>c</sup> (2.031)	66.253 <sup>c</sup> (2.087)
Number of countries	80	79	94	93
No. of observations	1,102	1,073	1,032	999
$R^2$	0.97	0.96	0.90	0.89
Wald $\chi^2$	410.33	776.72	415.19	333.57
Probability > $\chi^2$	0.0000	0.0000	0.0000	0.0000

Panel corrected standard errors in parentheses below Prais-Winsten coefficients

<sup>a</sup> significant at 10%

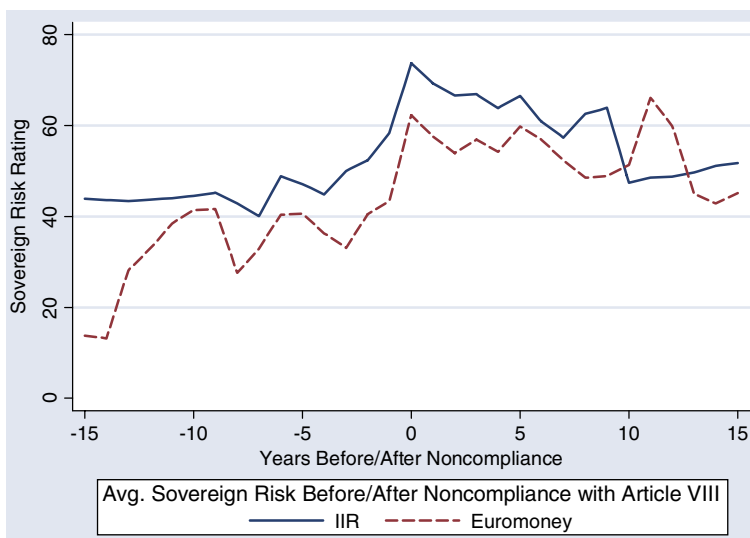
<sup>b</sup> significant at 5%

<sup>c</sup> significant at 1% level and below

The central mechanism in Simmons' work on compliance with Article VIII is that renegeing on agreements involves reputational costs: noncompliant governments jeopardize their reputations as trustworthy partners, which reduces access to investment and other economic activity. I argue that examining sovereign risk is a good way of capturing the reputational effects of noncompliance, since sovereign risk assessments reflect international investors' perceptions of the quality of a country's investment climate. Are countries that sign Article VIII and break the agreement by adding restrictions to the current account punished by markets for the transgression? The results of the statistical analysis show that noncompliance with Article VIII obligations significantly increases sovereign risk. Straightforward interpretation of the results indicate that countries that fail to comply with their public agreement to avoid exchange restrictions experience a three point jump in the IIR and a six point increase in the *Euromoney* rating of sovereign risk. The substantive effect of interaction terms, as I mention above, is conditional: the results show that the beneficial effects of being a signatory to Article VIII are washed away by noncompliance. Applying restrictions to the current account reduces the impact of Article VIII accession by three to four points when *Institutional Investor* scores are the dependent variables and between six and seven points using *Euromoney* ratings.

Additionally, the tendency for markets to punish countries that renege extends beyond the period immediately following a noncompliance episode: the *noncompliance* coefficient is positive and highly significant in models with one- and three-year time lags. The finding is particularly interesting in light of the diminishing returns to signing Article VIII: while signatories that do not apply any current account restrictions experience decreases of four to six points in risk scores in the year following accession, the beneficial effect enervates over time.

The relationship between noncompliance and sovereign risk is demonstrated even more clearly in Fig. 1. The figure is constructed by counting the number of years



**Fig. 1** Average sovereign risk ratings before/after noncompliance episodes

until the first noncompliance episode from the year of acceptance of Article VIII (or from 1970 if a country accepted the agreement prior to that year), and then counting the number of years after the end of a noncompliance episode. I then take the average IIR and *Euromoney* rating for each year before/after a noncompliance episode. Periods of noncompliance with Article VIII equals year zero in the figure.

The figure illustrates how compliance with international agreements influences perceptions of sovereign risk. Risk ratings increase slightly in the five years preceding noncompliance, then jump significantly between the year preceding and the onset of a noncompliance episode. The average *Institutional Investor* rating increases from 58.32 in the year preceding noncompliance to 73.75; noncompliance increases the average *Euromoney* rating by nearly 19 points (from 43.42 in the year prior to noncompliance to 62.27). That noncompliance has lasting reputational effects is also apparent: the average sovereign risk ratings declines back to the level immediately preceding a noncompliance period only after about 10 years of renewed compliance with Article VIII obligations. It takes time for governments after a violation to convince markets that they are committed to predictable, open economic policies.

### 5.1 Robustness Checks

In this section I present a set of tests to illustrate the robustness of the link between noncompliance with Article VIII obligations and countries' reputations for creditworthiness. The first test considers selection effects. Countries are not randomly assigned to Article VIII; if states that sign Article VIII are systematically different from non-Article VIII countries in ways that are not captured by the variables included in Table 5, my estimates of the effect of noncompliance will be biased.<sup>26</sup> As a preliminary check I present the results from a two-stage Heckman selection model.<sup>27</sup> In the first stage I include a set of variables based on Simmons' (2000b) analysis of the determinants of Article VIII acceptance to predict whether a country will become an Article VIII signatory. The selection stage includes two variables (*Regional Norm* and *Universality*) that measure the proportion of IMF members that adhere to Article VIII at the regional and global level.<sup>28</sup> The second stage provides selection-corrected OLS estimates of the impact of different variables on the outcomes of interest. The results of the Heckman model are displayed in Table 6.

In the selection stage I find that the main factor influencing a country's decision to accept Article VIII is whether regional competitors are also signatories; the measures

<sup>26</sup> Non-random selection is at the core of the debate between Simmons and Hopkins (2005) and von Stein (2005). They are interested in the question of whether Article VIII has an independent effect on state behavior, which is a very different question from the one I ask here, and which makes selection processes a much more pressing concern in their debate.

<sup>27</sup> I only report the results from the selection models and additional robustness checks with one-year lags for the variables on the right hand side; full results for models including the three-year lags, as in Table 5, are available in the online Appendix to this article.

<sup>28</sup> Note that the *Shift Left* variable is omitted from the first stage because, by construction, it is related to Article VIII status: to capture shifts in government partisanship away from the constellation of interests that produced the decision to sign the agreement, it takes a value of 1 if a country has accepted Article VIII obligations and the ideological makeup of the government subsequently moves to the left.

**Table 6** Selection models of determinants of sovereign risk ratings

Independent variables	DV: Article VIII	DV: <i>Institutional Investor</i> rating	DV: Article VIII	DV: <i>Euromoney</i> rating
	(1) Probit, selection stage	(2) Second-stage OLS	(3) Probit, selection stage	(4) Second-stage OLS
Regional norm	0.046 <sup>c</sup> (0.006)		0.042 <sup>c</sup> (0.005)	
Universality	0.011 (0.008)		0.020 <sup>a</sup> (0.009)	
Article VIII <sub>t-1</sub>		-5.879 <sup>a</sup> (2.785)		-2.252 (3.005)
Restriction <sub>t-1</sub>		-4.178 (3.533)		-5.024 (3.204)
Noncompliance <sub>t-1</sub>		9.655 <sup>a</sup> (3.552)		11.971 <sup>c</sup> (3.484)
Reserves/debt <sub>t-1</sub>	-0.0007 (0.001)	0.002 (0.009)	-0.001 (0.001)	0.0008 (0.012)
BOP/GDP <sub>t-1</sub>	-0.008 (0.010)	-0.083 (0.109)	-0.002 (0.011)	-0.136 (0.119)
Debt/GNI <sub>t-1</sub>	0.0007 (0.001)	0.0005 (0.005)	0.001 (0.001)	0.015 (0.009)
GDP growth <sub>t-1</sub>	-0.005 (0.010)	-0.458 <sup>a</sup> (0.174)	-0.009 (0.011)	-0.790 <sup>c</sup> (0.148)
GDP per capita <sub>t-1</sub>	0.0001 (0.0001)	-0.004 <sup>c</sup> (0.0007)	0.0001 (0.0001)	-0.003 <sup>c</sup> (0.0008)
Inflation <sub>t-1</sub>	-0.00007 (0.00007)	0.0004 (0.0004)	-0.0001 (0.0001)	-0.0001 (0.0009)
Trade openness <sub>t-1</sub>	0.016 <sup>b</sup> (0.005)	-0.023 (0.042)	0.014 <sup>b</sup> (0.005)	-0.011 (0.037)
Regime type <sub>t-1</sub>	0.023 (0.023)	-0.047 (0.148)	0.029 (0.022)	-0.045 (0.169)
Political instability <sub>t-1</sub>	0.003 (0.228)	1.611 (2.148)	-0.153 (0.226)	2.512 (2.472)
% Years in Default	0.001 (0.011)	0.414 <sup>c</sup> (0.076)	0.002 (0.011)	0.288 <sup>c</sup> (0.074)
Openness <sub>t-1</sub>	0.006 (0.253)	-10.195 <sup>c</sup> (1.759)	0.100 (0.238)	-11.866 <sup>c</sup> (1.651)
IMF program <sub>t-1</sub>	0.152 (0.206)	6.918 <sup>c</sup> (1.872)	0.133 (0.218)	6.993 <sup>c</sup> (2.037)
Currency Crisis <sub>t-1</sub>	-0.548 <sup>c</sup> (0.136)	1.170 (1.312)	-0.512 <sup>c</sup> (0.148)	0.227 (1.846)
Shift Left		0.709 (1.666)		-0.013 (2.416)
Constant	-4.599 <sup>c</sup>	76.176 <sup>c</sup>	-4.731 <sup>c</sup>	59.444 <sup>c</sup>

**Table 6** (continued)

Independent variables	DV: Article VIII	DV: <i>Institutional Investor</i> rating	DV: Article VIII	DV: <i>Euromoney</i> rating
	(1) Probit, selection stage	(2) Second-stage OLS	(3) Probit, selection stage	(4) Second-stage OLS
	(0.561)	(5.340)	(0.521)	(5.696)
$\lambda$	-0.109 (1.647)		2.957 (2.060)	
Observations	1,259 (437 uncensored)		1,242 (420 uncensored)	

OLS coefficients in columns (2) and (4) from two-stage Heckman selection model (robust standard errors adjusted for clustering by country in parentheses). Columns (1) and (3) display probit estimates from first stage

<sup>a</sup> significant at 10%

<sup>b</sup> significant at 5%

<sup>c</sup> significant at 1% level and below

of wealth, democracy, and openness to foreign trade are also positively related (though only *trade openness* reaches conventional levels of statistical significance). The first-stage results also indicate that currency crises are a deterrent to Article VIII accession.

More importantly, the results in Table 6 show that noncompliance harms states' reputations even when selection effects are taken into account. The *Noncompliance* coefficient is both substantively large and highly significant. It is possible, however, that the direction of causality runs from risk ratings to state behavior; that is, countries facing worsening perceptions of investment risk may be more inclined to violate the agreement. Likewise, governments that anticipate improvements in sovereign risk ratings may be more likely to sign and adhere to Article VIII. The lag structure employed in the estimations helps to mitigate the concerns about endogeneity, but as an additional test I employ an exogenous instrument for noncompliance.

Finding a good instrument requires identifying a variable that is highly correlated with the endogenous independent variable and uncorrelated with the disturbance term of the equation. Simmons suggests that a determinant of the decision to comply with Article VIII is the level of compliance in each country's region; the competitive pressure to attract foreign investment is strengthened (weakened) to the extent that similarly-placed countries adhere to (disregard) the agreement (Simmons 2000b, 828). I construct an instrument by counting the number of countries in country  $i$ 's region in each year that are noncompliant with Article VIII.<sup>29</sup> This variable is

<sup>29</sup> Regional definitions, following Simmons, come from the World Bank's regional classifications. The level of regional noncompliance should be relatively uncorrelated with a country's sovereign risk rating: it seems unlikely, for example, that market actors would incorporate information about Peru's compliance in developing risk assessments for Argentina. Evidence from research on compliance with transparency rules provides support: Glennerster and Shin (2007) examine whether adoption of IMF-led transparency reforms lowers sovereign bond spreads and find that regional adoption of transparency reforms has no effect on borrowing costs.

correlated with the original noncompliance variable ( $\rho=0.54$ ) but rather weakly related to the measures of sovereign risk ( $\rho=0.17$  for IIR and  $\rho=0.15$  for *Euromoney*).

Because one of the endogenous variables is continuous and the other is dichotomous, I cannot estimate a conventional two-stage least squares instrumental regression (Keshk 2003). Instead I employ a two-stage probit least squares model.<sup>30</sup> In the first stage (not reported) I use the instrument to predict the value of *Noncompliance*; the second stage estimates a standard OLS model with the determinants of sovereign risk and the predicted values of the noncompliance variable included on the right hand side. Table 7 reports results that are robust to concerns about reverse causality. The strong positive effect of the noncompliance instrument indicates that the main findings are not driven by endogeneity.

The IMF sometimes approves temporary exchange restrictions by Article VIII countries. This raises a third potential objection, which is that I fail to distinguish between “true” renegers and cases in which short-term violations have been approved by the IMF. Article VIII countries have the ability to appeal violations identified by IMF staff in Article IV consultations and reviews of lending programs for temporary approval by the Executive Board. Indeed, Section VII 3(b) of the Fund’s *Articles of Agreement* allows signatories to temporarily impose current restrictions when the member is suffering a currency crisis. Information on decisions to grant or deny approval of restrictions is maintained in confidential Executive Board documents. Because these documents are confidential, we would not necessarily expect international investors to be able to distinguish true violators from IMF-sanctioned renegers. However, because approval of temporary restrictions are generally limited to countries that are buffeted by a financial crisis and/or under active IMF lending programs, we can attempt to strip out the approved cases by analyzing subsamples of countries that do not have IMF lending programs or are not in the throes of a crisis. Table 8 reports findings from tests of the determinants of sovereign risk for the non-IMF program and non-currency crisis subsamples. The results confirm that noncompliance with Article VIII has a strong positive effect on risk assessments.

The decision taken by the IMF’s Executive Board in 1992 to pursue a tougher line on countries maintaining restrictions under Article XIV’s transitional arrangements makes the post-1992 period somewhat unusual. In 1993 only about 50% of members were signatories of Article VIII; by 2006, the proportion of Article VIII members reached nearly 90%. This suggests the possibility that the results are driven by an unusual period in the IMF’s history. In Table 9 I report the findings from models in which the observations after 1991 are omitted; due to space considerations I only report the results of the models with the one-year lags of the main independent variables. The evidence shows that the main set of results presented in Table 5 are not driven by the unusual upsurge in Article VIII acceptance during the 1990s. The effect of noncompliance, in fact, is considerably *stronger* for the truncated period.

<sup>30</sup> This is implemented in Stata 11 via the `cdsimeq` command. The method reports correct standard errors when, in a system of simultaneous equations, one endogenous variable is continuous and the other is dichotomous. See Keshk (2003) for details.

**Table 7** Two-stage instrumental variable estimate of effect of noncompliance

Independent variables	DV: <i>Institutional Investor</i> rating	DV: <i>Euromoney</i> rating
	(1) Two-stage probit least squares	(2) Two-stage probit least squares
Article VIII $t_{-1}$	-14.471 <sup>c</sup> (3.431)	-17.509 <sup>c</sup> (3.794)
Restriction $t_{-1}$	-9.102 <sup>c</sup> (2.672)	-10.802 <sup>c</sup> (2.931)
Noncompliance (instr.)	5.460 <sup>c</sup> (1.130)	7.213 <sup>c</sup> (1.310)
Reserves/debt $t_{-1}$	-0.011 (0.010)	-0.010 (0.012)
BOP/GDP $t_{-1}$	-0.049 (0.089)	-0.068 (0.105)
Debt/GNI $t_{-1}$	0.015 <sup>a</sup> (0.007)	0.018 <sup>a</sup> (0.008)
GDP growth $t_{-1}$	-0.316 <sup>b</sup> (0.108)	-0.512 <sup>c</sup> (0.125)
GDP per capita $t_{-1}$	-0.003 <sup>c</sup> (0.0004)	-0.003 <sup>c</sup> (0.0005)
Inflation $t_{-1}$	0.0003 (0.0009)	0.0009 (0.001)
Trade openness $t_{-1}$	0.014 (0.019)	0.032 (0.021)
Regime type $t_{-1}$	-0.224 <sup>a</sup> (0.096)	-0.323 <sup>b</sup> (0.115)
Political instability $t_{-1}$	3.327 <sup>a</sup> (1.413)	5.679 <sup>a</sup> (1.697)
% Years in Default	0.242 <sup>c</sup> (0.038)	0.149 <sup>c</sup> (0.046)
Openness $t_{-1}$	-5.237 <sup>c</sup> (1.251)	-7.092 <sup>c</sup> (1.485)
IMF program $t_{-1}$	4.851 <sup>c</sup> (1.120)	3.891 <sup>a</sup> (1.430)
Currency Crisis $t_{-1}$	-0.048 (2.119)	0.007 (2.421)
Shift Left	1.036 (2.139)	0.322 (2.665)
Constant	89.449 <sup>c</sup> (4.957)	83.496 <sup>c</sup> (5.364)
Number of observations	1,102	1,031

OLS coefficients from second stage reported (standard errors in parentheses)

<sup>a</sup> significant at 10%

<sup>b</sup> significant at 5%

<sup>c</sup> significant at 1% level and below



**Table 8** Compliance and sovereign risk (split samples)

Independent variables	DV: <i>Institutional Investor</i> rating		DV: <i>Euromoney</i> rating	
	(1) IMF program cases omitted	(2) Crisis cases omitted	(3) IMF program cases omitted	(4) Crisis cases omitted
Article VIII $t_{-1}$	-4.879 <sup>b</sup> (1.605)	-3.810 <sup>c</sup> (0.954)	-4.253 <sup>b</sup> (1.554)	-5.762 <sup>c</sup> (1.349)
Restriction $t_{-1}$	-0.389 (1.054)	-0.124 (0.643)	-1.004 (1.715)	0.061 (1.169)
Noncompliance $t_{-1}$	4.360 <sup>c</sup> (1.321)	2.361 <sup>b</sup> (0.875)	6.337 <sup>a</sup> (2.503)	5.897 <sup>c</sup> (1.715)
Reserves/debt $t_{-1}$	-0.011 (0.009)	-0.017 <sup>a</sup> (0.007)	0.005 (0.010)	-0.004 (0.007)
BOP/GDP $t_{-1}$	-0.016 (0.043)	-0.019 (0.020)	-0.058 (0.066)	-0.044 (0.046)
Debt/GNI $t_{-1}$	-0.005 (0.004)	0.014 <sup>c</sup> (0.004)	0.001 (0.007)	0.019 <sup>c</sup> (0.005)
GDP growth $t_{-1}$	-0.075 (0.045)	-0.038 (0.022)	-0.238 <sup>b</sup> (0.078)	-0.203 <sup>c</sup> (0.060)
GDP per capita $t_{-1}$	-0.007 <sup>c</sup> (0.0008)	-0.004 <sup>c</sup> (0.0003)	-0.003 <sup>b</sup> (0.0008)	-0.003 <sup>c</sup> (0.0004)
Inflation $t_{-1}$	0.0001 (0.0003)	0.0001 (0.0002)	0.0008 (0.001)	0.0002 (0.0003)
Trade openness $t_{-1}$	0.105 <sup>c</sup> (0.017)	0.020 (0.013)	0.075 <sup>a</sup> (0.027)	0.024 (0.015)
Regime type $t_{-1}$	0.208 <sup>a</sup> (0.087)	0.016 (0.046)	-0.245 <sup>a</sup> (0.113)	-0.177 <sup>c</sup> (0.052)
Political instability $t_{-1}$	0.205 (0.890)	-0.110 (0.363)	5.334 <sup>c</sup> (1.611)	1.950 <sup>a</sup> (0.803)
% Years in Default	0.446 <sup>c</sup> (0.053)	0.291 <sup>c</sup> (0.041)	0.292 <sup>c</sup> (0.073)	0.163 <sup>c</sup> (0.042)
Openness $t_{-1}$	-7.182 <sup>c</sup> (1.046)	-3.465 <sup>c</sup> (0.751)	-11.288 <sup>c</sup> (1.719)	-5.418 <sup>c</sup> (1.161)
Currency Crisis $t_{-1}$	1.337 (1.298)		-0.480 (1.501)	
Shift Left	3.040 (1.710)	1.535 <sup>a</sup> (0.648)	4.246 (2.538)	-0.453 (1.618)
Constant	72.325 <sup>c</sup> (2.292)	74.952 <sup>c</sup> (1.872)	60.470 <sup>c</sup> (3.873)	65.654 <sup>c</sup> (1.960)
Number of countries	67	80	77	95
Number of obs.	458	1,027	415	961
R <sup>2</sup>	0.97	0.96	0.93	0.92
Wald $\chi^2$	658.22	348.92	946.49	273.53
Probability > $\chi^2$	0.0000	0.0000	0.0000	0.0000

Panel corrected standard errors in parentheses below Prais-Winsten coefficients

<sup>a</sup> significant at 10%

<sup>b</sup> significant at 5%

<sup>c</sup> significant at 1% level and below

**Table 9** Article VIII compliance and sovereign risk, 1979–1991

Independent variables	DV: <i>Institutional Investor</i> rating	DV: <i>Euromoney</i> rating
Article VIII $t-1$	-2.159 (1.179)	-4.480 <sup>a</sup> (2.012)
Restriction $t-1$	-0.586 (0.638)	-0.674 (1.308)
Noncompliance $t-1$	6.856 <sup>c</sup> (1.934)	13.247 <sup>c</sup> (2.935)
Reserves/debt $t-1$	-0.041 <sup>c</sup> (0.011)	-0.015 (0.023)
BOP/GDP $t-1$	-0.045 (0.026)	-0.056 (0.075)
Debt/GNI $t-1$	0.002 (0.003)	-0.001 (0.007)
GDP growth $t-1$	-0.056 <sup>a</sup> (0.027)	-0.148 (0.083)
GDP per capita $t-1$	-0.005 <sup>c</sup> (0.0004)	-0.003 <sup>c</sup> (0.0005)
Inflation $t-1$	0.00006 (0.0001)	-0.0003 (0.0004)
Trade openness $t-1$	0.030 (0.017)	0.045 <sup>a</sup> (0.020)
Regime type $t-1$	-0.146 <sup>b</sup> (0.052)	-0.236 <sup>a</sup> (0.097)
Political instability $t-1$	-0.495 (0.534)	1.715 (1.467)
% Years in Default	0.468 <sup>c</sup> (0.057)	0.231 <sup>c</sup> (0.065)
Openness $t-1$	-1.769 <sup>a</sup> (0.741)	-3.409 <sup>a</sup> (1.573)
IMF program $t-1$	1.164 <sup>a</sup> (0.473)	1.769 (0.967)
Currency Crisis $t-1$	1.257 <sup>b</sup> (0.445)	2.042 (1.147)
Shift Left	1.853 (0.958)	-0.133 (2.126)
Constant	71.085 <sup>c</sup> (1.735)	61.486 <sup>c</sup> (3.084)
Number of countries	64	68
Number of observations	707	575
$R^2$	0.96	0.85
Wald $\chi^2$	593.73	145.88
Probability > $\chi^2$	0.0000	0.0000

Panel corrected standard errors in parentheses below Prais-Winsten coefficients

<sup>a</sup> significant at 10%

<sup>b</sup> significant at 5%

<sup>c</sup> significant at 1% level and below

## 6 Conclusion

Simmons concluded her 2000 *American Political Science Review* article by challenging researchers “to design projects that will better expose the mechanisms that enhance international law compliance” (Simmons 2000b, 832). The research reported here is an attempt to do just that: if compliance with international law is enforced by markets, we should see evidence that international investors care about whether states violate the agreements they sign. Examining the determinants of sovereign risk assessments over a large number of countries showed that noncompliance with international law has real consequences: states that accept Article VIII status and subsequently apply restrictions suffer higher risk ratings. Reneging on Article VIII obligations wipes out any beneficial effects of the legal commitment on states’ reputations for creditworthiness. The findings buttress the claims, *contra* realism, that international law has a binding effect on state behavior by demonstrating that states have incentives to sign agreements and to comply with the obligations required by the law. The findings dovetail with other research in the institutionalist tradition that emphasizes how institutions help governments credibly commit to policies by raising the costs of policy switching. As Sobel notes, “investors struggle with their decisions in incomplete and asymmetric information environments replete with varying degrees of uncertainty about the investment context and prospective borrowers” (1999, 13–14). International market actors want to be reassured that governments will refrain from pursuing policies that interfere with market activities or are otherwise detrimental to economic performance. Interviews conducted by Biglaiser and DeRouen, Jr. with officials at the major credit rating agencies show that a central concern is whether governments will actually implement the reforms that they propose (2007, 132). Governments may promise to embark on a path of economic liberalization; however, it can be relatively easy for future governments to reverse the policy agenda, if pro-reform interest groups can be bought off or suppressed. Breaking an international agreement that commits a government to liberalization involves an additional cost—the reputation of the country as a trustworthy economic partner—as demonstrated by the results in this article. In addition, the reputational effects of noncompliance are long-lasting: on average, it takes ten years of compliance for a country to return to the perceived level of sovereign risk it had prior to a violation episode. The empirical results suggest that, in addition to improving economic and political conditions at home, governments in the developing world would improve their reputations for creditworthiness by signing and complying with international monetary agreements.

## Appendix A: Description of Variables and Data Sources

### Dependent Variables

**Institutional Investor rating:** ratings reported by *Institutional Investor*, compiled once yearly (either September or October). Ratings are based on survey responses provided by economists and sovereign risk analysts at leading global banks and securities firms. Responses are compiled, averaged across countries, and weighted by the publication’s perception of the bank’s credit analysis sophistication and global

prominence. Countries are scored on a scale from 0 (high risk)–100 (low risk), which is transformed in the article such that 0 (low risk) → 100 (high risk) to ease the interpretation of the coefficients reported in the analysis.

**Euromoney rating:** index of “country creditworthiness.” Ratings are based on analytical, credit, and market indicators. The ratings are based on polls of economists and political analysts supplemented by quantitative data such as debt ratios and access to capital markets. The overall country risk score derives from nine separate categories, each with an assigned weighting: (1) political risk (25% weighting)—the risk of non-payment or non-servicing of payment for goods or services, loans, trade-related finance and dividends, and the non-repatriation of capital; (2) economic performance (25% weighting)—based on GNP figures per capita and on results of Euromoney poll of economic projections; (3) debt indicators (10% weighting), including total debt stocks to GNP, debt service to exports, and current account balance to GNP; (4) debt in default or rescheduled (10% weighting)—scores are based on the ratio of rescheduled debt to debt stocks; (5) credit ratings (10% weighting)—nominal values are assigned to sovereign ratings from Moody’s, S&P and Fitch IBCA; (6) access to bank finance (5% weighting)—calculated from disbursements of private, long-term, unguaranteed loans as a percentage of GNP; (7) access to short-term finance (5% weighting); (8) access to capital markets (5% weighting)—heads of debt syndicate and loan syndications rate each country’s accessibility to international markets; (9) discount on forfeiting (5% weighting)—reflects the average maximum tenor for forfeiting and the average spread over riskless countries such as the US. The original ratings are transformed by (100—*Euromoney rating*) so that 0 (low risk) → 100 (high risk).

## Independent Variables

**Article VIII Signatory:** dummy variable denoting 1 where countries have accepted Article VIII of the IMF’s Articles of Agreement and 0 if the country is subject only to Article XIV transitional arrangements.<sup>31</sup>

**Restriction:** dichotomous variable denoting whether a country has imposed restrictions on payments in current account. This measure is taken from the IMF’s *Annual Report on Exchange Arrangements and Exchange Restrictions* (1967–1997).

**Noncompliance with Article VIII:** variable is an interaction term (current account restriction \* Article VIII signatory), where 1 equals noncompliance and 0 denotes compliance.<sup>32</sup>

**Reserves/debt:** Ratio of international reserves to total external debt.<sup>33</sup>

**BOP/GDP:** Current account balance (the sum of the credits less the debits arising from international transactions in goods, services, income, and current transfers; represents the transactions that add to or subtract from an economy’s stock of foreign financial items), measured in terms of GDP.<sup>34</sup>

**Debt/GNI:** Ratio of total external debt to gross national product.<sup>35</sup>

<sup>31</sup> Simmons (2000a, b).

<sup>32</sup> Simmons (2000a, b).

<sup>33</sup> World Bank, *Global Development Finance* CD-ROM (2003).

<sup>34</sup> World Bank, *Global Development Finance* CD-ROM (2003).

<sup>35</sup> World Bank, *Global Development Finance* CD-ROM (2003).

**GDP Per Capita:** Gross domestic product per capita, in constant \$US 1995 benchmark.<sup>36</sup>

**GDP Per Capita Growth:** Annual growth rate of GDP per capita.<sup>37</sup>

**Inflation:** consumer price index, annual percentage.<sup>38</sup>

**Trade openness:** the sum of exports and imports, as percentage of GDP.

**Regime type:** Polity2 measure, taken from the Polity IV project. The Polity2 democracy score computed by subtracting a measure of autocracy, AUTOC, from a measure of democracy, DEMOC; the score ranges from -10 (least democratic) to +10 (most democratic). The AUTOC and DEMOC scores are indexes of scores on different institutional factors (such as the competitiveness and openness of executive recruitment, constraints on the executive recruitment, competitiveness of political participation, etc.).<sup>39</sup>

**Political Instability:** indicator that is coded 1 if the Polity2 regime type measure changes (either increases or decreases) by at least three points during a three-year period.<sup>40</sup>

**Percent Years in Default:** a cumulative indicator that records the percentage of years since 1960 that a country was in default.<sup>41</sup>

**Openness:** an update of the Sachs and Warner openness indicator, the measure takes a value of 1 in periods of openness and 0 if the country is closed. A country is coded as closed if any of the following conditions hold: (1) the average unweighted tariff rate >40%; (2) the average core non-tariff barrier frequency on capital goods and intermediaries >40%; (3) the annual black market premium >20%; (4) the country has a functioning marketing board for a major export good; (5) a socialist economic system.<sup>42</sup>

**IMF:** variable equals 1 if a country is under an IMF lending program (standby arrangement, extended fund facility, structural adjustment facility, or enhanced structural adjustment facility) and 0 otherwise.<sup>43</sup>

**Currency Crisis:** variable takes the value of 1 in years in which a country experienced a currency crisis. Laeven and Valencia, building on Frankel and Rose's (1996) earlier effort, define a currency crisis "as a nominal depreciation of the currency of at least 30% that is also at least a 10% increase in the rate of depreciation compared to the year before" (2008: 6).

**Shift Left:** dichotomous measure that equals 1 in all country years in which the government in power is to the left of the government that initially signed the Article VIII agreement. In Grieco et al. (2009) coding, positions of governments along the ideological spectrum are drawn from the World Bank's Database of Political Institutions.<sup>44</sup> In the words of the authors that created the variable, *Shift Left* "represents the ideal test of whether shifts away from the configuration of national

<sup>36</sup> World Bank, *World Development Indicators* CD-ROM (2004).

<sup>37</sup> World Bank, *World Development Indicators* CD-ROM (2004).

<sup>38</sup> World Bank, *World Development Indicators* CD-ROM (2004).

<sup>39</sup> Monty Marshall and Keith Jagers, "Polity IV Project: Political Regime Characteristics and Regime Transitions, 1800–2002," Center for International Development and Conflict Management (CIDCM), <http://www.cidcm.umd.edu/inscr/polity>.

<sup>40</sup> Fearon and Laitin (2003).

<sup>41</sup> Ahlquist (2006).

<sup>42</sup> Wacziarg and Welch (2003, 2008). Expansion and improvement of trade openness measure developed in Sachs and Warner (1995).

<sup>43</sup> Vreeland (2003).

<sup>44</sup> Beck et al. (2001).

preferences that produced the original decision to sign Article VIII serve to condition the probability of compliance with the treaty” (Grieco et al. 2009: 346).

## Appendix B: List of Countries and Years of Article VIII Noncompliance, 1979–97

Country	Year of Article VIII Accession	Year(s) of Noncompliance
ALBANIA	–	–
ALGERIA	1997	1997
ANGOLA	–	–
ARGENTINA	1968	1983–93
ARMENIA	1997	–
AZERBAIJAN	–	–
BAHRAIN	1974	–
BANGLADESH	1995	1996–97
BELARUS	–	–
BENIN	1996	1996–97
BOLIVIA	1967	1982–86; 1996–97
BOTSWANA	1995	1995–96
BRAZIL	–	–
BULGARIA	–	–
BURKINA FASO	1996	1996–97
BURUNDI	–	–
CAMEROON	1996	1996–97
CENTRAL AFRICAN REPUBLIC	1996	1996–97
CHAD	1996	1996–97
CHILE	1977	1983–97
CHINA	1996	1996–97
COLOMBIA	–	–
REPUBLIC OF CONGO	1996	1996–97
COSTA RICA	1965	1982–95
CROATIA	1995	1995
CZECH REPUBLIC	1994	1994
DEM. REP. OF CONGO	–	–
DOMINICAN REPUBLIC	1953	1979–97
ECUADOR	1970	1983–94
EGYPT	–	–
EL SALVADOR	1946	1979–93
ESTONIA	1994	–
ETHIOPIA	–	–
FIJI	1973	1989–92; 1996–97
GABON	1996	1996–97

Country	Year of Article VIII Accession	Year(s) of Noncompliance
GAMBIA	1993	–
GEORGIA	1997	1997
GHANA	1995	1997
GUATEMALA	1947	1981–89; 1995
GUINEA BISSAU	1997	1997
GUINEA	1996	1996–97
GUYANA	1967	1979–93
HAITI	1954	–
HONDURAS	1951	1982–93
HUNGARY	1996	–
INDIA	1995	1995–97
INDONESIA	1989	–
IRAN	–	–
ISRAEL	1994	1996–97
IVORY COAST	1996	1996–97
JAMAICA	1963	1979–95
JORDAN	1995	1995–96
KAZAKHSTAN	1996	1996–97
KENYA	1995	1995
KOREA, SOUTH	1989	1996–97
KUWAIT	1963	–
KYRGYZSTAN	1995	–
LATVIA	1995	–
LEBANON	1994	–
LESOTHO	–	–
MACEDONIA	–	–
MADAGASCAR	1996	1996
MALAWI	1996	1996–97
MALAYSIA	1969	–
MALI	1996	1996–97
MAURITANIA	–	–
MAURITIUS	1994	–
MEXICO	1947	1983–87
MOLDOVA	1995	1995–97
MOROCCO	1993	1993; 1996–97
MOZAMBIQUE	–	–
NAMIBIA	1996	1996–97
NEPAL	1995	1995–97
NICARAGUA	1965	1979–95
NIGER	1996	1996–97
NIGERIA	–	–
OMAN	1975	1996–97



Country	Year of Article VIII Accession	Year(s) of Noncompliance
PAKISTAN	1995	1995–97
PANAMA	1947	–
PAPUA NEW GUINEA	1975	1995–97
PARAGUAY	1995	1996–97
PERU	1961	1985–92; 1996
PHILIPPINES	1995	1995–97
POLAND	1995	1996–97
ROMANIA	–	–
RUSSIA	1996	–
RWANDA	–	–
SENEGAL	1996	1996–97
SIERRA LEONE	1996	1997
SINGAPORE	1969	1997
SLOVAKIA	1995	1995–97
SLOVENIA	1995	1995–96
SOUTH AFRICA	1974	1979–93; 1994–95
SRI LANKA	1994	1996–97
SWAZILAND	1990	1996–97
SYRIA	–	–
TAJKISTAN	–	–
TANZANIA	1996	1996–97
THAILAND	1990	–
TOGO	1996	1996–97
TUNISIA	1993	1996–97
TURKEY	1990	1996–97
TURKMENISTAN	–	–
UGANDA	1994	1994
UKRAINE	1997	1997
URUGUAY	1981	–
UZBEKISTAN	–	–
VENEZUELA	1977	1984–88; 1994–95
VIETNAM	–	–
YEMEN	1996	–
ZAMBIA	–	–
ZIMBABWE	1995	1995–97

## References

- Abrevaya, J. (1997). The equivalence of two estimators of the fixed effects logit model. *Economics Letters*, 55, 41–43.
- Ahlquist, J. S. (2006). Economic policy, institutions, and capital flows: portfolio and direct investment flows in developing countries. *International Studies Quarterly*, 50, 681–704.

- Aizenman, J., & Marion, N. (2004). International reserve holdings with sovereign risk and costly tax collection. *The Economic Journal*, *114*, 569–591.
- Archer, C. C., Biglaiser, G., & de Rouen, K., Jr. (2007). Sovereign bonds and the ‘democratic advantage’: does regime type affect credit ratings agency ratings in the developing world? *International Organization*, *61*, 341–365.
- Axelrod, R. (1984). *The evolution of cooperation*. New York: Basic Books.
- Beck, N. (2001). Time-series cross-section data: what have we learned in the past few years? *Annual Review of Political Science*, *4*, 271–293.
- Beck, T., Clarke, G., Groff, A., Keefer, P., & Walsh, P. (2001). New tools in comparative political economy: the database of political institutions. *World Bank Economic Review*, *15*(1), 165–176.
- Biglaiser, G., & DeRouen, K., Jr. (2007). Sovereign bond ratings and neoliberalism in Latin America. *International Studies Quarterly*, *51*, 121–138.
- Blonigen, B., & Wang, M. (2004). Inappropriate pooling of wealthy and poor countries in empirical FDI studies. NBER Working Paper No. 10378.
- Bordo, M., & Kydland, F. (1999). The gold standard as a commitment mechanism. In M. D. Bordo (Ed.), *The gold standard and related regimes*. New York: Cambridge University Press.
- Bordo, M., & Rockoff, H. (1996). The gold standard as a ‘good housekeeping seal of approval’. *The Journal of Economic History*, *56*(2), 389–428.
- Bordo, M., Mody, A., & Oomes, N. (2004). Keeping the capital flowing: the role of the IMF. *International Finance*, *7*(3), 421–450.
- Braumoeller, B. F. (2004). Hypothesis testing and multiplicative interaction terms. *International Organization*, *58*, 807–820.
- Brewer, T. L., & Rivoli, P. (1990). Politics and perceived creditworthiness in international banking. *Journal of Money, Credit, and Banking*, *22*(3), 357–369.
- Büthe, T., & Milner, H. (2008). The politics of foreign direct investment into developing countries: increasing FDI through international trade agreements? *American Journal of Political Science*, *52*(4), 741–762.
- Chayes, A., & Chayes, A. H. (1993). On compliance. *International Organization*, *47*(2), 175–205.
- Chayes, A., & Chayes, A. H. (1995). *The new sovereignty: compliance with international regulatory agreements*. Cambridge: Harvard University Press.
- Cosset, J.-C., & Roy, J. (1991). The determinants of country risk ratings. *Journal of International Business Studies*, *22*, 135–142.
- Downs, G. W., & Jones, M. A. (2002). Reputation, compliance, and international law. *Journal of Legal Studies*, *XXXI*, 95–114.
- Downs, G. W., Rocke, D. M., & Barsoom, P. N. (1996). Is the good news about compliance good news about cooperation? *International Organization*, *50*(3), 379–406.
- Drazen, A., & Masson, P. (1994). Credibility of policies versus credibility of policymakers. *The Quarterly Journal of Economics*, *109*, 735–754.
- Dreher, A., & Voigt, S. (2008). Does membership in international organizations increase governments’ credibility? Testing the effects of delegating powers. CESifo Working Paper No. 2285.
- Drukker, D. M. (2003). Testing for serial correlation in linear panel data models. *Stata Journal*, *3*, 168–177.
- Fearon, J. (1994). Domestic political audiences and the escalation of international disputes. *American Political Science Review*, *88*(3), 577–592.
- Fearon, J., & Laitin, D. (2003). Ethnicity, insurgency, and civil war. *American Political Science Review*, *97* (1), 75–90.
- Feder, G., & Ross, K. (1982). Risk assessment and risk premiums in the eurodollar market. *Journal of Finance*, *37*, 679–691.
- Frankel, J., & Rose, A. (1996). Currency crashes in emerging markets: an empirical treatment. *Journal of International Economics*, *41*, 351–366.
- Friedrich, R. J. (1982). In defense of multiplicative terms in multiple regression equations. *American Journal of Political Science*, *26*(4), 797–833.
- Gaubatz, K. T. (1996). Democratic states and commitment in international relations. *International Organization*, *50*(1), 109–139.
- Glennerster, R., & Shin, Y. (2007). Does transparency pay? Unpublished working paper, Massachusetts Institute of Technology.
- Grieco, J. M., Gelpi, C. F., & Warren, T. C. (2009). When preferences and commitments collide: the effect of relative partisan shifts on international treaty compliance. *International Organization*, *63*, 341–355.

- International Monetary Fund. (2006). Article VIII acceptance by IMF members: Recent trends and implications for the fund. Accessed at: <http://www.imf.org/external/np/pp/eng/2006/052606.pdf>.
- Jensen, N. (2003). Democratic governance and multinational corporations: political regimes and inflows of foreign direct investment. *International Organization*, 57, 587–616.
- Jensen, N. (2004). Crisis, conditions, and capital: the effect of international monetary fund agreements on foreign direct investment inflows. *Journal of Conflict Resolution*, 48(2), 194–210.
- Keohane, R. (1984). *After hegemony*. Princeton: Princeton University Press.
- Keshk, O. (2003). Cdsimeq: a program to implement two-stage probit least squares. *The Stata Journal*, 3, 1–11.
- Laeven, L., & Valencia, F. (2008). Systemic banking crises: a new dataset. IMF Working Paper WP/08/224 (November).
- Lohmann, S. (1997). Linkage politics. *Journal of Conflict Resolution*, 41(1), 477–513.
- Mansfield, E., Milner, H., & Rosendorff, B. P. (2002). Why democracies cooperate more: electoral control and international trade agreements. *International Organization*, 56(3), 477–513.
- Mauro, P., Sussman, N., & Yafeh, Y. (2006). *Emerging markets and financial globalization: Sovereign bond spreads in 1870–1913 and today*. New York: Oxford University Press.
- McKinnon, R. (1979). *Money in international exchange: The convertible currency system*. New York: Oxford University Press.
- Mearsheimer, J. (1994/95). The false promise of international institutions. *International Security*, 19, 5–26.
- Mitchell, R. (1994). Regime design matters: intentional oil pollution and treaty compliance. *International Organization*, 48(3), 425–458.
- Morgenthau, H. (1978). *Politics among nations: The struggle for power and peace* (5th ed.). New York: Alfred Knopf.
- Mosley, L. (2006). Constraints, opportunities, and information: financial market-government relations around the world. In P. Bardhan, S. Bowles, & M. Wallerstein (Eds.), *Globalization and egalitarian redistribution* (pp. 87–119). Princeton: Princeton University Press.
- North, D., & Weingast, B. (1989). Constitutions and commitment: evolution of institutions governing public choice in 17th century England. *Journal of Economic History*, 49, 803–832.
- Obstfeld, M., & Taylor, A. (2003a). Globalization and capital markets. In M. D. Bordo, A. M. Taylor, & J. G. Williamson (Eds.), *Globalization in historical perspective*. Chicago: University of Chicago Press.
- Obstfeld, M., & Taylor, A. (2003b). Sovereign risk, credibility, and the gold standard: 1870–1913 versus 1925–31. *Economic Journal*, 113, 241–275.
- Plümper, T., & Troeger, V. (2007). Efficient estimation of time-invariant variables in finite sample panel analyses with unit fixed effects. *Political Analysis*, 15(2), 124–139.
- Quinn, D. (1997). The correlates of change in international financial regulation. *American Political Science Review*, 91(3), 531–551.
- Reinhart, C., Rogoff, K., & Savastano, M. (2003). Debt intolerance. *Brookings Papers on Economic Activity*, 1, 1–62.
- Sachs, J., & Warner, A. (1995). Economic reform and the process of global integration. *Brookings Papers on Economic Activity*, 1, 1–118.
- Saiegh, S. M. (2005). Do countries have a ‘democratic advantage?’ political institutions, multilateral agencies, and sovereign borrowing. *Comparative Political Studies*, 38(4), 366–387.
- Schultz, K., & Weingast, B. (1998). Limited governments, powerful states. In R. M. Siverson (Ed.), *Strategic politicians, institutions, and foreign policy* (pp. 22–23). Ann Arbor: University of Michigan Press.
- Schultz, K., & Weingast, B. (2003). The democratic advantage. *International Organization*, 57(1), 3–42.
- Simmons, B. (1998). Compliance with international agreements. *Annual Review of Political Science*, 1, 75–93.
- Simmons, B. (2000a). The legalization of international monetary affairs. *International Organization*, 54(3), 573–602.
- Simmons, B. (2000b). International law and state behavior: commitment and compliance in international monetary affairs. *American Political Science Review*, 94(4), 819–835.
- Simmons, B., & Hopkins, D. (2005). The constraining power of international treaties: a response to von Stein. *American Political Science Review*, 99(4), 623–631.
- Sinclair, T. (2005). *The new masters of capital: American bond rating agencies and the politics of creditworthiness*. Ithaca: Cornell University Press.
- Sobel, A. C. (1999). *State institutions, private incentives, global capital*. Ann Arbor: University of Michigan Press.

- Tomz, M. (2007). *Reputation and international cooperation: Sovereign debt across three centuries*. Princeton: Princeton University Press.
- von Stein, J. (2005). Do treaties constrain or screen? Selection bias and treaty compliance. *American Political Science Review*, 99(4), 611–622.
- Vreeland, J. (2003). *The IMF and economic development*. New York: Cambridge University Press.
- Wacziarg, R., & Welch, K. (2003). Trade liberalization and growth: New evidence. Unpublished paper, Stanford University.
- Wacziarg, R., & Welch, K. (2008). Trade liberalization and growth: new evidence. *World Bank Economic Review*, 22(2), 187–231.
- Waltz, K. (1979). *Theory of international politics*. Reading: Addison-Wesley.
- Wooldridge, J. (2002). *Econometric analysis of cross-section and panel data*. Cambridge: MIT.
- World Bank. (2003). Global Development Finance CD-ROM. Washington, DC: World Bank.
- World Bank. (2004). World Development Indicators CD-ROM. Washington, DC: World Bank.