

**“BANK OWNERSHIP, CREDIBILITY, AND INSTITUTIONS OF FINANCIAL
GOVERNANCE: THE POLITICAL ECONOMY OF EXCHANGE RATES IN
TRANSITION”¹**

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Abstract

In this article, I develop a finance-based political economy model in which state-owned, private domestic, and foreign banks with varying interests and strategies exert a substantial influence on the choice and sustainability of exchange rate regimes. The core idea behind this approach is that the ownership structure of the financial system empowers different types of banks and shapes the responsiveness of government politicians to bank demands. It also subsequently affects the demand and supply of institutions that supervise and regulate the banking sector and carry out

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monetary policy. An empirical investigation of data on de facto exchange rate regimes for the twenty-five transition economies in Eastern Europe during the period 1990–2004 provide strong support for the premise that governments will be less willing and able to commit to and sustain fixed exchange rate arrangements in financial systems dominated by government owned banks than in systems with a large presence of foreign banks. The results are robust to instrumental variable analysis via generalized method of moments estimations with a novel instrument for financial reform and the inclusion of several financial, economic, and political variables.

There can be little doubt that financiers have long influenced governments' macroeconomic policies. As holders of liquid assets, financiers are powerful economic interests because of their market power, organizational advantages, and critical role in economic development. The global credit crisis of 2007–2009, rooted in the power politics of financiers, has provided a reminder of financial institutions' influence. In this article, I focus on the impact of financiers on the choice of exchange rate regime, one of the most important macroeconomic policy decisions. Exchange rates strongly influence governments' freedom of action, the effectiveness of their economic policies, and the stability of domestic financial systems. Exchange rates have always been at the center of international economic relations. Witness the intense U.S. criticism of the Chinese “hard” yuan policy in the face of this emerging economic giant or the recent calls of Nobel Prize-winning economist Robert Mundell for a return fixed exchange rates to reduce “big swings” in currency values causing the global imbalances.³

The literature offers myriad answers to the question of what determines the choice of exchange rate regimes (Broz and Frieden 2001). Yet, the existing studies are incomplete because they have largely neglected the ownership structure of the banking system. My research suggests not only that bank ownership structures vary across countries and over time but that this variation helps explain exchange rate policies. I go beyond the existing literature to suggest a nuanced view of banks, emphasizing that their interests and policy consequences of their behavior vary depending on the nature of their ownership, which can take three forms: state-owned, private domestic, and private foreign.

I situate my argument within the international finance literature, building on the principal insights from the financial development literature examining government participation in

³ “Mundell, ‘Father’ of Euro Urges a Fixed Rate Against Dollar,” *Bloomberg*, September 29, 2009.

finance⁴ and multinational banking⁵ to develop a distinctively *finance-based* approach in which exchange rate regime choice and sustainability depends on the political strength of state-owned, private domestic, and private foreign banks⁶ with varying interests and strategies. The argument presented here rests on the notion that ownership structure of the financial system empowers different types of banks, affects their interests, and shapes the responsiveness of government politicians to bank demands. The ownership also influences the building of monetary and regulatory institutions that determine the ability of governments to commit to sustainable exchange rate regime. The article's principal claim is that governments will be more willing and able to commit to and sustain fixed exchange rate arrangements in financial systems dominated by foreign private banks than in systems dominated by state-owned banks (SOBs). The core idea behind this hypothesis is that foreign banks can help build credibility of the institutions and policies in host countries necessary for a sustainable fixed exchange rate regime through a number of policy channels. First, foreign banks serve as a "push factor" in financial institutional reforms in host countries.⁷ Strong monetary and regulatory institutions and the accompanying features of the financial governance that constrain inflation and currency risks, are more likely to emerge under foreign private ownership. Second, foreign financiers also directly monitor exchange rate and other macroeconomic policies, and thus decrease the likelihood of policy reversals or collapse, by way of their investments and threat of withdrawal of private capital flows. Third, foreign banks have access to international sources of capital, and therefore prevent

⁴ Rajan and Zingales 2003, La Porta, Lopez-de-Silanes, and Shleifer 2002, Andrews 2005, Barth, Caprio, and Levine 2002, Caprio et al. 2004.

⁵ Detragiache et al. 2008, Goldberg 2004, Cull and Soledad Peria 2010.

⁶ Foreign banks are banks in which the majority of shares are owned by foreign firms or in which a foreign firm is the first shareholder and the rest of the shares are dispersed among several shareholders.

⁷ Grabel 2003, 45.

destabilizing capital flows, thus act as crisis managers. In sum, foreign bank ownership serves as a signal of credible commitments and a transparency device for countries with low credibility in international financial markets, as Gros puts it.⁸

In contrast, the financial systems dominated by SOBs remain “financially repressed,”⁹ allowing governments to pursue discretionary policies in an environment of weak financial policy-making institutions. Policy-makers lack the political incentives, support, and ability to commit credibly to low inflation and low public debt, to make fixed regimes sustainable and resistant to speculative attacks. Incumbent influence often results in expansive credit policies, monetization of the budget deficit, and costly bank bailouts.¹⁰ Governments are then forced to devalue currency and abandon fixed regimes in the face of large economic shocks such as banking and currency crises.

The empirical analysis offers support for my argument. I use the transition economies of Eastern Europe (EE) as a testing ground. In EE, exchange rate policies have been the most contested issues in the transition from a command to a market economy. Exchange rates have played a crucial role in post-communist development. They were devised to achieve price stability and to open up previously closed domestic markets to the global economy. The EE region provides an excellent “natural laboratory” within which to test my argument because although transition economies shared the political and economic legacies of communism,

⁸ Gros 2003.

⁹ In financially repressed systems, the government determines who gives or receives credit, and at what price. Governments impose policies and regulations such as selective credit schemes, interest rate ceilings, and controls on foreign exchange that inhibit the standard operation of banks. See Williamson and Mahar 1998, McKinnon 1991, Stallings with Studart 2006.

¹⁰ A growing body of empirical literature shows that the widespread state ownership of banks is associated with underdeveloped financial systems, interventionist governments, low profits, high volumes of bad loans, poor protection of property rights, and financial instability. See La Porta, Lopez-de-Silanes, and Shleifer (2002).

suffered from large economic imbalances, and faced similar reform agendas, they pursued rather diverse exchange rate strategies, contrary to expectations. Nor is progress in political and economic reforms correlated with their choices of particular regimes. On the one hand, the frontrunners in transition have opted for different regimes: in 2004, Poland exhibited a managed float, while Estonia pursued a currency board. On the other hand, transition leaders and laggards adopted similar regimes: compare again Poland with Albania or Moldova, transition laggards; the latter three pursued flexible regimes in 2004. In spite of this striking variety of exchange rate regime choices in EE, there is a relatively small number of studies examining the determinants of these choices,¹¹ and only a few account for the role of political-economic factors.¹² The finance-based framework presented in this paper offers insights into the puzzling heterogeneity of exchange rate regimes in EE, both across countries and over time.

FINANCIAL LINKAGES AND EXCHANGE RATES

While existing explanations that highlight the role of financial politics bring fundamental insights on exchange rate regime choice, they have not explored the effect of the ownership structure of the financial system.¹³ Research in international economics in the tradition of the optimum currency areas (OCA)¹⁴ posits that countries with underdeveloped financial systems tend to choose fixed regimes because they lack the market instruments to conduct domestic

¹¹ Corker et al. 2000, Backé 1999, Nehrlich 2002.

¹² Domac et al. 2001, Kluyev 2002, Von Hagen and Zhou 2005, Bodea 2010a, Markiewitz 2006, Frieden, Leblang, and Valev 2010.

¹³ A large body of literature exists on what determines the choices of exchange rate regimes. Here I review only those studies that underscore financial sector linkages in exchange rate policies.

¹⁴ OCA specifies the structural characteristics of an economy under which it is optimal for a country to surrender its exchange rate autonomy, including the symmetry of external shocks, degree of labor mobility, degree of trade openness, and extent of economic diversification. See Mundel 1961, McKinnon 1963, Kennen 1969.

open-market operations, needed to protect their banks against exchange rate instability.¹⁵

Nonetheless, OCA structural explanations are insufficient because they cannot fully explain why important differences in exchange rate policy in EE have been observed among economies with similar economic structures and levels of financial development.

In a direct challenge to these structural economic theories, societal approaches examine the distributional effects of exchange rate policy on various interest groups and the trade-offs exchange rate entails between credibility (stability) provided by fixed regime and monetary autonomy to achieve domestic goals (e.g. price stability, employment).¹⁶ Much of this work has been based on Frieden's widely cited interest group model, in which domestic economic actors' preferences for an exchange rate *regime* are determined by their sectoral interests. Frieden predicts support for fixed exchange rates from international investors, exporters, and borrowers because currency volatility may negatively influence their cross-border business activities.¹⁷ While this approach has fruitful in explaining exchange-rate regime preferences of producers of tradable and nontradable goods, it remains limited in its ability to account for exchange-rate preferences of financiers.¹⁸

Other scholars have explored the role of financial interests in exchange rate policy, arguing that large banks favor monetary convergence associated with a greater number of

¹⁵ See McKinnon 1991.

¹⁶ Frieden 1991, 2002, Blomberg, Frieden, and Stein 2004, Frieden, Ghezzi and Stein 2001.

¹⁷ Frieden (1991) also specifies distributive interests in exchange rate "level." While exchange rate levels and regimes are analytically separable, they are often combined in practice. Maintaining a fixed exchange rate frequently means keeping a strong, appreciated currency. I am grateful to Barry Eichengreen for this remark. Furthermore, Hefeker (1997, 27) noted that producers focus on regime rather than exchange rate level because the former is more enduring and more manipulable by governments.

¹⁸ Although some scholars identify Frieden's "international investors" as banking/financial services, he operationalizes this interest group in terms of foreign direct investors.

banking transactions,¹⁹ and accounting for exchange-rate preferences associated with reliance on different types of foreign capital.²⁰ Henning combines financial-sector preferences and institutions, arguing that banks' preferences are "ambivalent, weakly subscribed, and situationally dependent," conditioned by the character of national financial systems and bank-industry ties.²¹

Finally, the recent financial integration approach underlines balance sheets' effects on the choice of exchange rate regimes.²² This research shows that under conditions of liberalized capital, banks and other interest groups that accumulate dollar-denominated debt and face severe currency mismatches²³ in their balance sheets tend to oppose abandoning a fixed regime due to the negative consequences of nominal currency depreciation.²⁴

While these studies are fruitful, they neglect three aspects of the linkages between finance and exchange rate policies in transition and developing countries.²⁵ First, they posit financiers as a homogenous societal group that is uniformly conservative, inflation-averse, and supportive of monetary convergence under capital mobility.²⁶ Second, most of these explanations operate with the assumption of financial systems that prevail in developed countries. Nonetheless, the banking systems in transition and developing economies seem to be hybrids of different systems rather than pure versions of the German bank-based or the Anglo-Saxon securities-based systems.

Their bank ownership structures also differ. While in industrialized countries most banks are

¹⁹ Hefeker 1997, Cohen 1993.

²⁰ Shambaugh 2004, Maxfield 1991, 1997.

²¹ Henning 1994.

²² Eichengreen and Hausmann 1999, Calvo and Reinhart 2002.

²³ A "currency mismatch" occurs when projects that generate domestic currency are financed with foreign currency (Eichengreen and Hausmann 1999, 3).

²⁴ Hall 2005, Woodruff 2005, Walter 2008.

²⁵ Recent empirical surveys of the literature on exchange rate regime determination include Klein and Shambaugh 2010, Levy Yeyati, Sturzenegger and Reggio 2010.

²⁶ See also Posen 1993, Goodman 1992, Maxfield 1997, Kirshner 2007.

private domestic, extensive government ownership of banks still persist in some developing countries (for example, in China, India, East Asia) and a growing presence of foreign banks has been recorded in others (for example, in EE and Latin America). Third, the existing literature neglects that currency credibility and sustainability could come under threat if monetary and financial policies are at cross-purposes. High rate of inflation would trigger an outflow of foreign reserves and can lead to the collapse of the currency. On the other hand, capital controls should enhance the sustainability of a fixed exchange rate regime, since they make the regime less vulnerable to discrepancies between macroeconomic and exchange rate policies that often lead to capital outflows.²⁷ This article builds on previous work but addresses these three shortcomings.

BANK OWNERSHIP AND CREDIBILITY OF EXCHANGE RATE COMMITMENTS

Credibility is “the confidence invested by the public in the government’s commitment to a policy.”²⁸ In other words, the public and investors assess the effectiveness and the sustainability of announced policies as well as the likelihood of policy reversals or collapse. The credibility of fixed exchange rate regimes derives from the priority attached by governments and monetary authorities to policies aimed at low inflation and stable currency. The confidence in a fixed regime thus requires that policymakers devise and implement a policy mix, which is consistent with this regime, including anti-inflationary monetary policy, sound macro-prudential regulation, and responsible fiscal policy. The credibility of an announced fixed exchange rate may prevent the public and investors from engaging in currency substitution, speculations against the local

²⁷ Increased capital mobility has made monetary policy increasingly incompatible with fixed exchange rates. According the Mundell-Fleming model (the “impossible trinity”) a country can attain only two of three policy goals: domestic monetary policy autonomy, fixed exchange rate, and capital mobility. See Mundel 1961, Fleming 1962, Obstfeld and Taylor 2002.

²⁸ Eichengreen 1992, 5.

currency and other actions that can trigger a speculative attack on the currency.²⁹ When a government does not observe the rules of the game inherent in a fixed exchange rate strategy, speculators will lose confidence in the currency, a central bank intervention in support of the currency will drain international reserves, and the government will be forced to abandon the currency peg.³⁰

The literature identifies an independent central bank as the main source of credibility to governments that helps to reduce the inflationary bias in monetary policy.³¹ An independent central bank with the legal stipulation of price stability can tie hands of governments, preventing them from pursuing an activist monetary policy of low interest rates to stimulate employment before elections.³² Nonetheless, formal delegation of monetary authority to an independent central bank and respecting its independence is not the same. Policy-makers may be tempted to interfere with the decision of central bankers, change its personnel, and restrict its independence³³. Furthermore, central bank procedures and policies are opaque: it is quite difficult for the public to monitor the government-central bank relations. Yet transparency is a necessary feature of any credible government commitment.³⁴ Finally, new monetary institutions of those countries with poor record of accomplishment and the history of high inflation will inspire a limited confidence

²⁹ Grabel 2003, 33.

³⁰ Krugman 1979.

³¹ This view is based on rational expectation theories examining the time-inconsistency problem in monetary policy building from the premise that governments have the ability to use surprise inflation to generate short-term gains in output. See Kydland and Prescott 1977, Barro and Gordon 1983.

³² Cukierman, Webb, and Neyapti 1992.

³³ Drehel and Voight 2011.

³⁴ Broz (2002) claims that the transparency of political system is a substitute for the transparency of monetary commitment mechanism.

that monetary policy will be insulated from the political interference³⁵ Central banks and governments thus need to be subjected to additional, externally imposed, constraints.³⁶

I argue that in countries confronted with the severe “credibility deficit,” (for example, in countries with new or weak domestic monetary institutions and underdeveloped financial systems, in countries with histories of hyperinflation), foreign banks, as external anchors, can establish the credibility of domestic financial institutions and chosen economic policies vis-à-vis market participants. Foreign banks with a preference for low inflation and stable currency help to make government commitments to fixed regimes credible by supporting financial regulatory reforms as well by monitoring and disciplining governments’ monetary (and fiscal) policies, and thus making these regimes more resistant to speculative attacks.³⁷ Governments in financially integrated economies tend to favor fixed exchange rate policy that reduces risks associated with exchange rate variability that could potentially deter international investments.³⁸

In contrast, market participants are likely to have a limited confidence in the viability of policymakers’ commitments to a fixed exchange rate regime when a financial system remains dominated by incumbent SOBs that tend to engage in inflationary politicized lending and financial speculations. The government involvement in the banks generates incentives for moral hazard in the financial sector: the government tends to refrain from imposing strict banking regulation and provides guarantees for bad loans in return for the banks’ support of industries and employment.

³⁵ Grabel 2003.

³⁶ Keefer and Savastage (2002) find that effectiveness of central bank independence in solving credibility problems depends on the presence of multiple veto players in government..

³⁷ Obstfeld 1998, Goldberg 2004.

³⁸ Berdieu, Kim and Chang 2011.

In sum, as I argue in greater detail later, the interests of banks in exchange rate, as well as in monetary and regulatory policies differ with different consequences for the choice and sustainability of exchange rate regimes.³⁹ Each set of bank ownership, which mediates the demands and behavior of banks, creates different incentives for building institutions of monetary and financial governance, which ensure policies that maintain a stable currency.

STATE OWNERSHIP AND INSTITUTIONS OF FINANCIAL GOVERNANCE

In financial systems dominated by SOBs, the boundaries are blurred between political elites and bureaucrats, who are appointed to run the bank on behalf of the state, because there is no clearly identifiable principal.⁴⁰ SOBs have privileged access to governmental officials and thus strong political influence on legislation and policies. Their political power is particularly strong in concentrated banking systems, in which SOBs enjoy a monopolistic position in the market. SOBs are in turn often required to finance loss-making state-owned enterprises (SOEs), to provide financing on noncommercial terms to regions or sectors, and to direct credit based on political connections rather than risk assessment.⁴¹ Directed lending is usually part of bargaining between the government and SOBs.⁴²

³⁹ I generated a picture of the economic interests of banks based on deductive logic from existing economic theories and empirical research. I also visualized context-specific strategies based on over 100 field interviews. I focus on preferences formation and assume that policy outcomes depend on the threshold defined on the basis of bank ownership. When foreign banks dominate, policymakers are expected to pursue a fixed regime; when SOBs dominate, a flexible regime is the likely outcome.

⁴⁰ Mian 2003.

⁴¹ Andrews 2005, 3.

⁴² SOBs are a desirable instrument for the redistribution of political rents because the lending activities of banks influence all economic sectors. It is also easy to disguise political motivation behind lending given the asymmetric information between banks and outsiders about loan quality. See Andrews 2005, Rajan and Zingales 2003.

State ownership, financial repression, and closure of the financial system to foreign investors place the decision-making authority in the hands of the incumbent political elite, who lack incentives to build strong institutions of financial governance that would change the “oligarchic” structures of power. SOBs preserve close links with the political elite, exploiting political channels to obtain their preferred economic policies, which may not be compatible with the general public good. These banks benefit from weak monetary and regulatory institutions so they do not have any incentive to demand institutions that would limit the discretionary power of the political elites. A weak, subordinate central bank is more willing to engage in inflationary monetary policy by printing fiat money that offer incumbent banks profit-making opportunities associated with high interest rate spreads. A bank regulator also ensures them rents from lax banking supervision and weak prudential regulation. Therefore, SOBs do not have incentives to monitor government-central bank relations and report when governments manipulate instrumentally financial policies to obtain political support (for instance, obliging the central bank to finance government debt).

State ownership further undermines the entry of new private domestic banks powerful enough to challenge incumbent networks or to reinforce existing institutions. Weak financial regulatory structures dominated by SOBs allow the entry of new private banks, also linked to the political elite and SOEs through ownership and politicized relationships.⁴³ As a result, these banks tend to benefit from the same sources of political power and privileges as SOBs. Therefore, their interests and behavior tend to converge with those of SOBs. Often very small, these new private banks, which are not linked to incumbent networks, are unable to influence financial institutions and policies in any meaningful way.

⁴³ In Russia new private banks continued to operate as “agent” or “pocket” banks, created by government ministries or by industrial groups seeking access to cheap credit (Johnson 2000).

STATE OWNERSHIP AND ECONOMIC POLICIES

Exchange Rates: Under a flexible regime, exchange rate adjustments are less visible to the public and, consequently, less politically costly than devaluation under a fixed regime.⁴⁴ Therefore, SOBs with close political and credit ties to domestic enterprises are likely to favor the monetary autonomy associated with a flexible regime that allows the government to define interest rates and expand the money supply.

Under some circumstances, domestic incumbent banks however may favor fixed regimes but behave in ways that render these regimes unsustainable. When fixed regimes are accompanied by liberalized capital flows, banks may take un-hedged dollar denominated loans from abroad (at low interest rates) and issue domestic currency loans (at higher rates) to enterprises. In the presence of governmental guarantees, it is profitable for banks to increase their foreign exposure, for it will bring them additional returns in the absence of the risk of currency devaluation. Banks that accumulate dollar-denominated debt end up with varying degrees of currency mismatches on their balance sheets.⁴⁵ Faced with such mismatches, banks may switch from favoring exchange rate flexibility to currency stability, fearing the negative impact of the sharp nominal devaluation of domestic currency on their solvency.⁴⁶ However, when a central bank tries to defend the currency peg by selling its foreign exchange reserves and increasing interest rates, banks faced with the higher costs of funding are forced to call their loans, imposing severe strains on borrowing enterprises.⁴⁷ This defense can precipitate defaults on short-term

⁴⁴ Collins 1996.

⁴⁵ Eichengreen and Hausmann 1999.

⁴⁶ Stone 2002, Hall 2005, Woodruff 2005.

⁴⁷ In these periods of severe pressures, a central bank faces a dilemma: bail out failing banks and save the banking system, or implement monetary policy of high interest rates to defend a currency peg. See Keefer 2007, Rosas 2006, Copelovitch and Singer 2008.

domestic debts and balance sheet problems of banks, often resulting in currency crisis and the collapse of a fixed regime.⁴⁸

Monetary Policy: Incumbent domestic banks—as debtors with debt denominated in domestic currency—benefit from high inflation, as it reduces the real cost of servicing the debt (for example, inflation eases the burden of nonperforming assets on bank portfolios) in the presence of government protection. Inflation serves as a tool of wealth redistribution from creditors to debtors. The weak central bank may serve as “transmission mechanism” of wealth to debtors through refinancing distressed bank assets.⁴⁹ High inflation also allows banks to pay negative interest rates on deposits and to earn a float (a form of inflation tax).⁵⁰

Furthermore, lacking concern about inflationary consequences of their policy strategies, banks with governmental ties may grant risky “soft” loans to connected enterprises, making it difficult to achieve price stability. The absence of the profit motive, political interference and moral hazard stemming from soft-budget constraints⁵¹ result in bad lending decisions of these banks and high volumes of nonperforming loans, fuelling inflationary pressures.⁵²

Banks that benefited from conditions of high inflation may fear hawkish monetary policies such as a radical increase in real interest rates to sustain a fixed exchange rate in the face of inflationary pressures. Interest rate hikes not only reduce bank profits because central banks

⁴⁸ Here I draw on the “third generation” models of currency crises that focus on weak banking regulation and moral hazard of governmental guarantees (Krugman 1998, Chang and Velasco 1998, Corsetti, Pesenti, and Roubini 1998). These models are also called “twin crises” models because banking and currency crises often occur together (Kaminsky and Reinhart 1999).

⁴⁹ Nenovsky and Mihaylova 2007.

⁵⁰ Treisman 1998, 2006, Johnson 2000. The Russian banks received 8 percent of the country’s GDP in 1992 through the inflation tax (Easterly and Vieira da Cunha quoted in Treisman 1998: 9).

⁵¹ On the concept of soft budget constraint, see for example Kornai 1980, Kornai, Maskin, and Roland 2003.

⁵² La Porta, Lopez-de-Silanes, and Shleifer 2002.

credits become more expensive and higher reserve requirements squeeze banks' liquidity but also make the recovery of disbursed loans more difficult. One can thus expect that incumbent banks would oppose the fixed regimes that high-inflation economies tend to adopt in the framework of exchange rate-based stabilization programs to bring inflationary expectations down.⁵³

*Financial Regulation*⁵⁴: Domestic incumbent banks tend to benefit the most from *protective* national regulation through bailout guarantees and protection from competition, below market discount loans, and regulatory exemptions (Kroszner 1998). The governmental safety net can create moral hazard by providing insolvent banks incentives to “gamble on resurrection.”⁵⁵ Banks grant excessively risky loans, expecting that their future losses will be borne by taxpayers. As a result, large incumbent banks may burden governments with large contingent liabilities arising from guarantees that some of these banks are “too-big (or too-political)-to fail.”⁵⁶ Financial liberalization, particularly the lifting of regulatory restrictions on bank entry, may thus lead to opposition from domestic banks that fear increased exposure to competition, mainly from foreign banks, which may compete away their positional rents.

Domestic banks' preferences with regard to regulation of capital flows are not clear-cut, however. On the one hand, these banks may oppose the removal of capital controls because capital can flow away to more attractive destinations, limiting sources of bank funds, and capital inflows may erode their monopoly as suppliers of funds to industries. On the other hand, capital

⁵³ Russian banks actively lobbied against the central bank's attempts to tighten monetary policy from 1992 through 1994 (Treisman 1998).

^{54,54} Bank regulation and supervision reduce imprudent borrowing and lending by banks, limit currency mismatches, restrict connected lending, ensure that banks have enough capital, regulate bank entry, and reduce moral hazards associated with governmental guarantees to provide bailouts to banks. See Barth, Caprio, and Levine 2002.

⁵⁵ Williamson and Mahar 1998, 3.

⁵⁶ Caprio et al. 2004, 2.

openness facilitates access of banks to funds for lending, allowing them to gain from intermediation of foreign purchases of domestic securities and from arbitrage opportunities in international financial markets.⁵⁷ With limited liability and little risk of deregulation of capital, incumbent banks searching for new profit-making opportunities may discount the risk of default and engage in speculative short-term financial transactions on international financial markets.⁵⁸

FOREIGN OWNERSHIP AND INSTITUTIONS OF FINANCIAL GOVERNANCE

Foreign investors are strangers to local interest networks and tend to be less politically connected domestically. Thus, they are less likely to be able to capture the government and more likely to resist governmental pressures for directed lending.⁵⁹ Foreign banks do not need to create coalitions, organize, or mobilize politically to lobby for their preferred policies. Because they are holders of mobile assets, their power resides in the highly credible threat to “exit” or in their unwillingness to lend or invest in a host country.⁶⁰ Under the conditions of increased financial integration, the bargaining power of mobile capital is also greater, as it can move without substantial costs to more profitable markets. International financial integration and balance-of-payment crises can further reinforce the political influence of these banks as the generators of foreign exchange.⁶¹

Private foreign banks foster competition in a host country’s financial system forcing domestic banks to operate more efficiently in order to survive.⁶² Foreign banks have a vested

⁵⁷ Horowitz 2005, Kaminsky and Schmukler 2003.

⁵⁸ Montinola 2003.

⁵⁹ Kroszner 1998.

⁶⁰ Hirschman 1970.

⁶¹ Maxfield and Haggard 1996, Maxfield 1997.

⁶² Scholars find that foreign banks tend to have lower interest margins and higher profitability than domestic banks in developing countries. See Detragiache et al. 2008, Goldberg 2004.

interest in demanding strong institutions to protect their property rights and stabilize their profits. Since foreign banks value price stability and sound currency, they should constitute the core constituency supporting the delegation of monetary policy to an independent central bank less prone to providing below-market discount loans to connected parties.⁶³ Independent central bank (or other conservative regulator) is also less likely to accommodate fiscal expansion to bail out banks and refinance their distressed assets during banking crises, and thus reduce moral hazard created by the governmental safety net.⁶⁴

Therefore, the incumbent political elite may have incentives to build stronger institutions enabling them to regulate and extract profits from foreign banks. Indeed, many developing country governments granted autonomy to their central banks in order to signal commitment to low inflation to international investors and creditors.⁶⁵ It is also likely that domestic groups that rely on foreign capital would modify their preferences and create coalitions to promote institutions and policies favorable to foreign investors.⁶⁶

The entry of foreign banks weakens the political influence of SOBs and their enterprise clients but it also creates a new set of domestic private banks with the potential to demand institutions that would limit the discretionary influence of incumbent rent-seeking networks among banks, industries, and the state.⁶⁷ The incentives for building stable and transparent institutions between private bankers and the state thus converge in systems with a substantial foreign bank presence.

⁶³ Posen 1993, Goodman 1992.

⁶⁴ Stern and Feldman 2004, Rosas 2006.

⁶⁵ Maxfield 1997.

⁶⁶ Evans 1979.

⁶⁷ But if host governments grant foreign banks special privileges allowing them to establish a monopolistic position on host markets, their entry will not bring positive results (Mishkin 2006).

FOREIGN OWNERSHIP AND ECONOMIC POLICIES

Exchange Rates: Large international banks earn an important portion of their profits from cross-border operations; they thus desire a high level of financial integration to increase the volume of banking transactions. Because of their orientation toward international finance, these banks tend to favor stable exchange rates to promote overseas investment and reduce currency risks. Exchange rate volatility reduces the expected values of investment projects and thus creates uncertainty about cross-border transactions.⁶⁸ A credible fixed regime, combined with sufficiently high levels of foreign exchange reserves to discourage currency speculators, decreases risk and increases profit opportunities for banks. International banks are thus supporters of the monetary integration of fixed exchange rates.⁶⁹

Although banks engaged in international business have a greater capacity to protect themselves and profit from short-term exchange rate fluctuations,⁷⁰ hedging is costly and more difficult beyond one-year periods because of limited forward markets.⁷¹ Hedging is particularly difficult in underdeveloped financial systems and for small countries' currencies.⁷² Even the most sophisticated hedges are no substitute for stable exchange rates, so international banks, as *foreign direct investors*, prefer to operate in countries with fixed regimes. They would rather bear the risk of sharp devaluations than the risk arising from a non-credible monetary policy and high

⁶⁸ Goldberg 2009, Mian 2003.

⁶⁹ Hefeker (1997) observes that the major European banks were strong lobbyists for the European monetary union.

⁷⁰ McNamara 1998.

⁷¹ Hefeker 1997. The innovative credit markets have not yet invented hedges for credit risk, considered the greatest banking risk. Natural hedges, achieved by negative correlations within the bank portfolio, are hard to find as credit exposures often exhibit some degree of correlation with one another.

⁷² Cooper 1999.

exchange rate volatility.⁷³ Foreign banks lending to developing countries should be particularly favorable to fixed regimes in order to decrease the risk of non-repayment and increase the risk-adjusted rate of return.⁷⁴

Monetary Policy: In addition to stable currency, international banks are likely to hold standard preferences for price stability to prevent the erosion of the real value of their portfolios as creditors. These banks tend to have more conservative lending policies and pay greater attention to loan quality and diversification of exposures. They are better able to resist the moral suasion of host governments to lend to politically favored constituents and loss-making sectors of the economy, or to purchase government-issued bonds.⁷⁵

Financial Regulation: In contrast to domestic banks, foreign banks favor the financial liberalization of both entry into the banking sector and capital flows because it allows them to expand into new markets and to increase their investment opportunities and profits, in addition to giving them a stronger political voice.⁷⁶ Foreign banks as *equity* investors are particularly sensitive to regulation of the capital account because it can also affect their repatriation and liquidation options.⁷⁷

But foreign financiers are likely to favor strict financial regulation that protects their interests and lowers the risk of banking crises when investing in less developed economies, where they risk their international reputation and face larger default costs.⁷⁸ It is politically more

⁷³ Papaioannou 2005.

⁷⁴ Shambaugh 2004.

⁷⁵ Kroszner 1998: 25.

⁷⁶ Gruner and Hefeker (1996) argued that this promise of greater cross-border cooperation motivated large European banks to push for a full financial integration of banking regulation within the European single market.

⁷⁷ Maxfield 1997.

⁷⁸ Mian 2003.

difficult to convince the public of the need to save a foreign bank from domestic resources.⁷⁹

Although large international banks have more funds to cover potential loan losses, a low probability of bailout by host governments discourages them from risk-taking behavior.⁸⁰

Table 1 summarizes the expected interests of state-owned and foreign private banks in exchange rate, monetary, and regulatory policies. I assume that the interests of private domestic banks converge with those of one of the two previous types of banks, which dominate a domestic financial system.

[Table 1 about here]

EMPIRICAL ANALYSIS

To estimate the impact of my *financial* hypothesis, I constructed a panel dataset of 25 countries of EE⁸¹ from 1990–2004 to estimate a series of binary random effects logistic regressions as my baseline econometric model of exchange rate regime choice.⁸² The dependent variable in this study is treated as a binary exchange rate regime index: countries either float (takes the value of 0) or fix (takes the value of 1).⁸³ I examine the probability that a country will pursue or maintain a fixed exchange rate regime at time t . Vector of explanatory variables includes three sets of

⁷⁹ Gros 2003.

⁸⁰ Mishkin 2006.

⁸¹ EE countries examined in this study include: Czech Republic, Hungary, Poland, Slovak Republic, Slovenia, Estonia, Latvia, Lithuania, Bulgaria, Croatia, Romania, Albania, FYR-Macedonia; Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyz Republic, Moldova, Russia, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan.

⁸² The year 2004 is taken as the end of the sample period because several transition countries joined the European Union (EU) that put constraints on their macroeconomic and financial policies.

⁸³ Fix versus float dichotomy is a metaphor for less or more flexible regimes. Adding additional hypotheses for other types of regimes would make my central argument unnecessarily fuzzy and less amenable to systematic testing.

covariates: financial, economic, and political. All data are annual; to avoid a potential endogeneity problem, all independent variables are lagged one year.

The econometric literature on panel data models suggests employing the fixed effects model if the empirical model focuses on a particular set of countries.⁸⁴ However, the maximum likelihood estimator (MLE) is inconsistent in the case of a country-specific fixed effects model.⁸⁵ As N tends to infinity, for a fixed T , the number of fixed effects μ_i , for $i = 1, \dots, N$, increases with the sample size N , and we have an incidental-parameters problem.⁸⁶ Although MLE is consistent when T tends to infinity, T is usually small for panel data ($T=12-15$ in my case).

More generally, the country-specific fixed effects can control for unobserved unit heterogeneity, but by restricting information to within-country variability, the usefulness of the data is drastically reduced and important information is thrown out. More importantly, the fixed effect estimators are much less precise and are not able to estimate the coefficients of time-invariant covariates.⁸⁷ When there is no compelling choice between the two models, the random-effects model is often preferred if there are covariates that are constant within panels. Some covariates in my model are “sluggish,” and the Hausmann test does not does not reject the null hypothesis that the random effects estimator is consistent.

The dependent variable is the de facto exchange rate regime, based on the “Natural Exchange Rate Classification” as compiled by Reinhart and Rogoff (R&R).⁸⁸ The R&R measure uses parallel market exchange rates, detailed country chronologies, and related factors (such as

⁸⁴ Random effects models use the information from both cross-country and within-country variation. These models fully utilize the panel information by using country-pair fixed-effects, while allowing for time invariant regressors.

⁸⁵ Chamberlain 1980.

⁸⁶ Wooldridge 2002.

⁸⁷ Hardin and Hilbe 2000, 34, Wooldridge 2002.

⁸⁸ Reinhart and Rogoff 2008.

exchange controls and currency reforms) to determine the *actual* operation of an exchange rate regime.⁸⁹ The R&R classification is based on a 15-point scale. Following Simmons and Hainmueller,⁹⁰ I dichotomize it with a 10-point cutoff.⁹¹ A notable feature of the R&R classification is that it distinguishes episodes of high inflation and uncontrolled depreciation as “freely falling” regimes (associated with extreme macroeconomic imbalances and inflation higher than 40 percent) and those for which parallel market data are missing. I retain freely falling regimes because they are highly represented in my sample (38 percent).

Recent empirical studies have provided evidence that the evaluation of adjustments in central parities and foreign exchange market interventions can generate exchange rates quite different from the official arrangements that national authorities annually declare to the IMF. The official regime declaration is a signal to currency speculators of the formal commitment of the government and central bank to exchange rate stability, but it does not capture the policies inconsistent with this commitment.

Table 2 reports the percentages of country observations that fall into two categories of exchange rate regimes—fixed and float—during three sample periods, comparing *de facto* with *de jure* classifications. There has been a steady decline in the number of EE countries with *de jure* fixed regimes over the period 1990–2004, simultaneously, with an increase in the shares of official floats. The opposite, even more dramatic trend is notable with regard to *de facto* regimes.

⁸⁹ The R&R measure is more appropriate for my purposes than alternative measures, as it is the most widely available and focuses explicitly on the identification of longer-term “regimes” rather than shorter-term “spells” within a regime (Rogoff et al. 2003, 10).

⁹⁰ Simmons and Hainmueller 2005.

⁹¹ The following regimes were coded as fixed: no separate legal tender, pre-announced peg or currency board, pre-announced horizontal band of less than +/-2 %, *de facto* peg, pre-announced crawling peg, pre-announced crawling band of less than +/-2 %, *de facto* crawling peg, *de facto* crawling band of less than +/- 2%, and pre-announced crawling band of less than +/- 2 %. A *de facto* crawling band of less than +/- 5%, moving band of less than +/- 2%, managed floating, freely floating, freely falling, and hyperfloating were coded as flexible.

This difference between announced and actual exchange rate policies suggests that EE countries have been prone to “fear of floating,” that is, officially claiming to run floats but intervening frequently in foreign exchange markets to reduce exchange rate volatility, although monetary authorities had no official commitment to maintaining the parity.⁹²

[Table 2 about here]

The key explanatory variable measuring the effect of ownership structure and the institutional quality of the financial system on exchange rate regime choice is the three-dimensional index of foreign ownership influence developed from the annually published EBRD Transition Reports.⁹³ The first dimension of the index represents the share of private banks in total bank assets, which indicates the transformation of ownership in banking through the entry of new private banks and privatization of SOBs. The second dimension of the index reports the share of majority foreign-owned banks in total bank assets, which measures the degree of openness to competition from the entry of foreign banks through either the establishment of new banks or the acquisition of existing banks. The final dimension of the EBRD indicator evaluates several dimensions of banking sector reform, including separation of commercial banking activities from the central bank, liberalization of interest rates and credit allocation, use of directed credit, progress in the establishment of institutions of prudential regulation and

⁹² Calvo and Reinhart 2002. In contrast, countries that frequently adjust the central parity can make an official peg resemble that of a float, manifesting a “fear of pegging” behavior (LYS 2002). For discussions on the discrepancy between the de jure and de facto policy, see also Alesina and Wagner 2006, von Hagen and Zhou 2005, Guisinger and Singer 2010.

⁹³ Fries 2005.

supervision, and degree of banking competition.⁹⁴ The index ranges from 0, meaning that no financial reforms were enacted, to 10, which corresponds to a full liberalization and institutional transformation of the banking sector. A higher value on this index means a higher share of foreign and private banks in financial intermediation, accompanied by stronger monetary and regulatory institutions. With an increase in the level of foreign ownership, I expect a higher probability of adopting and sustaining fixed exchange rate regimes.

In figure 1, I graph the measure of foreign ownership against the R&R fine classification.⁹⁵ A cursory overview of the data suggests that foreign ownership index is negatively correlated with exchange rate regimes: at higher levels of financial reform, countries exhibit less flexible exchange rates. For example, Estonia clearly exhibits a steep upward trend in liberalization of a financial system, which is dominated by foreign banks (99%), allowing it to sustain a currency board throughout the transition. On the opposite end, Belarus exhibits the extreme case of a repressed clientelistic system of finance, where monetary policy is a source of redistribution by preferential allocation of credit through SOBs and the corresponding high degree of exchange rate flexibility.

[Figure 1 about here]

I first construct a model (Model 1) that adds foreign ownership index along with additional financial variables and key economic variables associated with the OCA theory. To

⁹⁴ I use the three-dimensional index instead of a simple share of foreign bank assets of total banking assets, as it better captures my primary hypothesis and it is a better predictor of exchange rate regime choice than its individual dimensions.

⁹⁵ In the R&R fine classification, exchange rate regimes run from 1–15, with 1 representing the most rigid and 15 the most flexible regime.

proxy for the presence of currency mismatches, I use ratio of foreign liabilities in the domestic financial sector relative to money stocks as a measure of liability dollarization.⁹⁶ Following Eichengreen and Hausmann,⁹⁷ I expect a lower probability of a fixed regime with greater currency mismatches. To test the influence of capital mobility, I create a dummy variable, taking the value of 1 for the years when the country accepted obligations under Article VIII of the IMF's Articles of Agreement.⁹⁸ I expect this variable to be positively associated with floating.⁹⁹

Model 1 also includes two commonly used OCA factors: openness and economic size.¹⁰⁰ Trade openness (exports plus imports as percentage of GDP) and economic size (measured by real GDP) capture the argument that small, open economies, given their higher propensity to trade, a high proportion of economic agents sensitive to exchange rate risk, and the need for nominal protection from the world economy, should benefit more from the stability provided by a fixed regime.

The literature examining the use of fixed exchange rate as a nominal anchor for macroeconomic stabilization and credibility import provides an ambiguous answer. While countries with moderate inflation may have incentives to use the exchange rate as an anchor, high inflation (large but transitory inflation shocks) creates pressures on the exchange rate market that may force monetary authorities to devalue and float, either voluntarily or because of a currency crisis.¹⁰¹ Following Levy Yeyati, Sturzenegger, and Reggio,¹⁰² I include a dummy for

⁹⁶ For a detailed description of this measure, see Levy Yeyati, Sturzenegger, and Reggio 2010. The data was generously provided by Iliana Reggio.

⁹⁷ Eichengreen and Hausmann 1999.

⁹⁸ Data from the IMF Annual Reports on Exchange Rate Arrangements and Exchange Restrictions.

⁹⁹ Chinn and Ito's (2006) index of *de jure* capital account openness is available only for a small number of EE countries for the most recent years.

¹⁰⁰ Data from the World Bank Development Indicators.

¹⁰¹ Edwards 1996.

high inflation, defined as an annual inflation rate exceeding 150 percent.¹⁰³ I expect high inflation to increase the pressures to float, as the peg becomes unsustainable.

Model 2 is a benchmark model that adds key interest group and institutional indicators, in addition to financial and OCA variables. Scholars have established that non-democratic governments are more likely to adopt fixed regimes because they are more insulated from domestic politics and thus bear lower political costs of pegging, while leaders in democracies face greater societal pressures to trade exchange rate stability for other goals (for example, the reduction of unemployment).¹⁰⁴ I thus expect that non-democracies are more likely to pursue a fixed regime. I include a measure of democracy based on the Freedom House scores. Frieden, Gheci, and Stein find that economies with large tradable sectors are more likely to adopt a float that allows competitive real exchange rates to be maintained because a fixed regime is associated with real exchange rate appreciation.¹⁰⁵ I construct the ratio of tradables (industry and agriculture) to nontradables (services) as a proxy for political influence of these interest groups.¹⁰⁶ The higher the value of manufacturing and agriculture in domestic production relative to services, the stronger I expect pressures for a more flexible exchange rate regime. Table 3 reports descriptive statistics for the principal variables.

[Table 3 about here]

¹⁰² Levy Yeyati, Sturzenegger, and Reggio 2002.

¹⁰³ Data from the World Bank Development Indicators, complemented by the EBRD Transition Reports and de Melo et al. (1996).

¹⁰⁴ Eichengreen 1992, Simmons 1994, Leblang 1999.

¹⁰⁵ Frieden, Gheci, and Stein 2001.

¹⁰⁶ Data from the World Development Indicator Series.

Table 4 presents the estimation results. The results from Models 1 and 2 support the hypothesis that countries with financial systems dominated by foreign and private banks and featuring strong monetary and regulatory institutions tend to adopt and sustain more rigid exchange rate regimes. The coefficient for foreign ownership variable is positive and statistically significant. This result is robust to the inclusion of additional financial, political, institutional, and OCA-related macroeconomic variables. The findings support some existing theoretical arguments and challenge others, but none altered the statistical significance of financial reform variable.

[Table 4 about here]

In addition, the coefficient on currency mismatches is negative and significant, which supports the idea that a higher level of mismatches on bank balance sheets makes it more difficult to sustain a fixed regime. In line with the impossible trinity hypothesis, as countries liberalize their capital accounts, they tend to move toward more flexible regimes; but this coefficient does not attain statistical significance. The significant, negative sign on the high inflation dummy coefficient indicates that inflation at very high, unmanageable levels leads to the collapse of a fixed regime. This finding confirms a “sustainability hypothesis” that links weak governments with either the collapse of existing pegs or the inability to commit to a credible peg as a deflationary device. Surprisingly, the macroeconomic fundamentals considered by the OCA theory do not seem to provide guidance in exchange rate regime determination.

Turning to political variables, the positive, significant sign on the democracy coefficient supports the idea that higher levels of democracy decrease the probability that governments will

pursue a fixed regime.¹⁰⁷ Although trade openness is not significant, a higher proportion of domestic producers in manufacturing and agriculture relative to services also makes it more difficult to choose a fixed regime, consistent with expectations.

To ensure that my results are robust to the inclusion of additional variables suggested by theories of exchange rates, Model 3 includes two variables to account for the risk of currency crisis. The first is international reserves, including gold (in months of imports), which reflect the resources available to the central bank to defend a currency peg and to reduce the risk of speculative attacks.¹⁰⁸ Furthermore, I introduced a banking crises dummy, which equals 1 during episodes identified as systemic by Laeven and Valencia.¹⁰⁹ The severe banking crises that force central banks to print money to bail out failing banks contribute to currency-debt crises and collapses of exchange rate regimes (“twin crises”). As expected, the availability of reserves makes the sustainability of a peg more likely, while banking crisis is associated with a more flexible regime—although the latter does not attain statistical significance.

Model 4 contains additional covariates to capture supply side political determinants of exchange rate policy. The number of years that the incumbent administration has been in office is a proxy for government strength because long tenures indicate governments’ ability to adopt (and sustain) pegs or durable (likely authoritarian) governments with a high degree of control over the political process, which bear lower political costs of pegging.¹¹⁰ The years in office coefficient is positively signed and significant, indicating an association between government strength and regime choice. I also tested for the effect of partisanship (coded as a left or center

¹⁰⁷ Freedom House Democracy scores on political rights and civil liberties run from 1–14, with 1 representing the highest level of democracy and 14 the lowest.

¹⁰⁸ Data from the EBRD Transition Reports.

¹⁰⁹ Laeven and Valencia 2010.

¹¹⁰ Levy Yeyati, Sturzenegger, and Reggio 2010. Data generously shared by Iliana Reggio.

right dummy variable), but it does not significantly affect regime choice, nor does it change the coefficient estimates on the principal explanatory variable.¹¹¹ This result is in line with the predominant view in the literature on political parties in EE: the ideological dimensions of party systems are less important than their sociocultural dimensions and their attitudes toward the communist regime. The party labels of government incumbents do not always reveal their true economic policy stance.¹¹² In Model 5, I control for EU influence by using a dummy variable for EU accession, but it does not appear to have a significant impact on regime choice. The last column in Table 4 reports the marginal effects of a change in each explanatory variable on the probability of choosing an exchange rate peg.

Robustness Checks

I use the alternate measure of the key explanatory variable that reflects the importance of commercial banks relative to the central bank in allocating society's savings (the ratio of deposit money bank domestic assets to deposit money bank domestic assets plus central bank domestic assets) in Model 6. The expectation is that private banks are better able to identify profitable investments, monitor managers, and facilitate resource mobilization than are central banks.¹¹³ In Model 7, I also use an alternative control for high inflation countries, with a dummy taking a value of 1 when the annual rate of inflation is above 40 percent.¹¹⁴ The use of these alternative measures does not change the significance of the coefficient of foreign ownership across any of

¹¹¹ Data from Beck et al. 2001.

¹¹² Kitschelt et al. 1999.

¹¹³ Beck, Levine, and Loayza 2000.

¹¹⁴ This is the standard World Bank definition of high inflation.

the specifications.¹¹⁵ A measure of economic size, however, has become significant, increasing the likelihood of flexible regimes, as expected.

[Table 5 about here]

In Model 8, I re-estimated my model using the IMF de jure regime classification based on its *Annual Report on Exchange Rate Arrangements and Restrictions*¹¹⁶ to test whether the difference in exchange rate strategies among EE countries can be explained by the inappropriateness of the different classifications. This model also includes de facto regime to capture the assumption that previous actual regimes years affect current official regimes. Although the foreign ownership coefficient remains statistically significant, it does not have the expected sign. This difference is not surprising given that the observed discrepancies between the two classifications in EE countries are well documented.¹¹⁷ Von Hagen and Zhou find that regime discrepancies respond to the inappropriateness of the observed official regime.¹¹⁸ As argued previously, EE countries have been prone to “fear of floating,” which can result from gradual economic and institutional development favoring fixed regimes or from countries’ reluctance to declare official pegs because of reputational constraints and the fear of speculative attacks.

¹¹⁵ I also employ the Polity2 variable derived from the POLITY IV database as alternative measures of democracy and obtain similar results.

¹¹⁶ Dollarization, euroization, currency boards, conventional fixed pegs, horizontal bands, crawling pegs, and crawling bands were coded as fixed. Managed floats with no pre-announced path for the exchange rate and independent float were coded as floats.

¹¹⁷ Von Hagen and Zhou 2002, Markiewitz 2006.

¹¹⁸ Von Hagen and Zhou 2002.

Because exchange rate regimes adopted by EE countries cover a wide range of alternatives, some of which do not fall neatly into the conventional fixed-flexible dichotomy, I estimated an ordered logit allowing four choices of de facto regimes: hard peg, intermediate, float, and freely falling regimes (Model 9). In Model 10, I also estimate random effect GLS using the fine measure with 15 categories of de facto exchange rate regimes as the dependent variable to test the sensitivity that cut-off points do not lead to biased results.¹¹⁹ I obtain similar results to the baseline model,¹²⁰ although in ordered logit the coefficient on trade openness becomes significant and confirms expectations that more open economies are more likely to peg.

Endogeneity

Empirical research on exchange rate regimes faces *endogeneity* problems. Some regime choice determinants may reflect a possible reverse causality; that is, they may be the consequences of exchange rate regime performance.¹²¹ These include foreign ownership of banks. If foreign banks consider exchange rate instability and choose to invest in countries with fixed, stable regimes, then the models presented here may be biased due to possible endogeneity, which if present will produce overestimated coefficients. Furthermore, governments may implement regulatory barriers to foreign entry to limit the degree of foreign bank participation in order to perpetuate politicized finance pathologies associated with flexible regimes. Alternatively, governments in countries experiencing a shortage of capital may have incentives to adopt a fixed regime, in part to attract foreign investors.

¹¹⁹ In R&R fine classification, exchange rate regimes run from the most rigid regimes to the most flexible regimes on a scale from 1–15.

¹²⁰ Results remain unchanged when I use cut-off point 12; coding managed floating, free floating, freely falling, and hyperfloating regimes as floats; the rest as fixed regimes.

¹²¹ The Wald test of exogeneity is not rejected at 0.05 level.

I re-estimated my baseline regression by using the instrumental variable (IV) approach to instrument for my primary variable—foreign ownership—with the method of privatization variable, a suitable instrument because it is clearly correlated with financial reform. I have theoretically established elsewhere that insider methods of privatization are associated with weaker institutions of financial governance than direct sales of banks to foreign investors.¹²² This instrument also plausibly satisfies the exclusion restriction, that is, it almost certainly has an independent impact on the probability of exchange rate pegging. I am not aware of arguments in the existing literature that link a country’s privatization method to an exchange rate regime choice. I operationalize the privatization method used by the country by creating a dummy variable, assigning a value of 1 if privatization of banks and enterprises was conducted through direct sales, or 0 if the country privatized through insider methods—either voucher privatization with significant concessions to insiders, or management-employee buyouts—or if no privatization took place. I coded qualitative data on privatization using various years of the EBRD Transition Reports.¹²³ I use a cumulative measure of privatization because I expect its effect on financial reform to show with some time lags.

I use the IV strategy in the context of the generalized method of moments (GMM) estimation (and report Newey-West standard errors) to address the potential problem of heteroscedasticity and serially correlated errors.¹²⁴ GMM is usually used when facing heteroscedasticity of unknown form because standard IV estimators (though consistent) are inefficient in the presence of heteroscedasticity, preventing valid inference.¹²⁵ My dependent

¹²² See author (2009).

¹²³ I report only “primary” and “secondary” privatization methods.

¹²⁴ Heteroscedasticity tests (Pagan-Hall statistic) using levels of IVs as well as fitted value and its square signal problems of heteroscedasticity in the estimated equation’s disturbance process.

¹²⁵ Baum, Schaffer, and Stillman 2003.

variable in the baseline model is dichotomous—fix or float—but I am not aware of an IV estimator for a dichotomous dependent variable with heteroscedasticity and serially correlated errors, or of statistical tests for instrument strength and exogeneity.¹²⁶ Following Eichengreen and Leblang,¹²⁷ I will instead estimate linear probability models with heteroscedasticity robust standard errors.

I test the relevance (strength) and exogeneity of instrumental variables (that is, satisfaction of the exclusion restrictions) to ascertain the consistency of GMM estimates by performing the following tests. First, I report an F-test for the exclusion of the instrument(s) based on the first stage regressions and consider my instrument(s) strong if the F-statistic is greater than 10 based on the work of Staiger and Stock.¹²⁸ I also use the Kleinbergen-Paap robust test (Wald F statistic) for under-identification. Finally, I employ the Hansen test of over-identifying restrictions in a GMM context (called the J statistic) testing that the overidentifying restrictions are valid: that is, the instrumental variables are not correlated with the error term. In the context of the exchange rate regressions, moment conditions mean that privatization method may affect the exchange rate regime choice only through the financial reform indicators and the variables in the conditioning information set (that is, the other exchange rate regime determinants).

Table 6 reports the results of GMM estimation. Using either F-statistics from the first stage regressions for the joint significance of the instruments included in the structural models (88.40) or the Kleinberen-Paap statistic (88.398), I firmly reject the null hypothesis of weak instruments. The critical value for rejection of the hypothesis of weak identification is 16.38 (10

¹²⁶ IV probit relies greatly on the distributional assumptions: consistent estimation requires both normality and homoscedasticity of the errors.

¹²⁷ Eichengreen and Leblang 2006.

¹²⁸ Staiger and Stock 1997.

percent level) as reported in Stock and Yogo.¹²⁹ The instrument is significant in the first stage equations, and the coefficient on financial reform has retained both its statistical and its economic significance. The instrument of foreign ownership yields the expected result: the direct sales method of privatization leads to higher levels of financial institutional development.

[Table 6 about here]

CONCLUSION

I began with the proposition that the existing theories of exchange rates are incomplete because they do not advance generalizable propositions about the effect of bank ownership on government choices of exchange rate regimes. While I share with societal theorists an emphasis on interest groups as a powerful force in shaping economic policies, I argue that if and how governments respond to the lobbying of financiers depends not only on their organization and strength, but primarily on the ownership structure and institutional quality of domestic systems of finance. This article has outlined the finance-based theory that politicians' decisions to adopt and sustain a fixed exchange rate regime should be an increasing function of the financial systems dominated by outsider financiers and strong monetary and regulatory institutions.

From the standpoint of theory, this research holds considerable significance for different strands of the international finance literature. First, the findings of this article expand our understanding of the workings of interest-group politics by illuminating the relative capacity of banking interests to influence macroeconomic and financial policies. The original contribution of this study is that it does not treat financiers as a homogeneous societal group but argue that their

¹²⁹ Stock and Yogo 2005.

interests and behavior in economic policies are differentiated by the nature of their ownership. Second, this study also suggests research on interest groups in exchange rate policy should pay more attention to the ability of interest groups to engage in collective action to influence various macroeconomic policies that in turn affect exchange rate policy.

This research also contributes to the debate on financial development by identifying institutional structures of finance, in which financiers are the engines of economic growth, as well as those systems in which they become vested interests that contribute to unsustainable exchange rate policies and thus impede economic development. In addition, it contributes to a growing literature on financial liberalization.¹³⁰ In contrast to most analyses solely examining capital account liberalization, this article focuses on the liberalization of the domestic financial sector. Capital openness cannot be fully assessed apart from domestic financial reforms, as the financial sector has a broad economic impact and banking regulations strongly affect international capital movements.¹³¹ This study highlights the importance of liberalizing domestic finance, which is a precondition for the integration of economies into global financial markets.

From a broader societal perspective, this work should prove helpful in determining *a priori* a country's vulnerability when adopting a fixed regime and identifying the conditions in which this would be a sustainable policy choice. Indeed, it is notable in this regard that although strongly affected by the 2007-2009 global financial crisis, no transition economy with an open financial system, including a significant foreign bank ownership has been forced to abandon its fixed regime. Since the current financial crisis seems to bear some similarities with the 1998 crisis in Russia and other transition countries, in which the "financial oligarchs" played the main

¹³⁰ Mishkin 2006, Kaminsky and Schmukler 2003.

¹³¹ Horowitz 2005.

role, we can extract some useful lessons from this study.

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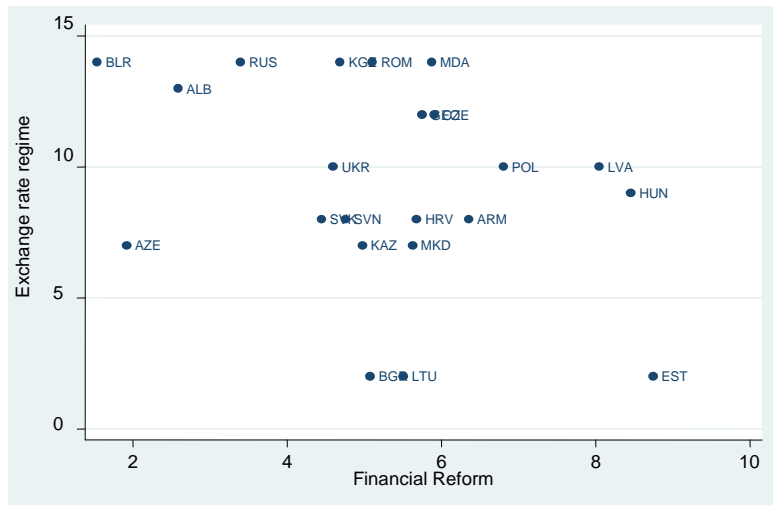


Figure 1: De facto exchange rate regimes in EE and foreign ownership in 1999

Table 1: Banks and their preferred policy outcomes

<i>Policy Area</i>	<i>Ownership</i>	
	State-Owned Banks	Foreign Banks
Monetary Policy	High inflation. Expansive credit policies and connected lending. Subordinated central banks.	Price stability. Conservative lending policies. Independent central banks.
Regulation	Protective regulation and restrictions on the right of bank establishment/entry. Unclear preferences regarding regulation of capital flows. “Soft-budget” constraints in lending.	Deregulation of bank entry. Deregulation of capital flows. Strict regulatory and risk management practices. “Hard budget” constraints in lending.
Exchange Rates	Monetary autonomy and flexible regimes. Fixed, but unsustainable regimes if faced with currency mismatches.	Monetary convergence and fixed regimes. International monetary integration.

Table 2: Exchange rate regimes in transition economies, 1990–2004

	<i>De Facto Exchange Rate Regime</i>		<i>De Jure Exchange Rate Regime</i>	
	Fix (%)	Float (%)	Fix (%)	Float (%)
1990–1995	21.55	78.45	52.63	47.37
1996–1999	46.88	53.13	42.00	58.00
2000–2004	73.50	26.50	34.15	65.65

Source: Author's estimates using IMF Annual Report on Exchange Rate Regimes and Restrictions; Reinhart and Rogoff (2008).

Table 3: Summary statistics

	Obs	Mean	Std. Dev.	Min	Max
EXCHANGE RATE (<i>de facto</i>)	331	0.447	0.498	0	1
EXCHANGE RATE (<i>de jure</i>)	337	0.427	0.495	0	1
FOREIGN OWNERSHIP	308	3.975	2.633	0.33	9.59
CURRENCY MISMATCHES	284	0.467	0.665	0	5.380
GDP	375	23.205	1.477	20.380	27.090
TRADE OPENNESS	353	94.784	33.131	26.257	182.673
HIGH INFLATION	356	0.205	0.404	0	1
CAPITAL OPENNESS	375	0.477	0.500	0	1
INDUSTRY AND AGRICULTURE	362	0.113	0.561	-1.237	1.666
DEMOCRACY	354	7.059	3.484	2	14
PARTISAN	374	0.396	0.484	0	1
YEARS IN OFFICE	326	4.135	3.129	1	21
BANKING CRISIS	375	0.139	0.346	0	1
RESERVES	304	3.125	2.046	0	11.800
EU	375	0.328	0.470	0	1

Table 4: Determinants of de Facto Exchange Rate Regimes

	Model 1	Model 2	Model 3	Model 4	Model 5	Marginal Effects ¹
FOREIGN OWNERSHIP	1.318*** (0.334)	1.328*** (0.360)	0.835* (0.346)	1.245*** (0.368)	1.260*** (0.356)	0.318 (0.102)
CURRENCY MISMATCHES (<i>log</i>)	-0.529* (0.245)	-1.048** (0.362)	-0.951 (0.574)	-0.942** (0.355)	-0.964** (0.360)	-0.241 (0.099)
GDP (<i>log</i>)	-0.564 (0.594)	-1.178 (0.777)	-1.114 (0.781)	-1.215 (0.805)	-1.217 (0.767)	-0.282 (0.196)
TRADE OPENNESS	0.003 (0.017)	-0.003 (0.019)	0.034 (0.021)	0.025 (0.022)	-0.003 (0.019)	-0.001 (0.005)
INFLATION (<i>dummy</i>)	-2.833** (1.005)	-2.406* (1.103)	-1.930 (1.243)	-3.360* (1.384)	-2.395* (1.089)	-0.521 (0.186)
CAPITAL OPENNESS (<i>dummy</i>)	-0.781 (0.993)	-1.592 (1.144)	-1.258 (1.143)	-2.326 (1.206)	-1.601 (1.140)	-0.345 (0.237)
AGRICULTURE AND INDUSTRY (<i>log</i>)		-7.417** (2.355)	-7.223** (2.746)	-7.941** (2.481)	-6.971** (2.332)	-1.777 (0.677)
DEMOCRACY		0.799** (0.296)	0.775* (0.301)	0.763* (0.320)	0.862** (0.301)	0.191 (0.082)
BANKING CRISIS (<i>dummy</i>)			-0.064 (0.764)			
RESERVES (<i>log</i>)			2.043** (0.789)			
PARTISAN				-1.602 (1.045)		
YEARS IN OFFICE (<i>log</i>)				1.276* (0.516)		
EU (<i>dummy</i>)					1.417 (1.546)	
CONSTANT	7.591 (13.877)	16.511 (18.008)	12.202 (18.303)	15.245 (18.661)	16.883 (17.716)	
Observations	251	250	234	249	250	
Log likelihood	-91.679	-81.004	-72.313	-74.185	-80.534	
Prob >chi2	0.00	0.00	0.00	0.00	0.00	

Standard errors in parentheses

* p<0.05, ** p<0.01, *** p<0.001

¹Average marginal effects based on the benchmark Model 2, measured by the first-order partial derivatives of the probabilities with respect to the variable in question and evaluated at the sample mean of each variable. The marginal effects of the dummy variables are measured as changes in the relevant probability when the dummy switches from 0 to 1.

Table 5: Robustness Checks

	Model 6	Model 7	Model 8	Model 9	Model 10
FOREIGN OWNERSHIP	5.323* (2.614)	1.147*** (0.342)	-0.731** (0.228)	-0.213** (0.082)	-0.406** (0.123)
CURRENCY MISMATCHES (<i>log</i>)	0.055* (0.026)	-0.932* (0.362)	-0.735* (0.287)	0.104 (0.124)	0.524*** (0.154)
GDP (<i>log</i>)	-1.024* (0.513)	-1.231 (0.751)	-0.028 (0.566)	0.234 (0.123)	0.813* (0.345)
TRADE OPENNESS	-0.003 (0.016)	-0.005 (0.019)	0.007 (0.017)	-0.022*** (0.006)	0.009 (0.010)
INFLATION (<i>dummy</i>)	-1.629 (1.035)	-2.051* (1.032)	-0.408 (0.921)	2.042* (0.871)	1.387* (0.607)
CAPITAL OPENNESS (<i>dummy</i>)	0.668 (0.760)	-1.424 (1.131)	-0.424 (0.871)	-0.300 (0.365)	-0.920 (0.573)
INDUSTRY AND AGRICULTURE (<i>log</i>)	-4.932** (1.706)	-7.542*** (2.274)	-3.707* (1.805)	1.158* (0.458)	2.773*** (0.818)
DEMOCRACY	0.087 (0.170)	0.786** (0.294)	-0.482* (0.210)	-0.082 (0.059)	-0.280* (0.129)
DE FACTO REGIME (<i>t-1</i>)			2.405*** (0.699)		
CONSTANT	17.024 (11.872)	19.002 (17.397)	3.189 (13.935)		-5.566 (8.364)
CUT 1				-0.615 (3.378)	
CUT 2				1.929 (3.367)	
CUT 3				3.015 (3.338)	
Observations	244	250	248	250	250
Log likelihood	-96.566	-81.513	-86.233		
Prob >chi2	0.00	0.00	0.00	0.00	0.00
Pseudo R ²				0.198	

Standard errors in parentheses

* p<0.05, ** p<0.01, *** p<0.001

Table 6: Instrumental Variables Regression Estimated via GMM

	Model 11	
	2nd Stage	1st Stage
FOREIGN OWNERSHIP	0.082** (0.028)	
PRIVATIZATION METHOD		0.348*** (0.037)
CURRENCY MISMATCHES (log)	0.022 (0.020)	0.002 (0.088)
GDP (log)	-0.020 (0.027)	-0.420*** (0.070)
TRADE OPENNESS	0.004*** (0.001)	-0.003 (0.003)
INFLATION (dummy)	-0.289** (0.103)	0.262 (0.277)
CAPITAL OPENNESS (dummy)	-0.090 (0.097)	1.883*** (0.207)
INDUSTRY AND AGRICULTURE (log)	-0.150 (0.100)	-0.599* (0.304)
DEMOCRACY	0.044** (0.014)	-0.157*** (0.034)
CONSTANT	0.077 (0.755)	14.104 (1.863)
Observations	234	
F-test	29.71	
(p-value)	(0.000)	
First stage-F	88.400	
(p-value)	(0.000)	
Hansen J Statistic	Equation exactly identified	

Notes: Instrument for financial reform: privatization method.
Heteroscedastic and autocorrelation-consistent standard error in parentheses.

* p<0.05, ** p<0.01, *** p<0.001