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Domestic Political Institutions and Exchange Rate Commitments in the Developing World

David A. Leblang

University of North Texas

Policymakers use a fixed exchange rate regime to signal their commitment to low inflation and to exchange rate stability. Increasing economic integration and the rise of democratic institutions make it more difficult for policymakers to maintain the credibility of this commitment. We use binary probit (with a variety of corrections for autocorrelated and heteroscedastic disturbances) to test hypotheses relating democratic institutions to exchange rate regime choice on a sample of 76 developing countries over the period 1973–1994. The empirical analysis indicates that domestic political preferences—as measured by the structure of domestic political institutions and the fractionalization of the party system—influence exchange rate regime choice. We find that floating exchange rate regimes are more likely in democratic than in nondemocratic polities and that democratic polities with majoritarian electoral systems are more likely to fix their exchange rates than those with systems of proportional representation.

The growth of international capital markets is truly extraordinary. Cross-border capital flows dwarf those of international trade: recent estimates suggest that foreign exchange trading alone now exceeds one trillion dollars a day. The magnitude and volatile nature of international capital flows has led some political economists to suggest that increased economic integration and capital mobility has become so pervasive that it now acts as a "structural characteristic of the international system, similar to anarchy" (Keohane and Milner, 1996:257). These scholars point to globalization as a crucial factor leading to a convergence of economic policy in the industrialized world. While a wave of economic liberalization has swept OECD economies, governments in developing countries still use a variety of traditional economic tools to protect the relative autonomy of their domestic policies. Vital in this process is exchange rate policy for it is the exchange rate that serves as a buffer between international and domestic markets.

Even after the collapse of the Bretton Woods system of pegged exchange rates, most developing countries continue to fix the value of their currency to that of their major trading partner. The logic is clear: by fixing the domestic currency's value to that of a trading partner, exchange rate volatility is minimized. As a result, bilateral flows of capital and goods are not disrupted by exchange rate uncertainty and

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bilateral trade and investment would be encouraged. This logic not only motivated the pre–World War I gold standard and the postwar Bretton Woods dollar exchange standard, but also stands as a prime motive behind the European Monetary System.

A fixed exchange rate regime provides a nominal anchor for monetary policy and a clear signal regarding both domestic and international price stability; however, it does require that national governments subordinate domestic policy autonomy to the goal of price stability. Floating exchange rate regimes, on the other hand, provide domestic policy autonomy but risk both inflation and exchange rate volatility. While volatile exchange rates may not inhibit trade and cross-border investment between industrialized countries, the absence of forward markets in currencies of most developing countries makes exchange rate volatility potentially very costly.

This paper argues that politicians in developing countries choose an exchange rate regime based not solely on economic characteristics of their country's market, but with an eye to political considerations as well. Concomitant with the growth of international capital markets has been both the move from pegged exchange rates to floating exchange rates and the transition from authoritarian toward democratic institutions in the developing world. We find that countries with democratic institutions are more likely to adopt a floating exchange rate regime than countries with authoritarian structures of governance. Further, the empirical evidence suggests that there is considerable variation within the set of democratic countries. We find that countries with electoral systems that follow proportional representation are more likely to float than countries with majoritarian electoral systems.

The remainder of this paper is organized as follows. Section two discusses the literature from political science and economics that addresses the issue of exchange rate regime choice. Section three draws these literatures together and develops a stylized model of exchange rate regime choice that emphasizes the role of democracy, democratic electoral institutions, and party fractionalization. The arguments in this section suggest that policymakers in democratic polities tend to prefer floating exchange rate regimes whereas policymakers in authoritarian polities prefer to fix their exchange rate. Within the set of democracies, however, floating exchange rate regimes are more likely in those countries where elections are governed by proportional representation. In section four these deductions are empirically tested on a panel of 76 developing countries over the period 1973–1994. Section five concludes and offers suggestions for future research.

Exchange Rate Regime Choice: Theoretical Issues

The exchange rate is one of the most important ways that a government interposes itself between domestic and international markets. It is not surprising, then, that considerable scholarly attention has been paid to exchange rate regime choice. The basic ideas are these: a pegged (fixed) exchange rate regime imposes discipline on domestic monetary policy. This discipline arises due to the constraint that the balance of payments places on an economy. The total supply of money in an economy is a combination of foreign exchange reserves (which reflect the balance of payments) and domestic credit (which reflects domestic monetary policy). To maintain the pegged value of a currency, an increase in demand for foreign exchange must be offset by the central banks' purchase of foreign exchange. Otherwise pressure will be put on the exchange rate. If the money supply (domestic credit) grows faster than money demand then pressure will be put on foreign reserves and, subsequently, on the exchange rate. If the money supply continues to outstrip demand for local currency, then reserves become depleted and the central bank is no longer able to intervene in international currency markets to maintain the pegged value of the domestic currency. Thus a pegged exchange rate can be

viewed as an international constraint on domestic economic policy; governments can only implement domestic policies consistent with the maintenance of the peg.[1]

Flexible exchange rates, on the other hand, do not require substantial holdings of foreign reserves, nor do they require monetary policy to be consistent with the maintenance of a currency peg. That is, flexible exchange rates require less maintenance and they provide governments with more domestic economic policy autonomy. In addition, flexible exchange rates provide the domestic economy with a measure of insulation from international economic shocks in that policymakers can choose a variety of policy tools to smooth consumption and/or investment. For example, a flexible exchange rate allows policymakers to choose an appropriate balance between inflation and output (employment) without being constrained by international factors.

While advantageous, a flexible exchange rate regime is not a panacea. A flexible exchange rate regime provides no assurance to economic actors that the government will not engage in inflationary or expansionary activity. Further, forgoing a fixed exchange rate means that international markets have no clear signal with which to guide their decisions regarding trade and investment. This is one reason that nations in the world economy have been operating under some sort of fixed or pegged exchange rate for most of the past 100 years. The primary motivation behind the international gold standard prior to World War I and the Bretton Woods system was that a system of pegged exchange rates would not only constrain policymakers and decrease the frequency of inflationary policies but also stabilize expectations and increase international trade and capital flows (Simmons, 1994; Eichengreen, 1996).

Given these domestic and international macroeconomic constraints, what determines exchange rate regime choice? It is clear that however ubiquitous the influence of international capital, countries in the developing world have responded differently. While there has been a steady trend away from fixed exchange rates since the end of Bretton Woods, as Figure 1 indicates, by 1995 only half of all non-OECD IMF member states had adopted a floating exchange rate.

Two broad literatures have addressed the problem of exchange rate regime choice. First, literature from economics has produced models and empirical answers to this question based on characteristics of a country's economy. Given certain factors such as economic openness, country size, and labor mobility, the optimal exchange arrangement can be determined (e.g., see Dreyer, 1978; Heller, 1978; Holden et al., 1979; Wickman, 1985; Savvides, 1990). Extensions of this literature consider the influence of country-specific shocks emanating from both the international and the domestic economy (Fischer, 1977; Savvides, 1990). The major problem with models from this tradition is that the preferences of policymakers are assumed to be fixed and exogenous. The analytical usefulness of these models diminishes once it is recognized that different conclusions can be (and often are) reached depending on initial assumptions regarding policymakers' preferences over either price stability or aggregate output or both (Melvin, 1985; Aghevli et al., 1991).

Political scientists and political economists have also examined exchange rate regime choice albeit in a less prescriptive and more descriptive fashion. A large portion of the literature focuses on the presence (or absence) of an international power (hegemon) that yields sufficient resources to manage the international economic system (Keohane, 1984). It is through the lens of hegemonic stability theory that political economists have viewed the period of the classical gold standard

[1] These processes are discussed in any good macroeconomics or international economics text. Lucid discussions are contained in McCallum, 1995, and in Corden, 1994.

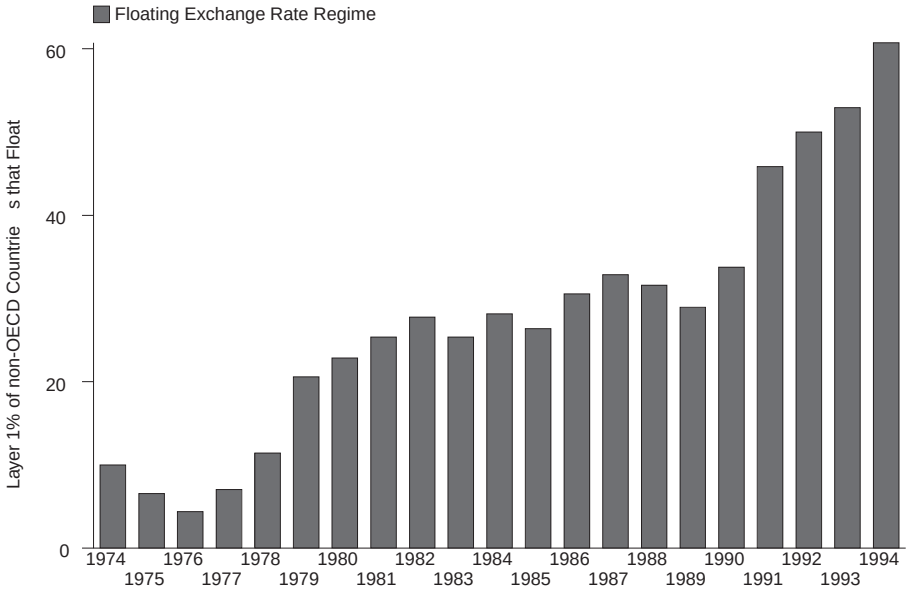

FIG. 1. Trends in Exchange Rate Regime Choice in the Developing World

where the British backed the world's currency and stood as a lender of last resort (Kindleberger, 1973; Gallaratti, 1993). The presence of a hegemon, this literature argues, allowed for the smooth functioning of the international monetary system both during the classical gold standard and during the Bretton Woods regime (e.g., see Gowa, 1983; Keohane, 1984; Eichengreen, 1989). On the other hand, the absence of a hegemonic power led to competitive devaluations and beggar-thy-neighbor policies during the interwar period (e.g., see Eichengreen, 1992; Simmons, 1994). Nixon's closing of the "gold window" and the subsequent breakdown of the Bretton Woods regime left, in the words of one observer, a "managed non-system" (Corden, 1994). The amended Articles of Agreement of the International Monetary Fund gave countries the ability to choose any exchange rate arrangement so long as they did not peg to gold.

The new wave of scholarship from political economists suggests that disembodied international capital flows can be just as influential as hegemonic control. In a recent review of work on the internationalization of finance, Benjamin Cohen noted that "[A]t a minimum, financial globalization has put governments distinctly on the defensive, eroding much of the authority of the contemporary sovereign state. At a maximum, it may have irreversibly altered the meaning of geography in the world today" (1996:270). The popular press echoes this sentiment suggesting that the power of international finance has created a situation where states have "surrendered to markets" (Peterson, 1995).[2] This line of scholarship, which does lend itself to hyperbole, suggests an international trend that must be taken seriously: advances in technology and the growth of off-shore markets act as a constraint on (or a competitor with) sovereign economic power (Frieden and Rogowski, 1996).

While some of the scholarship examining "globalization" or "internationalization" may be quick to lay a wreath upon the grave of state sovereignty, other political economists have developed models emphasizing the interaction of domestic and

[2] Scholars who focus on advanced industrialized democracies echo this sentiment. Freeman, for example, has written that, given the internationalization of finance, "the nation state has become at best immobilized and at worst obsolete" (1992).

international factors in the process of liberalization.[3] While the majority of this work focuses on international trade, there is a growing literature that examines macroeconomic policy change and exchange rates (e.g., see Frieden, 1991; Simmons, 1994; Frieden and Rogowski, 1996; Bates, 1997; Clark and Reichert, 1998; Bernhard and Leblang, 1999). For the most part, models developed by these authors focus on the preferences of demanders of economic policy as they are aggregated either in specific sectors (e.g., see Frieden, 1991) or in interest groups (e.g., see Gowa, 1983; Garrett and Lange, 1996).[4]

The importance of societal preferences and pressures cannot be ignored; however, a myopic focus on societal factors ignores the importance of those who determine and supply policies: politicians (Bernhard and Leblang, 1999). Politicians seek to maintain their office and are concerned with the balance of political forces they must face. As such, macroeconomic policy may reflect the desires of policymakers rather than the preferences of constituencies.[5] As noted above, a pegged exchange rate limits the amount of discretion that policymakers can have over domestic monetary policy. This limitation is magnified in an era of high capital mobility. The willingness of a policymaker to give up monetary policy autonomy for the sake of external monetary stability depends on, in part, the configuration of domestic political institutions. It is to a consideration of these institutions that we now turn.

Democracy and Exchange Rate Commitments

We approach the linkage between democracy and exchange rate regime choice from two different but complementary perspectives. The first draws upon inductive examples both from the experiences of the European democracies during the period between World War I and World War II and from the more recent experiences of developing economies. The second perspective is informed by the more recent game-theoretic literature on economic policy choice.

Drawing on the diverse experiences of both older European and newer non-European democracies, we can identify a key factor influencing policymakers to choose a floating exchange rate regime: the policymaker's need for domestic monetary autonomy. First and foremost, the process of democratization with the concomitant extension and expansion of suffrage to previously disenfranchised groups increases pressure on government to engage in redistributive policy. The distributive conflict that emerges results in high inflation either through cost-push factors where labor is strong and wages are high or via expansionary fiscal policy.[6] In an open economy high inflation (all other things being equal) exerts downward pressure on the exchange rate. Policymakers must then decide between continuing to use expansionary monetary policy and devaluing the currency. It was this conflict during the interwar period that placed increased pressure on the policymaker's commitment to defend the peg of their currency (Eichengreen, 1992). "Open political conflict," Simmons explained,

[3] This scholarship seems to be following the call issued by Haggard and Simmons over ten years ago: "We suggest a research program that views international [politics] not only as the outcome of relations among states, but of the interaction between domestic and international games and coalitions that span national boundaries" (1987:513).

[4] This literature is well developed insofar as industrial economies are concerned. Most of this literature focuses on the development of alternative exchange rate arrangements in Europe, including the Snake, the European Monetary System, and the planned transition to a single currency (e.g., Eichengreen and Frieden, 1994).

[5] There are enormous literatures both on time-inconsistent monetary policy and on political business cycles that address these very issues. For good reviews see Alesina, 1994, and Keech, 1995.

[6] This has been described by Haggard and Kaufman as "a 'bidding war' among contending political elites vying for support" (1992:271). Alesina and Drazen (1991) call this "a war of attrition" in a model of delayed stabilizations.

"undermined the certainty that a government would honor its commitment to defend the currency in light of pressures to inflate" (1994:28).

Not only did the extension of the franchise increase pressures on governments in industrialized economies to engage in inflationary policy during the interwar period, the rise of democratic regimes in the developing world is highly correlated with an increase in inflation (Haggard and Kaufman, 1995). One explanation for this phenomenon is that political elites are better able to implement stable and low inflationary policies when they are insulated from the distributive demands of the citizenry.[7] We argue, therefore, that policymakers in democratic countries face pressures to engage in and to implement more redistributive policies than policymakers in authoritarian governments. As such, democracies are more likely to adopt a floating exchange rate because this allows monetary policy to be directed toward domestic targets/desires rather than at the maintenance of the exchange rate.

While we believe that when compared to authoritarian regimes democracies will be more likely to have floating exchange rate regimes, we do not see democracies as a homogenous group. Within the set of democratic countries institutional differences can influence the choice between floating and fixed exchange rate regimes. This argument is developed in Bernhard and Leblang (1999) for industrial democracies and is applied here to the developing world.

Bernhard and Leblang (1999) argue that given the assumption that policymakers prefer to remain in office, it is important to explore the type of electoral institutions that keep them in power. While a commitment to a fixed exchange rate can help to stabilize exchange rate expectations and to facilitate international trade, it does limit the discretion that politicians have over domestic monetary policy. It is the configuration of domestic electoral institutions, they argue, that affects a politician's willingness to give up discretion over macroeconomic policy.

A review of the literature, however, reveals no clear consensus on the relationship between electoral institutions and exchange rate regime choice in developing countries. There are good arguments linking majoritarian electoral institutions to a floating exchange rate and there is a compelling case that coalition governments (which often result from systems of proportional representation) pursue expansionary policies and thus would also prefer a floating regime. We examine these arguments in turn.

The logic linking majoritarian electoral systems to a floating exchange rate suggests that policymakers in these systems cannot risk having their hands tied when it comes to domestic monetary policy. Because majoritarian electoral systems tend to "manufacture" single-party majority governments, alterations in a small number of votes can lead to large changes in the distribution of legislative seats (Lijphart, 1984). As a consequence, politicians in the governing party will be unwilling to part with any policy instrument that can assist them in gaining an electoral majority.[8] By pegging the exchange rate policymakers would surrender that vital instrument. Therefore policymakers in majoritarian systems would prefer to allow the currency to float (Bernhard and Leblang, 1999).

Following this line of reasoning, Bernhard and Leblang (1999) argue that since elections in proportional representation (PR) systems do not usually result in single-party majority governments, politicians in these systems do not need to rely as heavily on the tool of monetary policy. In PR systems the identity of the government is usually determined by bargaining between and among parties.

[7] There is a large literature on this issue. See Keech, 1995, for an overview and Rogoff, 1985, and Bernhard, 1998, for a discussion with special reference to central bank independence. Maxfield (1998) explores central bank independence in developing countries.

[8] This is especially true in the run up to elections as the literature on political business cycles points out (Nordhaus, 1975; Hibbs, 1977).

Consequently a party may lose a few votes in an election, but retain the possibility of participating in government. Since small vote swings do not necessarily have dramatic consequences for the composition of government, politicians in these systems may be less reticent to relinquish discretionary control over monetary policy by fixing the exchange rate. Moreover, a fixed exchange rate might actually help in coalition bargaining by providing a focal point for parties with diverse interests over monetary and economic policy. A pegged exchange rate is a "transparent" policy rule—that is, it can be observed at any time and is not subject to the long lags inherent in obtaining inflation and money supply data from the government (Aghevli et al., 1991). Parties in a coalition government might agree on a fixed exchange rate focal point simply as a way to settle conflicts about policy. In proportional representation systems where coalition or minority governments are common, therefore, politicians are more likely to fix their exchange rate.

On the other hand, there are good arguments suggesting the PR systems are more likely than majoritarian systems to adopt floating exchange rate regimes. Little debate remains regarding the relationship between proportional representation systems and the fragmentation of the party system (Duverger, 1954; Rae, 1967; Lijphart, 1990; Cox, 1997). In countries with PR electoral systems it is easier for fringe parties to gain legislative voice and minority parties often become key players in governing coalitions. Fragmented party systems allow increased competition among politicians and parties for particularistic policies. Party fragmentation leads to what Haggard and Kaufman (1992) have called a "bidding war" among policymakers that are competing for political support. In addition, coalition governments are often held together by side payments and other types of expansionary policies (Roubini and Sachs, 1989). As a result, policymakers in PR systems will be more likely to adopt a floating exchange rate regime so that domestic monetary and fiscal policy can be used for electoral gain.[9]

Both sets of arguments make good sense. We believe, however, that politicians in PR systems in the developing world will be more likely to adopt a floating exchange rate regime for two reasons. First, developing countries often have limited safety nets in place for their citizens. That is to say, fewer resources are devoted to the maintenance of the modern welfare state. In this situation, if government does not engage in redistributive policy then many citizen demands will go unfulfilled (Rodrik, 1997). In PR systems politicians are more likely to pursue inflationary policies and thus will desire the freedom afforded by a floating exchange rate.

Second, politicians in PR systems find themselves in coalition governments more often than not. As such, they are going to be adverse to implementing risky policies. Choosing a pegged exchange rate puts policymakers at risk of having to either publicly devalue the currency or forgo domestic policy goals. The political risks of devaluation are not trivial. Jeffery Sachs and colleagues echo the view of many others: "governments that commit to a peg and then renege on the promise typically face costs—loss of pride, voter disapproval, maybe even removal from office—that need not be proportional to the size of the devaluation" (1996:8). As such, policymakers in PR systems will be less willing to confront this risk and will, therefore, choose a floating exchange rate regime.

In sum, policymakers in democratic countries are more likely than their counterparts in authoritarian countries to adopt floating exchange rate regimes. This is due to the increased pressure for distributive and expansionary policy that occurs when more diverse groups are included in the policymaking and electoral process.

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[9] Eichengreen's study of the interwar gold standard reviews many of these arguments. His findings do not point to a sharp hypothesis, however. Countries with PR systems did indeed suffer high inflation during the interwar period, yet remained on the gold standard (Eichengreen, 1992:25–26).

Within the set of democratic countries, we expect that countries with proportional representation electoral systems will be more likely to adopt floating exchange rate regimes than those countries with majoritarian institutions. We test these propositions in the following section.

Empirical Analysis

In this section we test the propositions relating political democracy and electoral system type to the choice of an exchange rate regime. The sample comprises 76 countries from the developing world over the period 1974–1994. The countries and years included in the sample are determined by data availability. Before 1973 most developing countries participated in the Bretton Woods exchange rate system and pegged their currencies to the U.S. dollar. Since the empirical model estimated below includes a lagged endogenous variable, our sample begins in 1974. The sample ends in 1994 because that is when the data set measuring our democracy variables ends.[10]

Given that the choice between a pegged and a floating exchange rate regime is a dichotomous choice we employ a probit model. The pooled cross-sectional and time-series nature of the sample necessitates the use of a statistical model to account for autocorrelation and heteroscedastic disturbances. We utilize the technique suggested by Allison (1982) and extended by Beck, Katz, and Tucker (1997). This statistical approach begins with the assumption that binary panel data are grouped duration data. As such, problems such as serially correlated errors can be solved by including a set of dummy variables that take into account the length of time since the country's last "failure." In the present context, "time since prior failure" means the elapsed time since the last alteration in the exchange rate regime. Heteroscedasticity, or unequal variation across countries, is taken into account through the estimation of Huber's robust standard errors.[11] Alternative estimation procedures are discussed below.

Dependent Variable

While governments have a range of choices regarding the choice of an exchange rate regime, we narrow the focus to a choice between pegged and flexible rate regimes for a number of reasons. First and foremost, by focusing on polar cases we can learn quite a bit about the dynamics of political choice insofar as exchange rate regime choice is concerned. Second, for the purpose of the arguments developed in the prior section, regimes with limited flexibility such as a crawling peg have the form of a pegged regime because the monetary rule is visible to the public. Third, none of the discussion in either the political science or economics literature suggests the point at which a policymaker will choose to move within types of pegged or floating regimes.

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[10] The panel we use is not balanced; that is, not all countries are observed for all years. We have between 55 and 76 countries each year with most of the missing observations occurring either at the beginning or at the end of the period under investigation. Countries in the sample are: Algeria, Bahrain, Bangladesh, Benin, Bhutan, Bolivia, Botswana, Brazil, Burundi, Cameroon, Central African Republic, Chile, Congo, Costa Rica, Cyprus, Dominican Republic, Ecuador, Egypt, El Salvador, Ethiopia, Fiji, Ghana, Guatemala, Guyana, Haiti, Honduras, Hungary, India, Indonesia, Israel, Ivory Coast, Jamaica, Jordan, Kenya, Kuwait, Lesotho, Liberia, Madagascar, Malawi, Malaysia, Mali, Mauritius, Mexico, Morocco, Nepal, Nicaragua, Niger, Nigeria, Oman, Pakistan, Panama, Papua New Guinea, Paraguay, Peru, Philippines, Poland, Rwanda, Saudi Arabia, Senegal, Sierra Leone, South Africa, Sri Lanka, Sudan, Swaziland, Tanzania, Thailand, Togo, Trinidad and Tobago, Tunisia, Turkey, United Arab Emirates, Uruguay, Venezuela, Zaire, Zambia, Zimbabwe.

[11] All the statistical models were estimated using the probit command in STATA statistical software. The code and data necessary to replicate the analysis and diagnostics are available upon request.

We code exchange rate regimes as being fixed (0) if they are fixed either to a single currency or to a currency composite (e.g., the Special Drawing Right), or if they have limited flexibility vis-à-vis a single currency or are adjusted according to a set of indicators. Those coded as floating (1) have either a managed or an independent float. Note that in the section evaluating the robustness of our results we do relax this operationalization and examine a wider range of exchange rate regime options.

Independent Variables

A policymaker's choice among exchange rate regimes is a function of four sets of variables. The first two are suggested by the literature on optimal currency areas (OCA). OCA models focus first on the size and position of an economy in the international economy. Countries that have smaller and more open economies tend to favor fixed exchange rate regimes whereas countries with larger and less open economies are more likely to float. We use the log of gross domestic product (gdp) in constant 1992 dollars to capture the size of the economy. Exports as a proportion of gdp is used to measure economic openness.[12] Both variables are from the International Monetary Fund's International Financial Statistics CD-ROM (IMF-IFS).

The second set of variables suggested by the OCA literature attempts to identify the vulnerability of an economy's output to shocks. Prior research using an open economy framework has found that greater domestic monetary disturbances make the adoption of a pegged exchange rate more likely. This literature has also found that foreign price disturbances prompt a government to adopt flexible exchange rates (Fischer, 1977; Melvin, 1985; Savvides, 1990). Domestic monetary disturbances are measured by the variability of domestic credit in a given year based on quarterly data. Foreign price shocks are operationalized in terms of the yearly variation in the real effective exchange rate again based on quarterly data. The data for these two variables come from the IMF-IFS.

The third set of variables concerns the nature and structure of a nation's political institutions. We use four different measures here. The first is a measure of political democracy constructed by Ted Gurr and updated to 1994 by Jaggers and Gurr (1996). According to Jaggers and Gurr, "institutionalized" democracy is made up of three elements: the presence of institutions through which individuals can express their preferences; the existence of institutionalized constraints on the use of executive power; and the guarantee of civil liberties to all citizens. This is a general measure of the openness of political institutions and is a weighted measure made up of four variables: (i) the competitiveness of political participation; (ii) the competitiveness of executive recruitment; (iii) the openness of executive recruitment; and (iv) the existence of constraints on the chief executive. The composite variable ranges from 0 to 10 with higher values indicative of a more democratic polity.

The second variable indicates whether the polity has open elections. We used one of the components of the democracy index (the variable measuring the competitiveness of executive recruitment) and created a dummy coded one if open elections existed and zero otherwise.

The third variable indicates whether a country has a proportional representation electoral system. This is a dummy variable coded one if PR is in place and zero otherwise. The data are from Inter-Parliamentary Union (1993), Cox (1997), and

[12] We also used imports/gdp and (exports+imports)/gdp as measures of economic openness. These measures are correlation at approximately .96. We chose exports/gdp because it makes more theoretical sense: policymakers in countries reliant on exports are going to be concerned with the stability of their exchange rate.

Blais and Massicotte (1997). The fourth variable is an index (ranging from 0 to 1) of party fractionalization based on a formula suggested by Rae (1968). This variable measures the number of different parties that have gained seats in the legislature. Higher values indicate more fractionalization. The data are from Banks (1995) and updated with Banks (various years).

Finally, we include three control variables suggested by the theoretical and empirical literatures. First, the literature on capital liberalization and financial openness as well as the Mundell-Fleming conditions argues that countries with capital controls are more likely to have fixed exchange rates (e.g., Haggard and Maxfield, 1996; Leblang, 1997). If a government has controls on the movement of international capital, then it is attempting to insulate itself from international price movements and will be more able to maintain a pegged exchange rate. We include a dummy variable coded one if a country has controls on the international movement of capital and expect this variable to have a negative sign. The data are from the IMF's *Annual Report on Exchange Arrangements and Exchange Restrictions.*

A second control variable also attempts to capture the influence of global capital movements. The literature on globalization suggests that the growth of global markets makes the maintenance of a pegged exchange rate more difficult. We measure the size of international financial markets via a variable that totals the value of international bonds issued and the value of international loans in a given year. The expectation is that this variable will be positive, indicating that the increased globalization of international finance makes states more likely to abandon a fixed exchange rate regime. This variable is from OECD *Financial Statistics Monthly.*

The final control variable is suggested by the literatures on balance of payment crises and speculative attacks (e.g., see Blackburn and Sola, 1993; Haggard and Maxfield, 1996; Sachs et al., 1996). These literatures argue quite forcefully that pegged exchange rate regimes cannot be maintained if international reserves become depleted. We measure this in terms of the ratio of international reserves to imports: if the central bank does not have sufficient reserves to cover claims then it will be forced to either devalue or abandon the peg. The IMF-IFS provides the data for this variable.

Finally, we include a lagged endogenous variable in all the models to capture the fact that it is difficult and costly to alter any given exchange arrangement. Descriptive statistics for all the variables included in the empirical analysis are included in Table 1.

Empirical Results

Table 2 contains the results from estimating a probit model on a sample of 76 developing countries over the period 1974–1994. For ease of presentation, cell entries in Table 2 are partial effects and are not estimated probit coefficients. The cell entries for the lagged endogenous variable (exchange regime $_{t-1}$), elections, and the PR variable represent changes in the predicted probability that a policymaker will adopt a floating exchange rate as these independent variables change from zero to one, all other variables being held at their means. Cell entries for the continuous independent variables are the effect of increasing the variable by one half of one standard deviation from the mean, again, with all other variables held at their means. All the models in Table 2 were also estimated with a full set of period dummy variables. Full results, with probit coefficients, standard errors, and period dummies, are contained in the Appendix.

Model 1 in Table 2 is the baseline model of exchange rate regime choice which includes only control (or baseline) variables. The log-likelihood ratio test rejects the null hypothesis that, taken together, none of the independent variables is systematically related to the decision to adopt a pegged or a floating exchange rate regime.

TABLE 1. Descriptive Statistics

Variable	*Mean*	*Std. Dev.*	*Min*	*Max*
Exchange Regime (t)	.2777018	.4480187	0	1
Exchange Regime (t-1)	.255814	.4364670	0	1
Domestic Credit	.1734614	.2297352	.1630289	6.396491
Real Exchange Rate Shock	.9549759	1.30934	0	5.777245
Capital Controls	.8166895	.3870533	0	1
Exports/GDP	.3121195	.2061346	.0132274	1.314558
Log (GDP)	23.70769	4.883388	–1.305838	35.89438
Reserves/Imports	.2613387	.266855	.0007377	2.419421
International Financial Mkts.	12.62631	.4478915	11.68347	13.1267
Elections	.3276334	.469510	0	1
PR Electoral	.1354309	.3423003	0	1
Party Fractionalization	.2763599	.3239635	0	.9956
Democracy	3.054036	3.945794	0	10

The model also "fits" the data very well based on two statistical criteria. First, the correlation between the actual value of the dependent variable and the predicted probability is .82 and is statistically significant.[13] In addition, McFadden's adjusted R^2 is also above what would have been anticipated by pure chance. Second, the model correctly classifies a high percentage of both peggers (96%) and floaters (83%).

Most of the baseline variables are statistically significant and in the expected direction. The coefficient on the lagged endogenous variable is positive and significantly different from zero, indicating that, all other things being equal, policymakers are reluctant to alter their exchange arrangement. In fact, countries with floating exchange rate regimes in the prior period are 82 percent more likely to retain those regimes in the present period than they are to change to a pegged exchange rate regime. Insofar as a country's vulnerability to shocks is concerned, the optimal currency area literature suggests that domestic shocks make a fixed exchange rate regime more likely whereas foreign shocks make floating exchange rate regimes more likely. The empirical results suggest that at least part of this expectation cannot be rejected. Countries that experience domestic shocks as measured by the variability of domestic credit are more likely to fix their exchange rate. The influence of foreign currency shocks on exchange rate regime choice is not statistically discernible.

With regard to the economic variables, policymakers in countries reliant on exports are more likely to fix their exchange rate than are policymakers whose economies are not trade dependent. The size of an economy as measured by the log of gross domestic product and the size of foreign reserve holdings do not have a statistically significant effect on exchange rate regime choice. Finally, variables capturing the influence of the external environment are statistically significant and in the expected direction. Countries with capital controls are 10 percent more likely to fix their exchange rate than those countries without capital controls. This finding is consistent with the wealth of studies in the tradition of Mundell-Fleming that argue that policymakers with capital controls fix the exchange rate so that they can maintain a degree of domestic monetary autonomy. Additionally, the variable measuring the growth of international financial markets is positive and statistically

[13] This measure is the correlation between the observed value for exchange rate regime (0 or 1) and the predicted probability given the model. This measure gives a sense of the distance between the actual and the predicted values of the dependent variable. It should be noted, however, that this correlation measure is not bounded above by 1.0.

TABLE 2. Probit Models of Exchange Rate Regime Choice
(Dependent Variable = 1 if Float; 0 if Fixed)

Variable	*Model 1*	*Model 2*	*Model 3*	*Model 4*	*Model 5*
Exchange Regime (t-1)#	0.82*	0.81*	0.81*	0.81*	0.80*
Domestic Credit Shock	–0.03*	–0.03*	–0.03*	–0.03*	–0.03*
Real Exchange Rate Shock	0.01	0.02	0.02	0.02	0.02
Capital Controls#	–0.11*	–0.12*	–0.12*	–0.13*	–0.10*
Exports/GDP	–0.06*	–0.06*	–0.06*	–0.05*	–0.04*
Log (GDP)	–0.01	–0.02	–0.02	–0.01	–0.00
Foreign Reserves/Imports	0.01	0.01	0.01	0.01	0.01
International Financial Mkts.	0.12*	0.11*	0.11*	0.11*	0.11*
Democracy		0.04*			
Elections#			0.10*	0.05	0.04
Proportional Representation#				0.13*	0.12*
Party Fractionalization					0.04
Model chi^2	983.07	997.55	1037.06	1063.21	1187.63
Prob > chi^2	0.0000	0.0000	0.0000	0.0000	0.0000
Corr (y & y-hat)	0.8237	0.8247	.8253	0.8269	.8280
% Fix Correctly Classified	96	96	96	96	96
% Float Correctly Classified	83	83	83	83	83
BIC'	–786.3	–793.5	–833.01	–851.87	–968.998
McFadden's Adjusted R^2	0.5480	0.5527	0.5600	0.5709	0.5993

Note: N = 1,462 for all models. Cell entries are effect of a one-unit change for a dummy variable and for a half of one standard deviation change for continuous variables on the probability that a country will adopt a floating exchange rate regime.

All models are estimated with a set of t-1 period dummies, not reported.

Standard errors for hypothesis tests are estimated via Huber's robust standard error matrix and account for unequal variances across countries.

# indicates that the variable is a dummy variable.

*two-tailed test, $p < .05$.

BIC' is the Bayesian Information Criteria adjusted for degrees of freedom.

significant suggesting that the growth of international markets makes it more difficult for policymakers to maintain a pegged exchange rate regime.

What influence do political institutions have on exchange rate regime choice? Column 2 in Table 2 adds the Jaggers and Gurr (1996) eleven-point democracy measure to the baseline economic model. The coefficient and standard error for the democracy variable allow us to reject the null hypothesis that democracy has no influence on exchange rate regime choice. Countries that are more democratic, all other things being equal, are more likely to adopt floating exchange rate regimes. The cell value reported in Table 2 is the extent to which changing the value of democracy by one half of one standard deviation from its mean value changes the probability that a government will adopt a floating exchange rate. More concretely, a 2-unit increase in a country's democracy score from the sample mean of 3 to 5 increases the probability that that country will adopt a floating exchange rate regime by approximately 4 percent.[14] While this might appear to be a very small effect numerically, it is certainly not trivial given the difficulty of instituting and maintaining democratic political institutions.

[14] Given that independent variables in probit models can have a nonlinear influence on the probability of Y, we graphed the relationship between democracy and the dependent variable and found that it appeared relatively linear. As such, this estimate is fairly accurate even if we do not stick to mean conditions.

Given that our arguments speak directly to the influence of electoral systems on exchange rate regime choice, column 3 substitutes a dummy variable for the democracy variable. This dummy variable, called elections, is coded one if the country uses open elections for executive recruitment and zero otherwise. The coefficient on the election variable is statistically significant and positive, indicating that countries that rely on open elections are more likely than those with closed elections to have floating exchange rate regimes. Holding all other variables constant, policymakers in countries with open electoral systems are 10 percent more likely to float. Again, this supports our general hypothesis regarding democratic political institutions and exchange rate regime choice.

Within the set of democracies, however, we expect that there will be some variation. Not all democracies utilize the same electoral rules and they are certainly not governed by identical institutions. The structure of electoral rules can help explain the variation in exchange rate practices. Our expectation is that countries with proportional representation electoral systems will be more likely to float than those with majoritarian systems. Column 4 adds the proportional representation variable (coded one if the country has PR) and the election variable to the baseline economic model. It is important to note that there is a high degree of dependence between these two measures. Countries can be coded as having a PR electoral system only if they also have open elections. Thus, all countries that have PR coded one will also have election coded one.[15] Given the way that the PR variable is coded, it is no surprise that these two variables are quite collinear. A log-likelihood ratio test, however, allows us to reject the hypothesis that, taken together, these variables have no statistically significant effect on the dependent variable (prob > chi^2 = 0.0006).

Interpretation of the electoral system variables is a bit tricky. The coefficient for elections in column 4 compares countries with majoritarian electoral systems to authoritarian countries; that is, to countries where the choice of political leaders is based on a closed system. The coefficient is now statistically insignificant and thus we are not able to discern a difference in exchange rate regime choice between majoritarian and authoritarian systems. The PR variable, on the other hand, is statistically significant and is positive. This indicates that countries with PR electoral systems are more likely than authoritarian or majoritarian countries to adopt floating exchange rate regimes. In addition, a test of parameter equality allows us to reject the null hypothesis that the coefficient for the PR variable is equal to the coefficient for elections (prob > chi^2 = 0.000). Substantively, this means that politicians in countries with PR systems are approximately 13 percent more likely than those in authoritarian countries to adopt floating exchange rate regimes. It also means that politicians in PR countries are approximately 8 percent more likely to select floating regimes than their counterparts in countries governed by majoritarian institutions.

Finally, we include Rae's measure of legislative party fractionalization in column 5. This variable is bounded by zero and one with higher values reflecting a more fractionalized party system. For most but not all authoritarian polities, party fractionalization is zero either due to fact that organized political parties are outlawed or because there is one dominant party. Our expectation is that politicians in countries with highly fractionalized party systems will be more likely to allow their exchange rates to float as a result of "bidding wars" described earlier. Again, we use

[15] For the 1,462 country years included in the sample, the cross-tabulation of elections and proportional representation is as follows:

		P.R.	
		0	1
Election	0	983	0
	1	281	198

a log-likelihood ratio test to test for the joint significance of party fractionalization, PR, and election due to potential endogeniety of these variables in PR systems. This test allows us to reject the null hypothesis and conclude that increased party fractionalization, all things being equal, makes politicians more likely to adopt floating exchange rate regimes.

We have thus far reached two broad conclusions. First, democratic countries are more likely than authoritarian countries to adopt floating exchange rate regimes. This conclusion holds if we use either the composite measure of democracy as developed by Gurr et al. (1995) or a simple dummy variable indicating that there is open executive recruitment. Second, democratic countries do not all act the same. Proportional representation electoral systems provide incentives to politicians that lead them away from fixed exchange rate systems. This effect is magnified as the number of parties in the legislature increases. Are these findings robust?

Robustness of Results

We evaluate the robustness of the results in Table 2 in two ways. First, we reestimated the probit models contained in using the general estimating equation framework.[16] We replicated all the models in Table 2 using this approach and found very little difference. No variables changed signs and all the variables that were statistically significant in Table 2 remained so with this approach. In the Appendix we include the replication of model 4.

The second robustness check relaxed the coding of the dependent variable. While coding exchange rate regime choice as a dichotomous choice between pegging and floating is justified, we want to make sure that the statistical results are not an artifact of this particular operationalization. As such, we employed a five-category coding following the IMF's Annual Report on Exchange Arrangements and Exchange Restrictions. The dependent variable is coded 0 if the country has a unilateral peg (e.g., to the U.S. dollar, the French Franc, or the Special Drawing Right); 1 if the country's currency has limited flexibility vis-à-vis other currencies; 2 if the country's currency is an adjustable peg (that is, if it is adjustable according to a set of indicators or if it is a crawling peg); 3 if the currency follows a managed float; and 4 if the currency is allowed to float independently.

We use generalized least squares, panel-corrected standard errors, and a panel-specific AR(1) term along with a set of lagged dummy variables to reestimate model 4 from Table 2 with a new dependent variable.[17] The results, included in Table 3, are supportive of the results reported in Table 2. The set of lagged endogenous variables are statistically significant as are the other control variables that were significant in Table 2. In addition, the election and PR dummy variables are jointly significant and correctly signed. Taken together, the structure of political institutions matters greatly. Politicians in countries with PR electoral systems prefer more flexible exchange rate regimes than those in both authoritarian and majoritarian systems. In addition, countries with PR will adopt more flexible exchange rate regimes than countries with majoritarian institutions.

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[16] The general estimating approach allows a great deal of flexibility when it comes to estimating cross-sectional time series models with dichotomous dependent variables. We implemented the xtgee procedure using STATA statistical software and specified that the error term followed an AR(1) process. We employed a probit link. Huber robust standard errors were also estimated.

[17] While we think that these are ordinal categories, there is not, at the time of this writing, a procedure to estimate ordinal models with panel data and lagged endogenous variables. Treating these as interval rather than ordinal categories may result in the results being a bit biased (Long, 1997), but since this is a robustness check, we are not that concerned. If we interpret these results as the manifestation of some underlying continuous choice among exchange rate regimes with varying degrees of flexibility, the results are not problematic.

TABLE 3. GLS Model of Exchange Rate Regime Choice

Variable	*Coefficient*	*Standard Error*
Constant	–4.00*	1.62
Fix (t-1)	–2.25*	0.12
Limited Flexibility (t-1)	–1.76*	0.25
Adjustable Peg (t-1)	–0.86*	0.26
Managed Float (t-1)	–0.27	0.16
Domestic Credit Shock	–0.33*	0.96
Real Exchange Rate Shock	–0.001	0.03
Capital Controls#	–0.33*	0.09
Exports/GDP	–0.48*	0.17
Log(GDP)	0.002	0.01
Foreign Reserves/Imports	–0.08	0.73
International Financial Mkts.	0.57*	0.13
Democracy		
Elections#	0.10	0.09
Proportional Representation#	0.34*	0.13
Model chi^2	932.83	
Prob > chi^2	0.0000	

Note: The dependent variable is coded as follows: 0=unilaterial peg; 1=limited flexibility; 2=adjustable peg; 3=managed float; 4=independent float.

N=1,462 for all models. Cell entries are ordinary least squares estimates obtained via gls. Standard errors are panel corrected standard errors. The model was estimated with a panel specific AR(1) term using the xtgls command in STATA.

# indicates that the variable is a dummy variable.

*two-tailed test, $p < .05$.

Discussion and Conclusion

This paper began by suggesting that domestic political institutions play a crucial role in the formation of international economic policy. Where other authors have examined the link between democracy and international commitments generally, there are fundamental differences not only between democratic and authoritarian countries but within democracies as well. Our argument is that politicians, who are the key suppliers of public policies, are sensitive not only to the demands of their constituents but to their own goals as well. The empirical results from the developing world indicate that policymakers in democratic countries are under more pressure to implement distributive and (potentially) inflationary policies than those in authoritarian regimes. As such, they are less willing to have their hands tied when it comes to domestic monetary policy. The result is that democratic countries are more likely to adopt floating exchange rate regimes. Further, policymakers in countries governed by proportional representation electoral systems are more likely to be in coalition governments and are more apt to be interested in serving narrower interests than their counterparts in countries with majoritarian institutions. The result is that countries with PR systems are more likely to adopt floating exchange rate regimes.

One question remains: how do these results square with the experience of industrialized democracies? Some European countries with proportional representation electoral systems, such as Italy, Austria, and Belgium, have abandoned floating exchange rate regimes and joined the European Monetary System in an effort not just to fix their exchange rates, but to abandon independent monetary

policy. Why are politicians in PR systems more likely to float in developing countries and more likely to peg in developed countries?

While we cannot answer this question here, there are at least three very promising areas for future research. First, the analysis in the present paper has ignored the role played by central banks in the developing world. While we have assumed that policymakers have independent and full authority when it comes to monetary policy decision-making, the existence of central banks and other domestic institutions (e.g., currency boards) may indeed limit the scope of this authority. Maxfield (1997) argues that central bank independence follows both the increase in capital mobility and the transition toward democracy in the developing world. Given the pressures for inflationary policies in democratic countries, independent central banks may provide a credible signal regarding price stability that is independent of the exchange rate regime. Unfortunately for empirical analysis, both de facto and de jure measures of central bank independence are lacking for the developing world.[18] The development of more comprehensive data on central banks and currency boards will allow scholars to investigate how domestic monetary institutions interact with both the exchange rate regime and electoral institutions.

The second area for future research concerns the relationship between the exchange rate regime and currency crises. The crisis in the European Exchange Rate Mechanism in 1992, the Mexican Peso crisis in 1994–95, the Asian currency crisis of 1997–98, and the Brazilian crisis of 1999 make it clear that exchange rate commitments are vulnerable to the "animal spirits" of international capital. While there has been an explosion of research in this area, the role of political factors has not received much—if any—scholarly attention (see Leblang, 1999, and Leblang and Bernhard, 1999, for exceptions). One natural way to proceed would be to examine the political determinants of financial flows and the measures employed by policymakers to signal their commitment to a fixed exchange rate. It is the perception of credibility by both international and domestic capital that will keep currency flowing into and not out of a country.

In addition, we need to develop better measures of legislative institutions in the developing world. The measures in the present paper would benefit greatly if they were supplemented with complementary data on the strength of legislative committees or with information regarding the number of electoral districts (Cox, 1997). These measures would help to identify more fully the preferences of and the constraints on policymakers.

Finally, what is needed to bring together different behavior across developing and developed economies is to integrate the preferences of the demanders of policy. Frieden (1991) and Rogowski (1987) provide sectoral and factoral explanations that would be useful. The interaction of domestic social coalitions, political institutions, and international capital flows condition a policymaker's "room to maneuver" (Garrett, 1998). The extent to which these factors vary across developing and developed economies is not yet understood.

[18] This should not be read to suggest that data do not exist; Cukierman (1992) and Cukierman et al. (1992) provide some data. However, the number of developing countries covered is limited and the data end in 1990. In addition, these data only reflect decade averages. Maxfield (1997) points out that South Korea's central bank became increasingly independent over the last 25 years but that this change is not picked up by the available coded data.

Appendix

Model 1

Probit Estimates

Number of obs = 1462
chi2(27) = 983.07
Prob > chi2 = 0.0000
Log Likelihood = –356.1252 Pseudo R2 = 0.5877
(standard errors adjusted for clustering on ifs)

1=Float	*Coef.*	*Std. Err.*	*z*	*P>|z|*
Float at t-1	2.738	0.127	21.52	0.000
Domestic Credit Shock	–0.402	0.092	–4.39	0.000
Real Exchange Rate Shock	0.029	0.046	0.63	0.529
Capital Controls	–0.360	0.150	–2.40	0.016
Exports/GDP	–0.909	0.332	–2.73	0.006
Log(GDP)	–0.008	0.015	–0.53	0.598
Foreign Reserves/Imports	0.159	0.239	0.66	0.507
International Financial Markets	0.967	0.394	2.45	0.014
year== 1974.0000	0.275	0.684	0.40	0.688
year== 1976.0000	–0.375	0.589	–0.64	0.524
year== 1977.0000	0.083	0.442	0.19	0.851
year== 1978.0000	0.029	0.350	0.08	0.934
year== 1979.0000	0.345	0.362	0.95	0.341
year== 1980.0000	0.241	0.323	0.75	0.455
year== 1981.0000	–0.137	0.308	–0.44	0.657
year== 1982.0000	–0.109	0.284	–0.38	0.703
year== 1983.0000	–0.132	0.390	–0.34	0.736
year== 1984.0000	–0.095	0.303	–0.31	0.754
year== 1985.0000	–0.541	0.230	–2.36	0.018
year== 1986.0000	–0.301	0.305	–0.99	0.323
year== 1987.0000	–0.337	0.314	–1.08	0.282
year== 1988.0000	–0.666	0.289	–2.30	0.021
year== 1989.0000	–0.739	0.271	–2.73	0.006
year== 1990.0000	–0.267	0.297	–0.90	0.369
year== 1991.0000	0.074	0.288	0.26	0.798
year== 1992.0000	–0.073	0.311	–0.23	0.815
year== 1993.0000	–0.121	0.337	–0.36	0.719
_cons	–12.856	4.862	–2.64	0.008

Model 2

Probit Estimates

Number of obs = 1462
chi2(28) = 997.55
Prob > chi2 = 0.0000
Log Likelihood = –353.00133 Pseudo R2 = 0.5913
(standard errors adjusted for clustering on ifs)

regime10 1=Float	*Coef.*	*Std. Err.*	*z*	*P>|z|*
Float at t-1	2.690	0.131	20.53	0.000
Domestic Credit Shock	–0.414	0.088	–4.70	0.000
Real Exchange Rate Shock	0.048	0.049	0.98	0.326
Capital Controls	–0.404	0.151	–2.67	0.007
Exports/GDP	–0.990	0.354	–2.80	0.005
Log(GDP)	–0.011	0.015	–0.75	0.452
Foreign Reserves/Imports	0.070	0.256	0.27	0.784
International Financial Markets	0.920	0.393	2.34	0.019
Democracy	0.035	0.015	2.26	0.024
year== 1974.0000	0.238	0.690	0.34	0.730
year== 1979.0000	0.355	0.365	0.97	0.332
year== 1980.0000	0.256	0.330	0.78	0.438
year== 1981.0000	–0.090	0.309	–0.29	0.771
year== 1982.0000	–0.071	0.290	–0.24	0.808

regime10 1=Float	*Coef.*	*Std. Err.*	*z*	*P>|z|*
year== 1983.0000	–0.096	0.394	–0.24	0.807
year== 1984.0000	–0.064	0.302	–0.21	0.832
year== 1985.0000	–0.496	0.234	–2.12	0.034
year== 1986.0000	–0.261	0.312	–0.84	0.403
year== 1987.0000	–0.280	0.321	–0.87	0.384
year== 1988.0000	–0.602	0.291	–2.07	0.038
year== 1989.0000	–0.692	0.279	–2.48	0.013
year== 1990.0000	–0.251	0.300	–0.84	0.402
year== 1991.0000	0.103	0.285	0.36	0.718
year== 1992.0000	–0.058	0.309	–0.19	0.850
year== 1993.0000	–0.114	0.335	–0.34	0.733
_cons	–12.238	4.845	–2.53	0.012

Model 3

Probit Estimates — Number of obs = 1462
chi2(28) =1037.06
Prob > chi2 = 0.0000
Log Likelihood = –351.55174 — Pseudo R2 = 0.5930
(standard errors adjusted for clustering on ifs)

regime10 1=Float	*Coef.*	*Std. Err.*	*z*	*P>|z|*
Float at t-1	2.685	0.129	20.82	0.000
Domestic Credit Shock	–0.439	0.090	–4.87	0.000
Real Exchange Rate Shock	0.057	0.050	1.15	0.250
Capital Controls	–0.403	0.152	–2.66	0.008
Exports/GDP	–0.974	0.357	–2.73	0.006
Log(GDP)	–0.013	0.015	–0.86	0.388
Foreign Reserves/Imports	0.061	0.254	0.24	0.809
International Financial Markets	0.918	0.394	2.33	0.020
Elections	0.346	0.127	2.73	0.006
year== 1974.0000	0.240	0.690	0.35	0.728
year== 1976.0000	–0.325	0.588	–0.55	0.580
year== 1977.0000	0.149	0.433	0.34	0.731
year== 1978.0000	0.061	0.342	0.18	0.857
year== 1979.0000	0.359	0.365	0.98	0.325
year== 1980.0000	0.258	0.332	0.78	0.437
year== 1981.0000	–0.078	0.310	–0.25	0.802
year== 1982.0000	–0.061	0.291	–0.21	0.833
year== 1983.0000	–0.085	0.395	–0.21	0.830
year== 1984.0000	–0.052	0.302	–0.17	0.863
year== 1985.0000	–0.480	0.233	–2.06	0.040
year== 1986.0000	–0.257	0.312	–0.82	0.411
year== 1987.0000	–0.267	0.323	–0.83	0.407
year== 1988.0000	–0.587	0.290	–2.02	0.043
year== 1989.0000	–0.680	0.280	–2.43	0.015
year== 1990.0000	–0.239	0.301	–0.79	0.427
year== 1991.0000	0.122	0.284	0.43	0.668
year== 1992.0000	–0.043	0.305	–0.14	0.889
year== 1993.0000	–0.108	0.333	–0.32	0.745
_cons	–12.204	4.861	–2.51	0.012

Model 4

Probit Estimates — Number of obs = 1462
chi2(29) =1063.21
Prob > chi2 = 0.0000
Log Likelihood = –348.77877 — Pseudo R2 = 0.5962
(standard errors adjusted for clustering on ifs)

regime10 1=Float	*Coef.*	*Std. Err.*	*z*	*P>|z|*
Float at t-1	2.669	0.129	20.75	0.000
Domestic Credit Shock	-0.484	0.093	–5.22	0.000
Real Exchange Rate Shock	0.052	0.050	1.04	0.299
Capital Controls	–0.420	0.151	–2.77	0.006

regime10 1=Float	*Coef.*	*Std. Err.*	*z*	*P>|z|*
Exports/GDP	–0.915	0.345	–2.65	0.008
Log(GDP)	–0.009	0.016	–0.59	0.558
Foreign Reserves/Imports	0.087	0.253	0.34	0.731
International Financial Markets	0.906	0.395	2.29	0.022
Elections	0.174	0.148	1.17	0.240
Proportional Representation	0.415	0.196	2.11	0.035
year== 1974.0000	0.248	0.682	0.36	0.716
year== 1976.0000	–0.322	0.568	–0.57	0.571
year== 1977.0000	0.138	0.429	0.32	0.747
year== 1978.0000	0.043	0.335	0.13	0.899
year== 1979.0000	0.368	0.363	1.01	0.312
year== 1980.0000	0.267	0.330	0.81	0.418
year== 1981.0000	–0.085	0.306	–0.28	0.782
year== 1982.0000	–0.062	0.289	–0.21	0.831
year== 1983.0000	–0.093	0.393	–0.24	0.813
year== 1984.0000	–0.054	0.306	–0.18	0.861
year== 1985.0000	–0.496	0.233	–2.12	0.034
year== 1986.0000	–0.284	0.312	–0.91	0.363
year== 1987.0000	–0.288	0.331	–0.87	0.384
year== 1988.0000	–0.586	0.290	–2.02	0.043
year== 1989.0000	–0.683	0.277	–2.46	0.014
year== 1990.0000	–0.243	0.305	–0.80	0.426
year== 1991.0000	0.118	0.293	0.40	0.687
year== 1992.0000	–0.076	0.297	–0.26	0.798
year== 1993.0000	–0.096	0.338	–0.29	0.775
_cons	–12.120	4.868	–2.49	0.013

Model 5

Probit Estimates

Number of obs = 1462
chi2(30) =1187.63
Prob > chi2 = 0.0000
Log Likelihood = –347.03562 Pseudo R2 = 0.5982
(standard errors adjusted for clustering on ifs)

regime10 1=Float	*Coef.*	*Std. Err.*	*z*	*P>|z|*
Float at t-1	2.650	0.128	20.64	0.000
Domestic Credit Shock	–0.487	0.091	–5.34	0.000
Real Exchange Rate Shock	0.059	0.050	1.19	0.235
Capital Controls	–0.338	0.152	–2.22	0.026
Exports/GDP	–0.752	0.359	–2.09	0.036
Log(GDP)	–0.008	0.016	–0.48	0.628
Foreign Reserves/Imports	0.113	0.263	0.43	0.666
International Financial Markets	0.923	0.403	2.29	0.022
Elections	0.121	0.167	0.72	0.469
Proportional Representation	0.379	0.201	1.89	0.059
Party Fractionalization	0.334	0.228	1.47	0.142
year== 1974.0000	0.244	0.679	0.36	0.719
year== 1976.0000	–0.318	0.554	–0.57	0.566
year== 1977.0000	0.109	0.418	0.26	0.794
year== 1978.0000	0.005	0.329	0.02	0.987
year== 1979.0000	0.336	0.360	0.93	0.350
year== 1980.0000	0.257	0.326	0.79	0.432
year== 1981.0000	–0.110	0.304	–0.36	0.717
year== 1982.0000	–0.072	0.287	–0.25	0.803
year== 1983.0000	–0.110	0.388	–0.28	0.777
year== 1984.0000	–0.068	0.306	–0.22	0.824
year== 1985.0000	–0.515	0.233	–2.21	0.027
year== 1986.0000	–0.303	0.314	–0.96	0.335
year== 1987.0000	–0.303	0.334	–0.91	0.364
year== 1988.0000	–0.606	0.291	–2.08	0.037
year== 1989.0000	–0.706	0.282	–2.51	0.012
year== 1990.0000	–0.269	0.303	–0.89	0.375
year== 1991.0000	0.098	0.297	0.33	0.741

regime10 1=Float	*Coef.*	*Std. Err.*	*z*	*P>|z|*
year== 1992.0000	-0.089	0.301	-0.30	0.767
year== 1993.0000	-0.101	0.342	-0.30	0.768
_cons	-12.557	5.044	-2.49	0.013

Replication of Model 4 using the General Estimating Equation Framework

General estimating equation for panel data — Number of obs = 1462
Group and time vars: ifs year — Number of groups = 82
Link: probit — Obs/group, min = 3
Family: binomial — avg = 17.83
Correlation: AR(1) — max = 21
chi2(29) = 1168.51
Scale parameter: 1 — Prob > chi2 = 0.0000
Pearson chi2(1432): 1818.50 — Deviance = 700.41
Dispersion (Pearson): 1.269899 — Dispersion = .489113
(standard errors adjusted for clustering on ifs)

regime10 1=Float	*Coef.*	*Std. Err.*	*z*	*P>|z|*
Float at t-1	2.855	0.131	21.87	0.000
Domestic Credit Shock	–0.460	0.085	–5.43	0.000
Real Exchange Rate Shock	0.052	0.052	1.00	0.316
Capital Controls	–0.406	0.152	–2.67	0.008
Exports/GDP	–0.843	0.365	–2.31	0.021
Log(GDP)	–0.009	0.017	–0.54	0.591
Foreign Reserves/Imports	0.094	0.273	0.35	0.730
International Financial Markets	0.820	0.465	1.76	0.078
Elections	0.152	0.160	0.95	0.342
Proportional Representation	0.383	0.218	1.76	0.079
year== 1974.0000	0.115	0.933	0.12	0.902
year== 1976.0000	–0.334	0.628	–0.53	0.595
year== 1977.0000	0.095	0.492	0.19	0.848
year== 1978.0000	0.018	0.383	0.05	0.963
year== 1979.0000	0.346	0.418	0.83	0.407
year== 1980.0000	0.197	0.383	0.51	0.607
year== 1981.0000	–0.104	0.338	–0.31	0.758
year== 1982.0000	–0.104	0.322	–0.32	0.747
year== 1983.0000	–0.166	0.470	–0.35	0.724
year== 1984.0000	–0.073	0.340	–0.21	0.831
year== 1985.0000	–0.519	0.258	–2.01	0.044
year== 1986.0000	–0.288	0.346	–0.83	0.405
year== 1987.0000	–0.322	0.386	–0.83	0.404
year== 1988.0000	–0.609	0.318	–1.92	0.055
year== 1989.0000	–0.717	0.301	–2.38	0.017
year== 1990.0000	–0.270	0.343	–0.79	0.431
year== 1991.0000	0.127	0.326	0.39	0.696
year== 1992.0000	–0.086	0.338	–0.25	0.799
year== 1993.0000	–0.128	0.374	–0.34	0.733
_cons	–11.075	5.749	–1.93	0.054

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