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Political Institutions and Property Rights: Veto Players and Foreign Exchange Commitments in 127 Countries

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Abstract

What political institutions improve property rights? Building on the work of North and Weingast, this article argues that institutional checks on policy-making discretion ("veto players") improve the property rights of investors regarding the value of the domestic currency. Veto players constrain the ability of policy makers to opportunistically pursue policy that may lead to a depreciated domestic currency. The study offers some of the first large-sample evidence that check and balance institutions lower the risk of expropriation, using a direct measure of investors' revealed preferences as the dependent variable. In particular, evidence from 127 countries over the period 1975-2004 shows that the use of foreign currency as a store of value—a common hedge against domestic currency depreciation—decreases with the number of veto players in government. The findings are robust to multiple specifications, including instrumental variable models that exploit exogenous sources of institutional variation.

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Introduction

Although a near consensus has emerged that "good" political institutions exert a positive causal impact on a host of economic outcomes, most notably economic growth (Acemoglu, Johnson, & Robinson, 2001, 2002; Rodrik, Subramanian, & Trebbi, 2004), considerably less agreement exists about which specific institutions are "good" and how they can be measured empirically. Institutional analyses of economic growth by economists typically focus on property rights: "Good" institutions constrain the ability of the government to expropriate, which increases incentives for physical and human capital investment that improves economic performance. But empirical verification of the postulated intermediate link between institutions and property rights is tenuous, as most empirical studies jump from institutions directly to growth. To date, we have almost no large-sample evidence of a direct relationship between political institutions and property rights. This article provides theoretical justification and empirical evidence linking veto players to improvements in investors' perceived property rights (see Figure 1).

For institutions to "matter" for outcomes such as growth, individual actors must believe that the rules of the game ensure the security of their assets.[1] Government violations of these assets may be direct—such as the outright confiscation of private assets—or indirect, such as defaulting on public debt or debasing the currency (Clague, Keefer, Knack, & Olson, 1996). This article studies how political institutions constrain the ability of the government to pursue indirect violations of property rights.

A primary contribution of my approach is to move beyond subjective indicators of property rights derived from private-sector rating agencies and think tanks, instead focusing on actual investor behavior. Although recent improvements in cross-national firm-level surveys provide one avenue for assessing the relationship between various institutional arrangements and the perceptions of private-sector actors, surveys represent a variation of the sort of subjective evaluations that have been criticized in the literature (Glaeser, La Porta, Lopez de Silanes, & Shleifer, 2004). By contrast, my approach employs a behavioral indicator of expropriation risk as the dependent variable: foreign currency substitution, or the use of nondomestic currency—most often U.S. dollars—as a

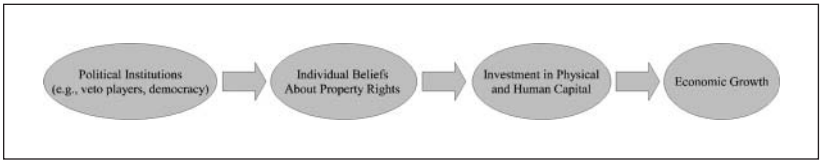

Figure 1. A causal chain linking political institutions to economic growth
Note: Institutional approaches to the economic growth by economists typically focus on property rights: "Good" institutions constrain the ability of the government to expropriate. These institutions improve individual beliefs and perceptions about property rights protection, which increase the incentives for physical and human capital investment that improves economic performance. Most empirical studies jump from institutions directly to growth, ignoring the intermediate channels linking institutions to investors' perceived property rights. This article focuses on the first link in the chain diagrammed above.

store of value.[2] The degree of foreign currency deposits represents investors' revealed preference with respect to the primary function of money, which is the store of value.

The overall level of currency substitution in a particular country provides a direct proxy for the property rights of domestic currency holders. This is because the use of foreign currency as a store of value represents the rational response among private-sector actors to the risk of domestic currency debasement. When the government's commitment to the value of the domestic currency is in question, investors turn to foreign currency deposits as a low-cost insurance (hedging) mechanism. The extent of hedging via foreign currency deposits directly reflects investors' assessment of the government's commitment to the domestic currency. Higher levels of currency substitution indicate greater perceived expropriation risk.

My theoretical insights extend the foundational work of North and Weingast (1989), who explain how checks on executive discretion improve the government's commitment to property rights. My argument explains the effects of institutional veto players on investors' incentives. I argue that formal institutional checks and balances ("veto players") constrain the ability of policy makers to opportunistically pursue policy that may lead to a depreciated domestic currency, thereby improving the property rights of domestic currency–denominated asset holders ("investors"). My definition of veto players institutions closely follows Tsebelis (2002) to include the range of individuals and collective actors in a government, including political parties, whose agreement is necessary to change the status quo policy. As the number of veto players increases, policy makers become more constrained in their ability to favor particular constituencies at the expense of the broad

population of domestic currency holders. As a result, veto players improve the property rights of domestic investors.

The empirical section of this article presents some of the first large-sample tests of the effects of check and balance institutions on investors' property rights. The use of a behavioral indicator of investor confidence represents a more direct and rigorous test of the extent to which veto players affect the risk of expropriation while avoiding some of the endogeneity problems that have plagued previous research. Using a panel of 127 countries over the period 1975-2004, my results suggest that check and balance institutions deter foreign currency substitution, a common hedge against domestic currency debasement. A further contribution of the empirical analysis is to contrast the effects of a direct measure of political veto players with the more subjective indicator of democracy (the polity score developed by Jaggers & Marshall, 2002). Only formal checks on executive policy-making discretion are consistently shown to improve the property rights of investors. The effect of veto players is robust to several alternative specifications, including instrumental variable (IV) models that exploit exogenous historical institutional variation.

The Economic Effects of Veto Players

What institutions improve property rights? The seminal contribution of North and Weingast (1989) demonstrates how a newly powerful parliament improved the credibility of promises by the English Crown to repay loans, thereby improving the property rights of domestic lenders. Tsebelis (2002, p. 19) shows that veto players increase policy stability by making changes in the status quo policy more difficult. Cox and McCubbins (2001) incorporate political parties and electoral institutions into a model that makes more explicit predictions about how these formal institutions influence the provision of public-regarding policies such as the protection of property rights. In particular, the decisiveness and public-regardedness of policy is a function of the institutional separation of power (roughly the constitutional checks that Tsebelis refers to as "institutional" veto players) and the separation of purpose.[3]

Subsequent work on the economic effects of veto players emphasizes how these institutions help governments overcome credibility problems resulting from time-inconsistent incentives by making policy changes more difficult (Keefer & Stasavage, 2002, 2003; Stasavage, 2002b). For example, Keefer and Stasavage (2002) show that central bank independence is more credible in countries with stronger check and balance institutions.

Veto players theory has since been extended beyond notions of policy stability and credible commitment to explain a host of specific economic and policy outcomes. An important contribution to the growth literature by Acemoglu and Johnson (2005) argues that the constraints on elite and government expropriation (what they refer to as "property rights institutions") matter more for investment and growth than the arrangements supporting private contracts ("contracting institutions"). Henisz (2000) and Fatas and Mihov (2006) argue that checks increase economic growth under the assumption that investment increases with the policy stability that veto players provide. Panizza (2001) argues that veto players improve the overall quality of policy. Other work shows that domestic policy responses to globalization depend on the number of veto players; greater numbers of veto players typically preclude large policy swings (Ha, 2007; Henisz & Mansfield, 2006; O'Reilly, 2005). Closer in spirit to the approach pursued here, Jensen (2008) uses price data from political risk insurance agencies to show that constraints on the executive reduce expropriation risk to multinational investors. As yet, no large-sample study documents a direct link between veto players and the first-order effect of these institutions on the security of the property rights of domestic investors.

My theoretical model is a political economy extension of the prominent empirical finance model, which views currency substitution as an aggregate outcome that is subject to individual depositors' incentives to store value in foreign currency. If investors fear declines in the future value of their assets because of unfavorable economic conditions induced by government policy (e.g., inflation or domestic currency depreciation), they will minimize their exposure to risk by storing a portion of their assets as foreign currency deposits. This "portfolio view" of currency substitution holds that resident investors choose the currency composition of savings that minimizes the variance of portfolio returns (Levy-Yeyati, 2006).

The emphasis on political institutions distinguishes my approach from the financial portfolio view. The latter emphasizes that depositors evaluate risk based on contemporaneous economic outcomes. My approach highlights the ways in which political institutions condition these economic outcomes, thereby affecting the incentives of investors regarding their portfolio allocations.

Foreign currency substitution represents a direct behavioral proxy for depositors' perceptions of depreciation risk. That is, the dollarization of financial assets increases with the risk of domestic currency depreciation, as depositors turn to foreign currency as insurance against a deterioration of the net present value of their domestic currency-denominated assets. In an influential

study of currency holdings in volatile emerging markets, de la Torre and Schmukler (2004) explain that de facto dollarization provides a "hedge against price (interest rate and exchange rate) risk at the expense of exposure to price-induced default risk" (p. 353). Consider a recent example of this behavior in Argentina. Responding to concerns that the Argentine government would let the value of the peso decline in an effort to increase economic growth near the 2009 election, "private bank deposits in dollars rose by about 5 billion pesos ($1.3 billion) between March and May, double the amount of the previous three months," according to *Bloomberg News* (Faries, 2009).

The incentives of policy makers to pursue policies that lead to indirect expropriation are well known. For one, governments may be motivated to inflate away their debt, something that de la Torre and Schmukler (2004) call "dilution risk," or "the threat that the sovereign . . . might face incentives to liquefy peso liabilities through surprise inflation" (p. 357).[4] Second, it may be that political gains from the pursuit of policies or programs that favor a valued constituency outweigh the costs of a depreciated currency. For instance, to the extent that exporters represent a powerful interest group, their preference for an undervalued currency (Broz, Frieden, & Weymouth, 2008) could find political traction (Frieden, 1997, 2002). Depreciation could also result from fiscal imprudence since a political leader may "gain resources by printing money to spend on his own purposes, thereby taxing real money balances through inflation, and by repudiating . . . debts" (Clague et al., 1996, p. 244). More generally, it is well known that policy choices involve a trade-off between present and future welfare. Their interest in maintaining political power may cause policy makers to sacrifice the latter to increase the probability of short-term political success (Nordhaus, 1975) since the effects of present policy on future inflation and domestic currency depreciation are passed on to future leaders. Regardless of the source, a lack of institutional constraints on such behavior increases the incentives for depositors to hedge against the depreciation of domestic currency-denominated assets.

I argue that institutionalized constraints on policy makers influence investor perceptions of the risk environment. Veto players constrain opportunistic policy by requiring agreement among multiple political actors with varying constituent interests. Tsebelis (1995) notes,

> The potential for policy change decreases with the number of veto players, the lack of congruence (dissimilarity of policy positions among veto players), and the cohesion (similarity of policy positions among the constituent units of each veto player) of these players. (p. 289)

Veto players theory predicts that policy outcomes must lie within a range that satisfies all players. Thus, the likelihood that opportunistic policy will exert costs on a valued constituency increases with the number of veto points. Even if weak property rights with respect to the domestic currency represents the status quo ante, institutional innovations or election outcomes that increase the number of veto player should lower the likelihood that such policy will persist since it is likely to harm the political prospects of at least one of the veto players.

Given that the demand for hedging mechanisms that guard against currency risk will be lower in countries with a robust property rights regime, the argument linking veto players to the property rights of investors implies a testable hypothesis about the relationship between veto players and currency substitution. If checks and balances improve the property rights of domestic investors by improving the government's commitment to the value of the domestic currency, then veto players will lower the propensity to store value in foreign currencies. In the aggregate, countries with greater numbers of veto players will exhibit, ceteris paribus, less overall currency substitution. The empirical section of the article tests this claim.

The Dependent Variable: Foreign Currency Deposits

The degree of foreign currency substitution throughout the world is striking in spite of the systemic risks associated with it.[5] At least a quarter of bank deposits are denominated in foreign currency in 56 countries in my sample. There are regional and income group differences in the degree of dollarization along with significant variation across countries, with Organisation for Economic Co-operation and Development (OECD) countries typically less dollarized than developing nations. My empirical analysis employs regional and OECD dummies to capture the variation that may emerge because of regulatory and historical commonalities within country groups.

Economic explanations of currency substitution highlight the optimization decision of domestic investors for whom foreign currency deposits represent one component of their portfolio. Portfolio returns are subject to a host of factors, including changes in the domestic price level and fluctuations in the real exchange rate (Ize & Levy-Yeyati, 2003). The Ize and Levy-Yeyati (2003) model posits that a representative domestic investor chooses an asset currency composition (including deposits) that minimizes the variance of portfolio returns. The authors show that the degree of dollarization that depositors chose is subject to the pass-through of prices to the nominal

exchange rate since pass-through creates an incentive to store value in more stable currency substitutes.

Models that emphasize the economic determinants of depositor behavior are subject to endogeneity bias,[6] and recent research has begun to address this problem and the possible influence of institutional environment as well. Thus far, the literature centers around a negative correlation between dollarization and aggregate measures of broad institutional "quality": Countries with "good institutions" are shown to be less financially dollarized (de Nicolo, Honohan, & Ize, 2005; Honig, 2009; Levy-Yeyati, 2006; Rajan & Tokatlidis, 2005).[7] For de Nicolo et al. (2005, p. 1703), the correlation between dollarization and "low-quality" institutions is suggestive of a moral hazard interpretation of dollarization, as "countries with weaker institutions are more likely to engage in government bailouts," which increase the incentive to dollarize.[8] Honig (2009, p. 4) interprets the correlation between government quality and deposit dollarization as evidence that residents of countries with low-quality governance will lack confidence that future policy will promote currency stability. But low-quality governance is endogenous to underlying institutional arrangements that remain unidentified.

Another problem with prevailing approaches, identified by Glaeser et al. (2004), is that the subjective institutional indicators do not measure institutions but instead reflect recent economic performance and overall levels of economic development. For instance, it is well known that GDP per capita correlates highly with the governance quality indices, making it all the more difficult to discern for which theoretical construct the governance indicators actually proxy. Indeed, it is rare to find an empirical test in which an aggregated index of governance quality enters significantly in specifications that also include GDP per capita.

Although suggestive of a promising new line of inquiry, existing studies leave the following questions unanswered. What types of political arrangements constitute "good institutions" in the context of financial intermediation? Or more specifically, which institutions allow governments to commit to the value of the domestic tender, thereby improving the property rights of investors? As yet, the literature has not established a firm theoretical or empirical relationship between durable, rule-based political institutions and the property rights of domestic currency holders. This article fills the gap in the literature by arguing that veto players improve the property rights of investors by making opportunistic policy pursuits more difficult. The following section tests this claim.

Empirical Evidence

Check and balance institutions are thought to deter expropriation, but large-sample empirical verification of the direct effects of these institutions on investors' property rights is virtually nonexistent. The empirical evidence presented in the highly influential article by North and Weingast derives from a single case, making the external validity of their argument the subject of continuing debate (Saiegh, 2007). This section tests the relationship between veto players and investors' perceptions of currency debasement, contrasting the effects of formal, durable institutional constraints with a more informal, subjective indicator of democracy.

The following equation represents the relationship of interest:

$$Y_{it} = \gamma + \alpha I_{it} + \varepsilon_{it},$$

where Y_{it} is a measure of the proportion of total bank deposits that are denominated in foreign currency in country i during year t. Specifically, the dependent variable is the ratio of foreign currency deposits to total deposits in domestic deposit money banks over the period 1975-2004. Coverage includes up to 127 countries. The data set was assembled by Levy-Yeyati (2006) from several sources, including central bank bulletins, International Monetary Fund staff reports, and previous studies by de Nicolo et al. (2005), Arteta (2002), and Baliño, Bennett, and Borensztein (1999). The summary statistics in Table 1 indicates that 25% of total deposits are denominated in foreign currency in the sample of countries. The variable I_{it} is the indicator of political institutions. The coefficient of interest is α, which is an estimate of the linear relationship between institutions and foreign currency deposits.

This study contrasts the effects of checks and balances with the more broadly conceived notion of democratic governance. To capture the former construct, I use the variable *checks*, from the Database of Political Institutions (DPI; Beck, Clarke, Groff, Keefer, & Walsh, 2001). Checks counts the number of veto players by country, accounting for electoral rules, party affiliations, and electoral competitiveness. Checks yields a minimum score in countries without an effective legislature, increasing when the executive and legislative branches are controlled by different parties in presidential systems; it counts all of the parties in government under parliamentary systems. Checks accounts for the effects of electoral institutions on party cohesion by taking into account closed-list or open-list rules. Closed-list electoral systems increase party cohesion by granting greater authority to party leadership (Cox & McCubbins, 2001). Checks also accounts for the DPI index of electoral

Table 1. Summary Statistics

Variable	*N*	*M*	*SD*	Min	Max
Foreign currency deposits	1699	0.251	0.233	0.000	0.957
Checks	1699	0.824	0.638	0.000	2.197
Polity	1368	2.304	0.892	0.000	3.045
Polcon	1557	0.409	0.316	0.000	0.883
GDP/capita	1652	7.619	1.432	4.395	10.723
GDP/capita growth	1657	1.803	5.643	–47.085	37.573
Inflation	1509	2.327	1.443	–2.748	10.076
Capital account openness	1551	0.244	1.583	–1.753	2.623
Polarization	1557	0.435	0.782	0.000	2.000
Election	1699	0.244	0.429	0.000	1.000
Exchange rate regime	120	2.208	0.653	1.000	3.000
Distance	102	0.266	0.179	0.003	0.710
Trade	127	80.722	35.574	3.105	207.731
FX regulations	116	0.569	1.166	0.000	5.000
Central bank turnover	98	0.229	0.176	0.000	0.684
Checks (1975)	83	0.345	0.563	0.000	1.792
Polity (1975)	92	1.836	0.952	0.000	3.045
Polcon (1975)	94	0.216	0.301	0.000	0.881
Total elections	127	3.465	2.249	0.000	11.000
Proportional representation	113	0.575	0.487	0.000	1.000

Note: Foreign currency deposits/total deposits from Levy-Yeyati and Sturzenegger (2005). The checks variable (Database of Political Indicators [DPI]; Beck et al., 2001) measures the number of veto players in the government in a particular year. Polcon is an alternative measure of veto players (Henisz, 2000). The political variables polarization, election, total elections, and proportional representation are from the DPI. Polity (Jaggers & Marshall, 2002) is a subjective indicator of democracy. Distance is a standardized measure of latitude (Hall & Jones, 1999). Capital account openness is from Chinn and Ito (2006). Exchange rate regime classifications are from Levy-Yeyati and Sturzenegger (2005). The central bank turnover ratios are from (Ghosh, Gulde, & Wolf, 2003). The restrictions on foreign currency are from Levy-Yeyati (2006). The remaining economic variables are from the World Bank Development Indicators. The checks, polity, inflation, and GDP/capita variables are logged.

competitiveness since constitutional checks are irrelevant if the veto players are not subject to electoral competition. In these ways, the index provides a comprehensive indicator of the rigid institutional checks and balances that I argue contribute to property rights.

An alternative measure of veto players is the *Polcon* index, developed by Henisz (2000). I use checks as my preferred measure of veto players for two reasons. First, checks accounts for the multitude of interests in large coalition governments, counting each party as an additional veto player; polcon does not count each party in coalition governments as an additional veto player. Second, checks—unlike polcon—accounts for electoral rules, which Cox and McCubbins (2001) argue contribute to the separation of purpose among veto players. Since the diversity of interests among veto players is fundamental to my argument linking veto players to foreign exchange commitments, checks provides the best empirical approximation of the theoretical construct developed in this study.[9] However, I test the robustness of my results by substituting *polcon 5* into my specifications on several occasions.[10]

To contrast the effects of veto players with informal notions of democracy, I use the subjective indicator of democracy most commonly applied in the literature: *polity* (the polity 2 indicator developed by Jaggers & Marshall, 2002). Glaeser et al. (2004) contend that subjective indicators such as polity do not measure formal political institutions but instead reflect recent political and economic outcomes, confounding political constraints with actual policy choices. Since the formal checks and the informal polity are highly correlated, my analysis contrasts the estimated effects of each institutional measure in separate models. If the formality and durability of institutional constraints matter for property rights, a robust relationship between institutions and the dependent variable should be evident only in the case of checks. Following the literature, I use the logged values of both of these institutional indicators.

Endogeneity can bias the estimation of α in two ways. The first concerns the direction of causality: Though unlikely, it is conceivable that systemic features of the financial system influence veto players outcomes rather than the other way around. A second and more likely pitfall is that an omitted variable affects political institutions and the degree of foreign currency deposits.

The identification strategy pursued here attempts to avoid endogeneity bias in multiple ways. I begin by estimating regressions of the yearly data, controlling for variables identified in the literature as being highly correlated with deposit dollarization and the institutional measures. Such an approach estimates the following:

$$Y_{it} = \gamma + \alpha I_{it} + \mathbf{E}'_{it}\beta + \tau_t + \rho_i + \varepsilon_{it},$$

where $\mathbf{E}_{it}$ is a vector of economic covariates. The model includes year dummies τ_t to control for common global shocks and trends. In addition, the specification includes regional fixed effects ρ_i. In particular, I include dummies corresponding to OECD, Latin America, Southeast Asia, South Asia, Middle East and Northern Africa, sub-Saharan Africa, and Eastern Europe (including the former Soviet Union). These regional and income group fixed effects capture common time-invariant, spatial commonalities such as legal traditions, religious and cultural norms, and common regulatory arrangements.

I include several economic control variables to account for initial heterogeneity among countries. The vector $\mathbf{E}_{it}$ includes economic development, operationalized as the logged value of GDP/capita in country *i* during year *t*. The expectation is that less developed countries will likely exhibit greater levels of foreign currency deposits. The log of inflation captures the response of economic actors to the detrimental effects of contemporaneous asset value deterioration that are likely to affect political outcomes as well as the degree of hedging through foreign currency substitution. An index of capital account openness from Chinn and Ito (2006) approximates exposure to international capital flows.[11] The predicted relationship between capital account openness and financial dollarization is ambiguous: It may be that countries with more international exposure are more dollarized, but it is also possible that the effects of openness on the development of political and economic institutions act to deter dollarization. The regressions help to sort out this effect. I also include the three-way measure of the de facto exchange rate regime (1 = *float*, 2 = *intermediate*, 3 = *fixed*) created by Levy-Yeyati and Sturzenegger (2005). This variable measures the policies countries actually follow rather than those that they announce. Table 2 reports correlation coefficients among the main variables used in this study.

The bivariate regression reported in column 1 of Table 3 indicates a negative relationship between veto players and foreign currency substitution that is significant at the 99% level of confidence. The economic implication of the estimated coefficient is substantial. For instance, the results in column 1 imply a difference of approximately 8% in the proportion of foreign currency deposits between countries with the minimum number of checks and those with the maximum. By contrast, column 2 reports a positive relationship between polity and foreign currency deposits.

The statistically significant negative relationship between veto players and foreign currency deposits holds to the inclusion of the year and regional fixed effects and the vector of economic covariates (Model 3). Inflation

Table 2. Correlation Coefficients

	Foreign currency deposits	Checks	Polity	Polcon	Checks (1975)	Polity (1975)	Polcon (1975)	Distance	GDP/ capita	GDP/ capita growth	Inflation	Capital account openness
Foreign currency deposits	1											
Checks	–.2906*	1										
Polity	–.0733	.8039*	1									
Polcon	–.2587*	.7321*	.7514*	1								
Checks (1975)	–.3234*	.4904*	.3792*	.4645*	1							
Polity (1975)	–.2943*	.5999*	.6150*	.4790*	.7918*	1						
Polcon (1975)	–.3863*	.6089*	.5071*	.6243*	.9072*	.8100*	1					
Distance	–.1785	.3048*	.2484	.4517*	.4140*	.2482*	.4554*	1				
GDP/capita	–.3268*	.3553*	.2427	.4625*	.5262*	.4250*	.6573*	.6373*	1			
GDP/capita growth	–.0286	.1036	.0124	–.0175	.0549	.0808	.1367	.2309	.1666	1		
Inflation	.4452*	–.0293	.1239	–.1374	–.1255	–.0906	–.3504*	–.2304	–.4053*	–.2946*	1	
Capital account openness	.0994	.1331	.1138	.1788	.1427	.1585	.3727*	.2945*	.4766*	–.0638	–.3652*	1

Note: The table presents correlation coefficients among country average values of the main variables used in the article.
*Correlation significant at 1%.

Table 3. Political Institutions and Foreign Currency Deposits (1975-2004)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Checks	–0.037***		–0.023**	–0.022**	–0.040***	0.006		–0.024**
	(0.009)		(0.011)	(0.011)	(0.011)	(0.031)		(0.011)
Checks squared						–0.017		
						(0.018)		
Polity		0.014**						
		(0.006)						
Polcon							–0.047**	
							(0.021)	
GDP/capita			–0.064***	–0.064***	–0.065***	–0.065***	–0.063***	–0.064***
			(0.007)	(0.007)	(0.008)	(0.007)	(0.008)	(0.008)
GDP/capita growth			0.006***	0.006***	0.006***	0.006***	0.006***	0.005***
			(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Inflation			0.055***	0.055***	0.056***	0.055***	0.053***	0.060***
			(0.006)	(0.006)	(0.007)	(0.006)	(0.007)	(0.007)
Exchange rate regime			–0.022***	–0.022***	–0.019***	–0.022***	–0.020***	–0.021***
			(0.006)	(0.006)	(0.007)	(0.006)	(0.007)	(0.007)
Capital account openness			0.048***	0.048***	0.048***	0.049***	0.054***	0.051***
			(0.004)	(0.004)	(0.005)	(0.004)	(0.005)	(0.005)
Election				–0.021*				
				(0.012)				
Polarization					0.043***			
					(0.009)			
Year effects	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Regional effects	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,699	1,421	1,208	1,208	1,110	1,208	1,171	1,103
Countries	127	113	110	110	108	110	107	110
R^2	.010	.003	.402	.403	.412	.402	.385	.408

Note: The dependent variable is foreign currency deposits/total deposits (1975-2004). Checks (Beck, Clarke, Groff, Keefer, & Walsh, 2001) and Polcon (Henisz, 2000) measure the number of veto players in the government. Election and polarization are from the Database of Political Indicators. Polity (Jaggers & Marshall, 2002) is a subjective indicator of democracy. Economic covariates are from the World Development Indicators. Capital account openness is from Chinn and Ito (2005). Exchange rate regime (1 = *float*, 2 = *intermediate*, 3 = *fixed*) corresponds to de facto classifications of Levy-Yeyati and Sturzenegger (2005). The checks, polity, inflation, and GDP/capita variables are logged. In column 8, all independent variables are lagged by 1 year. A constant was estimated but is not reported. Heteroscedasticity-robust standard errors are in parentheses.
*$p < .10$. **$p < .05$. ***$p < .01$.

enters with the expected positive coefficient. Economic growth appears to be positively associated with dollarization, whereas GDP/capita is negatively associated with dollarization. The relationship between economic development and foreign currency deposits is not surprising, given that more developed countries are more likely to have more developed financial markets that include alternative hedging instruments. The results suggest that pegged

exchange rate regimes are less dollarized, which may be interpreted as evidence that fixed exchange rates provide a monetary commitment mechanism that reduces hedging. Finally, capital account openness is positively associated with foreign currency substitution. This result suggests that globalization tends to increase the use of foreign currency as a store of value, suggesting a link between globalization and economic volatility to the extent that dollarization contributes to financial crises (Levy-Yeyati, 2006).

I explore several alternative political explanations and test the robustness of the results in Models 4 to 8. Model 4 includes a dummy for election years to pick up the effects of uncertainty associated with political transitions. This variable enters with a negative sign, perhaps contrary to expectations. Model 5 includes a variable that measures partisan distance between the executive and the four largest parties of the legislature.[12] The results suggest that polarization is strongly correlated with foreign currency deposits, perhaps in line with theories emphasizing how polarized veto players may contribute to policy rigidity, which may be problematic, especially in times of crisis (MacIntyre, 2001). To further probe whether the effect of veto players may be non-linear, Model 6 includes the squared value of checks; the estimates do not support nonlinearities. I substitute polcon for checks as a robustness test in Model 7. The estimated coefficient is positive and significant, consistent with checks. The model reported in column 8 lags the right-hand-side variables by 1 year to control for possible reverse causation in the relationship between dollarization and the economic fundamentals. The hypothesized negative relationship between veto players and foreign currency substitution remains consistent and robust.

Since the theory suggests that the *durability* of formal institutional constraints contribute to the property rights of investors, a second set of models reported in Table 4 probe the effects of political institutions on foreign currency substitution using 5-year averages over the period 1975-2004. The dependent variable in each of the specifications in Table 4 is the 5-year average of the foreign currency deposit ratio. Columns 1 and 2 include the institutional measures checks and polity, respectively. As before, only checks enters with the expected negative coefficient in the bivariate model. Column 3 probes the robustness of the relationship to the inclusion of period and regional fixed effects; column 4 adds the economic control variables. The negative relationship between checks and currency substitution holds at higher than a 95% level of confidence. In Model 5, polcon enters significant and with the expected negative sign.

Table 4. Political Institutions and Foreign Currency Deposits, Five-Year Averages (1975-2004)

	(1)	(2)	(3)	(4)	(5)
Checks	–0.055***		–0.069***	–0.048**	
	(0.018)		(0.019)	(0.020)	
Polity		0.005			
		(0.011)			
Polcon					–0.075**
					(0.036)
GDP/capita				–0.058***	–0.051***
				(0.013)	(0.014)
GDP/capita growth				0.014***	0.014***
				(0.003)	(0.003)
Inflation				0.069***	0.068***
				(0.011)	(0.012)
Exchange rate regime				–0.034**	–0.025*
				(0.014)	(0.014)
Capital account openness				0.050***	0.055***
				(0.008)	(0.009)
Year effects	No	No	Yes	Yes	Yes
Region effects	No	No	Yes	Yes	Yes
Observations	404	355	404	319	308
R^2	.022	.000	.204	.453	.429

Note: The dependent variable is foreign currency deposits/total deposits. All variables are 5-year averages corresponding to the following periods: 1975-1979, 1980-1984, 1985-1989, 1990-1994, 1995-1999, 2000-2004. Checks (Beck, Clarke, Groff, Keefer, & Walsh, 2001) and Polcon (Henisz, 2000) measure the number of veto players in the government. Polity (Jaggers & Marshall, 2002) is a subjective indicator of democracy. Capital account openness from Chinn and Ito (2005). Exchange rate regime (1 = *float*, 2 = *intermediate*, 3 = *fixed*) corresponds to de facto classifications of Levy-Yeyati and Sturzenegger (2005). All other economic covariates are from the World Development Indicators. The checks, polity, inflation, and GDP/capita variables are logged. A constant was estimated but is not reported. Heteroscedasticity-robust standard errors are in parentheses.
*$p < .10$. **$p < .05$. ***$p < .01$.

I also estimate similar models using country averages for the entire period, 1975-2004. Country averages are useful because they smooth out some of the uneven coverage in the foreign currency deposits data. Models of average values also allow me to control for other variables that are not

available as a time series. Table 5 reports these results. I begin by testing the bivariate relationship between the average values of checks and dollarization over the period; the results suggest a strongly negative association. Next, the model in column 2 demonstrates a significant negative relationship between the initial (1975) level of checks and the average level of subsequent foreign currency substitution. The similarity in the estimated coefficients corresponding to checks and checks (1975) is evidence of the durability of the veto players' institutions.[13]

In additional to their statistical significance, the results are also economically substantial. The estimated average effect of veto players on foreign currency substitution over the period is quite large. In particular, the estimated coefficient in Model 1 implies that increasing the average number of veto players from one to two would lower the share of foreign currency deposits from 34.6% to 26.6%. The result also implies that a country with one veto player (e.g., Syria) will be approximately 22% more dollarized than a country such as Denmark, which has an average of 6.5 veto players over the period.

Model 3 in Table 5 includes the average value of polity over the period. The estimated coefficient is not statistically significant at standard confidence levels. This result is telling, given that these models employ period averages, which should presumably reduce the level of subjective bias that could arise because of idiosyncratic events in a particular year. If democracy alone were sufficient to ensure investors' property rights, then the period average would likely reflect this negative relationship—but this is not the case. Taken together, the results in columns 1 to 3 imply a distinction between informal democratic institutions such as freedom of speech and contested elections (polity), and the types of durable constitutional rules and constraints captured by the veto players indicator. Although the latter appear to affect property rights perceptions, the former do not.

The negative relationship between veto players and foreign currency substitution persists to the inclusion of several economic and political variables that are meant to capture possible alternative explanations. In addition to introducing the regional dummies, the model in column 4 includes the following economic controls: GDP/capita, GDP/capita growth, inflation, and capital account openness. All the economic controls enter the model strongly significant, and with signs that are consistent with the results in prior estimations. The significance of checks increases and remains strongly significant to the inclusion of these controls.

Models 5 to 7 control for partisan polarization, the total number of elections, and the electoral system. In particular, I include the variable *proportional representation* in Model 7 to test whether checks is solely capturing the

Table 5. Political Institutions and Foreign Currency Deposits, Averages (1975-2004)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Checks	−0.117***			−0.120***	−0.139***	−0.121***	−0.128***	−0.104***	−0.122***	−0.121***	−0.103***	
	(0.035)			(0.027)	(0.029)	(0.028)	(0.035)	(0.028)	(0.028)	(0.028)	(0.028)	
Checks (1975)		−0.116***										
		(0.035)										
Polity			−0.021									
			(0.021)									
Polcon												−0.109*
												(0.057)
GDP/capita				−0.064***	−0.066***	−0.064***	−0.068***	−0.044***	−0.061***	−0.064***	−0.071***	−0.056**
				(0.017)	(0.017)	(0.018)	(0.020)	(0.015)	(0.018)	(0.018)	(0.018)	(0.022)
GDP/capita growth				0.019***	0.018**	0.019***	0.019**	0.017**	0.022***	0.019***	0.019***	0.020**
				(0.007)	(0.007)	(0.007)	(0.008)	(0.008)	(0.008)	(0.007)	(0.007)	(0.008)
Inflation				0.101***	0.097***	0.100***	0.090***	0.104***	0.096***	0.101***	0.071***	0.092***
				(0.020)	(0.021)	(0.021)	(0.022)	(0.023)	(0.020)	(0.020)	(0.023)	(0.022)
Capital account openness				0.055***	0.052***	0.055***	0.055***	0.055***	0.047***	0.055***	0.040***	0.051***
				(0.013)	(0.013)	(0.013)	(0.016)	(0.014)	(0.013)	(0.013)	(0.015)	(0.014)
Polarization					0.038							
					(0.028)							
Elections						0.001						
						(0.008)						
Proportional representation							0.057					
							(0.040)					
Central bank turnover								0.082				
								(0.084)				

(continued)

Table 5. (continued)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Exchange rate regime									–0.020 (0.025)			
Trade										0.000 (0.000)		
FX regulations											–0.056*** (0.014)	
Region effects	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Countries	127	83	113	116	114	116	106	92	111	116	107	111
R^2	.084	.105	.005	.566	.564	.566	.570	.651	.572	.566	.623	.510

Note: The dependent variable is the average value of foreign currency deposits/total deposits, 1975-2004. Checks (Beck, Clarke, Groff, Keefer, & Walsh, 2001) and polcon (Henisz, 2000) measure the number of veto players in the government. The political variables polarization, total elections, and proportional representation are from the Database of Political Indicators. Polity (Jaggers & Marshall, 2002) is a subjective indicator of democracy. Capital account openness from Chinn and Ito (2005). Exchange rate regime (1 = *float*, 2 = *intermediate*, 3 = *fixed*) corresponds to de facto classifications of Levy-Yeyati and Sturzenegger (2005). Foreign currency regulations (Levy-Yeyati, 2006) is a discrete variable measuring the degree of restrictions on dollar deposits in the banking system (1 = *no restrictions*, 5 = *dollar deposits prohibited in all cases*). Central bank turnover is from Ghosh, Gulde, and Wolf (2003). All other economic covariates are from the World Development Indicators. The checks, polity, inflation, and GDP/capita variables are logged. A constant was estimated but is not reported. Heteroscedasticity-robust standard errors are in parentheses.
*$p < .10$. **$p < .05$. ***$p < .01$.

effects of multiparty electoral systems. Indeed, checks and proportional representation are highly correlated (with a correlation coefficient of .22). Veto players remain consistently negatively correlated with foreign currency deposits, however, and none of the additional political control variables enter with statistical significance.

I include several additional economic control variables in columns 8 to 11. Model 8 includes a variable used in the literature as an (inverse) proxy for the independence of the central bank. In particular, *central bank turnover* is the average value of the 5-year turnover rate of central bank governors over the period (data from Ghosh, Gulde, & Wolf, 2003). Lower turnover rates are said to proxy for greater independence, which has been shown to correlate with lower inflation (Cukierman, Webb, & Neyapti, 1992). The estimated coefficient corresponding to central bank turnover is positive but not statistically significant. Model 9 controls for the exchange rate regime,[14] and model 10 for trade openness.[15] Neither of these variables is significantly correlated with foreign currency deposits. Model 11 includes the indicator *foreign currency regulations*, which measures official de jure regulations on foreign currency deposits in 2001 (from Levy-Yeyati, 2006).[16] Checks retains significance to the inclusion of each of these additional controls, of which only foreign currency regulations enters significantly and with the expected negative coefficient.[17] Finally, I substitute polcon as the measure of veto players in column 12; the negative relationship holds at standard confidence levels.

Beginning with Mauro (1995), cross-national studies of the effects of institutions on economic outcomes have attempted to correct for the estimation bias that results if institutions derive from economic variables, rather than the other way around. Instrumental variables (IV) regressions address the potential endogeneity of institutions by employing a two-stage estimation technique using exogenous sources of contemporaneous institutional variation (instruments). The first-stage model regresses current institutions on the instrument; the second-stage regression tests the relationship between the economic variable of interest and the exogenous component of the institutional variation—the first-stage estimated coefficient.

Let Z_i denote an instrument for checks. Valid instruments must meet two criteria. First, instrument relevance means that the instrument explains cross-national variation in current institutions; that is, $Cov(Z_i, I_i) \neq 0$. Second, instrument exogeneity requires that the instrument not explain dollarization other than through the channel of political institutions, namely, $Cov(Z_i, \varepsilon_i) = 0$.

Table 6 reports the results of a series of IV regressions. The model in column 1 instruments for checks using the initial (1975) value of polity. To meet the instrument exogeneity condition, the effect of polity on foreign currency

substitution may emerge solely through its effect on types of institutions that allow governments to commit to property rights, which this article argues are political veto players. As Przeworski and Limongi (1993) and prior estimates in this article have shown, the direct economic effects of informal democratic institutions are ambiguous. Indeed, it is unclear how democratization in 1975 would affect the average level of dollarization except through the likelihood that initially more democratic nations have greater numbers of veto players. Indeed, the first-stage regression supports the claim that countries that were more democratic in 1975 have greater numbers of veto players over the sample period. In the second stage, the predicted value of checks is strongly significant and negative. Indeed, the magnitude of the effect of checks on the dependent variable is nearly twice as large as that implied by the previously reported OLS coefficients. Following a similar logic, the model reported in column 2 uses the initial value of polcon as an instrument for checks. The results remain consistent, and the coefficient increases in magnitude.

The IV model reported in column 3 follows the strategy of Keefer and Knack (2007), who instrument for checks with the variable introduced by Hall and Jones (1999): a country's distance to the equator.[18] The logic behind the use of latitude as an instrument goes as follows. Hall and Jones argue that countries settled by Western Europeans are more likely to have a strong "social infrastructure," and the distance from the equator correlates strongly with Western European settlement. With regard to the research design pursued here, it is likely that *distance* is positively correlated with veto players (instrument relevance) and not related to dollarization except through its effect on checks (instrument exogeneity). The results reported in column 3 of Table 6 show that the predicted value of checks—instrumented with distance—remains negative and significant at the 95% level.

Model 4 instruments for checks using all three previous IVs: polity, polcon, and distance. The Hansen test of overidentification fails to reject the joint null hypothesis that the instruments are uncorrelated with the error term.[19] In each case, the coefficient corresponding to checks remains negative and highly significant.

I test the robustness of the result to an alternative indicator of veto players, polcon. Models 5 to 8 employ a similar IV strategy as Models 1 to 4, instrumenting for polcon with initial values of polity and checks as well as distance. The negative association between veto players and foreign currency deposits remains negative and highly significant. These findings are consistent with the previous results and are suggestive of a causal relationship between veto players and lower levels of foreign currency substitution.

Table 6. Political Institutions and Foreign Currency Deposits, Instrumental Variables (Average Values, 1975-2004)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Second stage								
Checks	–0.187***	–0.263***	–0.238**	–0.215***				
	(0.054)	(0.053)	(0.098)	(0.049)				
Polcon					–0.463***	–0.502***	–0.280**	–0.338***
					(0.143)	(0.163)	(0.124)	(0.104)
Countries	92	94	102	83	92	81	97	70
Hansen *J* statistic χ^2 *p*-value				.219				.579
First stage								
Polity (1975)	0.340***			0.300***	0.137***			0.136***
	(0.040)			(0.066)	(0.026)			(0.049)
Polcon (1975)		1.080***		0.147				
		(0.112)		(0.198)				
Distance			0.889***	0.384			0.684***	0.483***
			(0.230)	(0.238)			(0.118)	(0.145)
Checks (1975)						0.232***		–0.024
						(0.039)		(0.070)
R^2	.360	.371	.093	.455	.229	.216	.204	.324
RMSE	.434	.426	.501	.392	.241	.248	.247	.229
F statistic	74.11	92.21	14.87	31.80	28.32	35.75	33.47	17.72

Note: The dependent variable is the average value of foreign currency deposits/total deposits, 1975-2004. Checks and polcon measure the number of veto players in the government. The instruments are the 1975 value of polity, distance (a standardized measure of latitude from Hall & Jones, 1999), the 1975 value of polcon, and the 1975 value of checks. A constant was estimated but is not reported. Heteroscedasticity-robust standard errors are in parentheses, RMSE = root mean squared error.
*p < .10. **p < .05. ***p < .01.

In sum, the results reported here strongly support the hypothesized relationship between veto player institutions and investors' property rights. Concerns about the possible endogeneity of political institutions have been addressed through multiple model specifications, including an IV strategy that extracts exogenous institutional variation. The results do not support the claim that democracy, broadly conceived, similarly improves the government's commitment to the domestic currency. Overall, these results suggest that depositors recognize the constraints represented by durable, rule-based checks on policy-making discretion and that these constraints measurably affect their behavior. Formal check and balance

institutions appear to significantly improve investors' assessments of the government's commitment to the value of domestic currency.

Conclusion

That political institutions "matter" is a central tenet of modern political economy research, but empirical evidence of direct relationships between formal institutional arrangements and economic outcomes is scarce. The economic growth literature highlights "property rights institutions" but offers very little systematic evidence that these check and balance institutions actually affect the assessments of economic participants regarding the security of their property rights. Similarly, the empirical finance literature argues that "good institutions" help deter dollarization but provides little evidence to support the claim other than negative associations between foreign currency substitution and subjective institutional proxies that simultaneously capture such varied constructs as the "quality of the bureaucracy" and the "rule of law."

If institutions cause growth, the effect is second order. That is, the causal chain linking institutions to growth requires a positive first-order effect of institutions on the property rights regime. The direct impact of institutions on property rights, however, has until now received almost no large-sample empirical scrutiny. By emphasizing the theoretical and empirical effect of specific and durable veto players institutions on investor *behavior*, this study advances our understanding of the relationship between institutions and property rights. The introduction of a behavioral indicator as the dependent variable eliminates some of the sources of endogeneity bias that plagues much of the existing research.

The article has argued that political checks and balances improve the property rights of investors by making opportunistic policy changes more difficult. Empirical evidence from 127 countries over 30 years supports the claim by demonstrating a robust negative relationship between veto players and foreign currency substitution, a common hedge against domestic currency depreciation. By contrast, the results reported here do not support the contention that democracy is a sufficient condition for property rights.

Future research would benefit from the development of additional rule-based, replicable measures of institutions, which could be used to test the effects of such arrangements on the property rights to a variety of assets. Such an approach follows an assumption made explicit by Haber, Razo, and Maurer (2003): Property rights are private goods, subject to the selective specification and enforcement. To the extent that institutions constrain governments in different ways, the impact of institutions on the assignment and

enforcement of property rights will likely depend on the particular property in question.

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Notes

1. Critiques of the institutionalist view usually come from two directions. One argues that institutions may be less important than the partisan interests of those with political power, who can bend institutions to their will (Gourevitch, 2006; Stasavage, 2002a). The second criticism involves the conventional research methodology, which typically employs subjective indicators of property rights protection produced by external ratings agencies or think tanks. Glaeser, La Porta, Lopez de Silanes, and Shleifer (2004) argue that these subjective empirical proxies for institutions confound institutions with policy choices and therefore cannot be used to explain economic outcomes. Despite their disagreements, however, institutionalists and their critics appear to agree on the primacy of property rights to economic outcomes; it is the determinants of the property rights regime that constitute the core of the debate. As Haggard et al. (2008) note,

   > There seems to be a reasonably strong consensus that property rights matter, supported by both cross-national and survey work. But there is also concern that the security and enforcement of property rights might be wholly endogenous to some antecedent political conditions. (p. 209)

2. Although not all foreign currency deposits are dollars, this article follows the literature by referring to deposit dollarization and foreign currency substitution interchangeably.
3. The separation of purpose refers to the diversity of interests among political actors. Cox and McCubbins (2001) argue that the separation of purpose derives

from the strength and number of political parties, which emerge from electoral laws and institutions. For example, single-member districts and open-list proportional representation weaken political parties (Carey & Shugart, 1995) and high district magnitudes increase the number of parties (Cox, 1997). Weak and numerous political parties contribute to the separation of purpose.

4. As is common in this literature, domestic currency is referred to as the "peso," whereas the foreign currency is the "dollar."
5. The so-called "third generation" of financial crisis literature (Aghion, Bacchetta, & Banerjee, 2001; Krugman, 1999) attempts to explain the wave of crises that hit Asia and Latin America in the 1990s, emphasizing the borrowing decisions and currency holdings of domestic investors as opposed to previous models that emphasized unsustainable macroeconomic policies. In the third-generation models, depreciation of the local currency (and the expectation of future depreciation) initiates a decline in economic activity because of the harmful effects of currency mismatch in the real sector. The risk of currency mismatch is straightforward: If liabilities are dollarized, and assets and income streams are denominated in local currency, a depreciation of the domestic currency will decrease the net worth of the dollar borrower. Banks are especially vulnerable since minimizing exposure to currency mismatch implies matching asset dollarization with liability (deposit) dollarization. This means that bank assets are also subject to depreciation risk to the extent that borrowers become insolvent because of currency mismatches on their own balance sheets (Mishkin, 1996).
6. In particular, the identification of causal relationships between contemporaneous economic variables and foreign currency substitution is tenuous since it is likely that the economic factors such as inflation and growth are themselves influenced by the level of foreign currency in the financial system, as the literature on the consequences of dollarization emphasizes (see Levy-Yeyati, 2006). Furthermore, these economic factors are likely endogenous to the political institutional arrangements advocated here, most notably those that constrain policy-maker discretion.
7. The proxies for "good institutions" are typically "indices of indices" in the sense that they aggregate institutional measures of governance from a variety of ratings agencies and risk services. The most commonly employed measures are those developed by Kaufmann, Kraay, and Zoido (2003), which synthesize several hundred indicators to provide measures of governance along six dimensions: government effectiveness, political stability, rule of law, corruption, quality of economic regulation, and voice and accountability. In Levy-Yeyati (2006) and de Nicolo, Honohan, and Ize (2005), these six dimensions are then averaged to create a single variable. Honig (2009) aggregates the International Country Risk

Guide assessments of bureaucratic quality, corruption, and law and order into a measure of the overall quality of government.

8. For instance, if bank managers and depositors expect to be bailed out in the event of financial crisis, they will not fully internalize foreign currency mismatch risk. Rather, they will take advantage of the stability that foreign currency provides, assuming that the government will intervene in the event of a large macroeconomic shock. The focus on moral hazard created by the expectation of government bailout follows the analytical models of Mishkin (1996), McKinnon and Pill (1999), and Burnside, Eichenbaum, and Rebelo (2001).
9. For more on the distinction between checks and polcon, see Henisz and Mansfield (2006).
10. Polcon 5 includes the judiciary and federalism as separate veto players.
11. As an unreported robustness test, I include the Quinn (2003) measures of capital account openness. My main results hold to this alternative indicator, but the sample size reduces substantially.
12. The election and polarization variables are both from the Database of Political Institutions (Beck, Clarke, Groff, Keefer, & Walsh, 2001).
13. A simple bivariate regression of the average value of checks on the initial value of checks (not reported) yields an R^2 value of .24.
14. I experimented with a blunt dummy variable for pegged regimes, and this variable did not enter significantly either.
15. Trade is measured as (imports + exports) / GDP. Data are from the World Development Indicators.
16. Foreign currency regulations is a discrete variable measuring the degree of restrictions on dollar deposits in the banking system. It ranges from 1 (*no restrictions on foreign currency deposits*) to 5 (*dollar deposits prohibited in all cases*). The average value of .57 indicates that most countries do not place major restrictions on foreign currency deposits.
17. Though intuitive, the relationship between foreign currency regulations and foreign currency deposits should be interpreted with caution for two reasons. First, it is likely that the dollar restrictions are endogenous to some other political or economic factors. Second, the restrictions variable corresponds to regulations in 2001, which means it reflects restrictions on dollar deposits only near the end of the sample period.
18. The data correspond to the latitude of the center of the county or that of the most populace province. Following Hall and Jones (1999), the variable is standardized as the absolute value of latitude, divided by 90.
19. The Hansen *J* statistic is 3.038, with a corresponding *p* value of .219.

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Bio

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