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All Crises are Global: Capital Cycles in an Imbalanced International Political Economy

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What factors generate financial fragility in open economies? Existing research assumes that the development of these conditions is more likely to emerge under some configurations of domestic economic and political attributes. We examine the development of financial fragility through the ontological lens of the new interdependence approach, which assumes that global factors can be as important as local factors in generating outcomes. We analyze global financial conditions from 1978 to 2009 and argue that contemporary global finance is an oscillating system that generates *boom and bust* capital flow cycles. The phases of this cycle are a consequence of the scale of US net borrowing on global markets: when the United States is a large net importer of foreign capital, other economies struggle to attract foreign capital and are substantially less likely to develop fragile financial positions; when US net capital imports fall, other economies receive an abundance of foreign capital, and financial fragility becomes more likely. In contrast, we find little evidence that cross-national variation in political institutions or financial systems explains why fragility develops, although some regional interdependencies are evident. We conclude that global conditions drive the probability of crises occurring someplace in the system, while local outcomes appear to be idiosyncratic.

In late 2015, the International Monetary Fund (IMF) asserted that that the risk of global financial instability had "rotated toward emerging markets" (2015, viii). The advanced economies, the IMF argued, had stabilized following the 2008–2009 subprime crisis as a result of a "strengthening macrofinancial environment" (2015, ix). Over the same period, however, many emerging market economies had developed highly leveraged banking systems, large foreign currency exposures, and asset price inflation. In the context of weak and falling commodity prices, emerging markets had then become vulnerable to a sharp unraveling of these positions. Somewhat curiously, however, in characterizing the global distribution of risk, the IMF treated developments in advanced and emerging markets as though they were independent from one another. That is, they assumed that the accumulation of risks in emerging market economies occurred quite independently of the stabilization of activity in the advanced economies, and vice versa.

Mainstream academic research on financial instability—banking crises, currency crises, sovereign debt crises—makes similar assumptions. Research focuses primarily on the domestic factors that might cause crises.[1] Scholars explore how domestic macroeconomic conditions, domestic political institutions, and characteristics of domestic financial systems shape the probability that a country will experience financial instability (Chwieroth 2014; Pepinsky 2014). Within this approach, researchers have examined the potential significance of a wide array of country-level factors, including specific characteristics of the regulatory environment (Barth, Caprio, and Levine 2006; Grabel 2015; Tsingou 2015; Wilf 2016), the relative importance of bank and equity finance in the local financial system (Copelovitch and Singer 2011; Hardie, Howarth, Maxfield, and Verdun 2013), the configuration of political institutions (Keefer 2007; Gandrud and Hallerberg 2015), the domestic distribution of political power (Calomiris and Haber 2014; Woll 2014), and the institutional location of regulatory authority (Winecoff 2014a). Others focus on developments internal to the financial system such as the rate of growth of credit (Jordà, Schularick, and Taylor 2011) and the increased prevalence of sophisticated financial instruments (Copelovitch and Singer 2011). Still other researchers concentrate on the broader macroeconomic environment, identifying conditions present in the buildup to crises, including large current account deficits and the corresponding capital inflow bonanzas (Reinhart and Reinhart 2009; Caballero 2016).

Others abandon the search for common correlates in favor of a close investigation of particular crises. The

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[1] There are exceptions. Bruno and Shin (2014, 537) argue that global credit booms and banking crises often follow periods of low interest rates in advanced economies. Eichengreen and Fishlow (1998, 25, 59) and Eichengreen and Rose (1998, 5–6, 20) noted a similar relationship, while Ocampo (2014) shows that US monetary tightening from 1979 precipitated the Latin American debt crisis.

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American subprime crisis, for example, has been investigated exhaustively (for example, Gorton and Metrick 2012; Lo 2012; Financial Crisis Inquiry Commission 2011). Scholars frequently organize research programs around "sets" of crises that occur simultaneously, such as those in Latin America in the 1980s, Eastern Europe and East Asia in the 1990s, and advanced economies in the 2000s. But even within these sets, scholars focus most heavily (although not always exclusively) on local rather than global causes. Such studies provide detailed and factually accurate accounts, but by focusing so closely on one crisis (or set of crises), they provide limited insight into the factors that may generate others. This research on the domestic causes of financial instability is important and useful. Like the IMF, however, most of this work models financial crises as independent events generated largely by domestic characteristics.

The emphasis on local attributes is surprising given the widespread recognition of America's global monetary and financial hegemony. Scholarship extending back to the 1960s has articulated the extent to which the United States is privileged in the global economy, and in particular in the global financial system.[2] The US dollar's role as the world's primary reserve currency has long been seen to confer an exorbitant privilege that enables the United States to attract foreign capital in large volumes for extended periods in order to delay the onset of domestic economic adjustment (Eichengreen 2012). Recent work highlights the extent to which the American financial system occupies the center of global capital markets (Oatley, Kindred Winecoff, Bauerle Danzman, and Pennock 2013; Winecoff 2015). American financial institutions function as the world's banker, borrowing from the world by issuing short-term assets and lending to the world on longer terms (Gourinchas and Rey 2007).[3] These characteristics of American financial hegemony strongly suggest that developments inside the United States should play an important role in distributing capital globally and should therefore exert a powerful influence on the accumulation of risk in emerging economies. Yet, this possibility has received much less attention than comparative case studies or cross-national regression designs that treat each country-year as if it is independent and identically distributed, as if the United States and Argentina influence (and are constrained by) global capital markets to the same degree.

We thus explore the global impact of American financial hegemony. We articulate why and how changes in American borrowing activity impacts financial stability in the periphery. In brief, we argue that, when the United States borrows heavily, the availability of foreign capital to emerging economies falls. US absorption of global capital reduces the likelihood of surges of global capital into emerging economies, which in turn makes asset bubbles in those economies less likely. And as a result, emerging economies subsequently experience substantially less financial instability. When American borrowing slows, global financial markets push capital to emerging economies, allowing more emerging economies to develop fragile financial positions. Asset prices inflate, banks become overleveraged, and foreign currency exposures rise sharply. This phase often—though not always—culminates in the simultaneous onset of systemic banking crises in a number of emerging economies. By this logic, therefore, global risks "rotated to emerging economies" (2015, viii) after 2009 precisely because the demand for capital in the advanced economies—and especially in the United States—fell sharply.

In focusing on the systemic drivers of financial instability, we advance the *new structuralisms* movement in international and comparative political economy. This developing literature takes many forms, including recent revitalization of dependency theory (Wibbels 2006), the new interdependency approach (Farrell and Newman 2014a, 2014b, 2015), a focus on structural power in the style of Susan Strange (Schwartz 2009a, 2013; Starrs 2013; Winecoff 2015; Young 2015), and applications of network theory (Gray and Potter 2012; Oatley et al. 2013; Ward, Ahlquist, and Rozenas 2013; Cranmer, Menninga, and Mucha 2015; Chaudoin and Wilf 2017). While different in many ways, all of these approaches characterize outcomes in the global political economy as following from the actions taken by key agents operating from core positions within highly asymmetric political, economic, and social structures.

We develop and empirically evaluate this perspective in three sections. The first section elaborates our theoretical argument and derives our principal hypothesis. We conceptualize global financial interdependence in network terms and demonstrate that the contemporary global financial system is most accurately described as deeply interdependent and highly asymmetrical. That is, national financial economies together constitute a single financial system that is organized into a core and periphery structure. Within this asymmetric system, variation in American borrowing determines how markets distribute financial capital between the core and the periphery: in periods of peak US borrowing, emerging economies attract little foreign capital, and so crises are infrequent events; in periods of American retrenchment, by contrast, financial capital floods into emerging economies and, as a consequence, subsequent crises occur with greater frequency.

The second section evaluates empirically our central expectation. We model the occurrence of capital inflow bonanzas and banking crises between 1978 and 2009. We find that variation in America's share of net cross-border portfolio capital flow is a substantively and robustly significant predictor of the likelihood of financial instability in the periphery. Moreover, we find less evidence that specific domestic factors are systematic predictors of financial instability in the periphery. Local factors appear to be idiosyncratically related to peripheral crises. Analysis of *push* versus *pull* factors provides further evidence that the dynamics we find are initially generated by politics within the core rather than by responses to global savings gluts in peripheral economies. The final section summarizes our argument, draws implications from our analysis, and highlights areas requiring further attention.

American Financial Power and Financial Stability in the Periphery

Accumulated experience over the last forty years suggests that financial developments in individual emerging market economies are highly correlated events rather than strictly independent ones (Rey 2015; Aizenman, Chinn, and Ito 2016). Figure 1 plots the number of countries that experienced a capital inflow bonanza—a sustained and unusually large net inflow of foreign capital—or a banking crisis each year between 1979 and 2009. The two time series powerfully illustrate the degree to which country-specific events correlate: if capital inflow bonanzas and banking crises were independent events, we would not observe much

[2] See Strange (1971); Kindleberger (1973); Eichengreen (1989); Andrews (2006); Cohen (2006); Kirshner (2008); Chey (2012); Eichengreen (2012); Oatley (2014); Winecoff (2015).

[3] See also Lane and Milesi-Ferretti (2001, 2007, 2012).

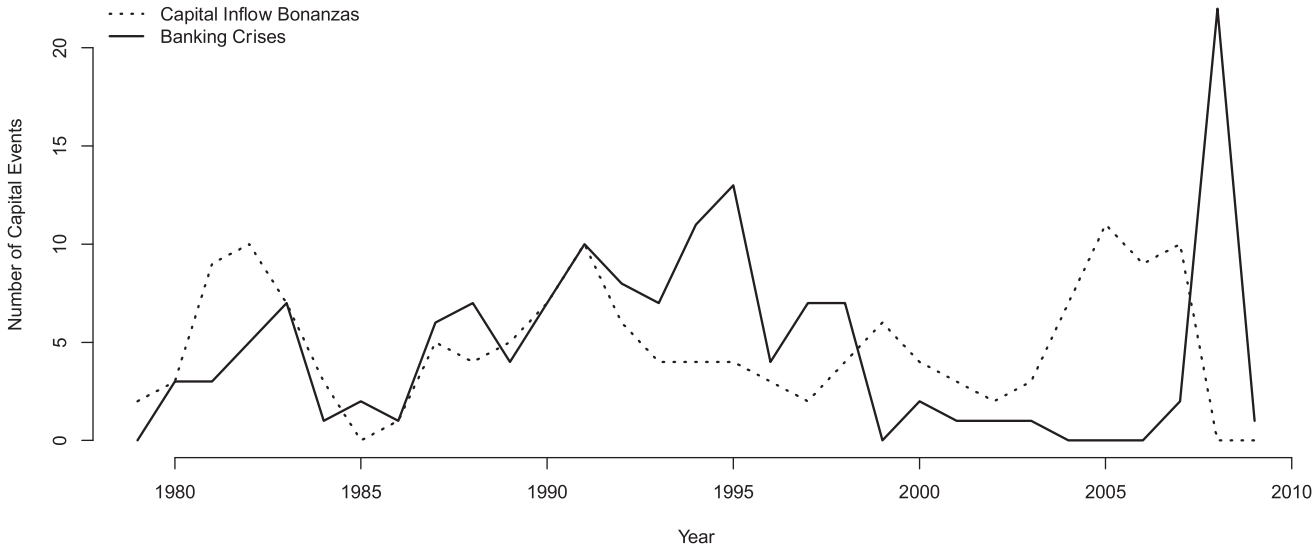

Figure 1. The number of capital inflow bonanzas and banking crises, 1979–2009
Source: Reinhart and Reinhart (2009); Laeven and Valencia (2012)

variation in the number of countries experiencing such events from one year to the next. Instead, we would expect a fairly uniform distribution. We might expect an upward trend in the annual average number of such events as a result of the liberalization of capital markets globally, which deepened global financial interdependence. Indeed, there is evidence of such a trend from roughly 1985 to 1997 (Rodrik 1998; Bordo and Eichengreen 1999; Eichengreen 1999). Yet, this trend reversed in spite of further capital account liberalization; the 1998–2007 period was remarkable for the stability of global capital markets. This stability gave way to widespread disruption in 2008–2009 as the subprime crisis struck the global north. Figure 1 thus provides evidence of an oscillating system: some periods are characterized by substantial bonanzas and crises while other periods have very few. Though this pattern would not be likely in a world of unit independence, such oscillation is characteristic of dynamical systems.

In order to uncover this systemic process, we must first conceptualize the system and then identify the mechanism that produces the oscillation. We conceptualize the system in terms of two variables: the strength of international financial interdependence and the degree of asymmetry that characterizes this interdependence. Financial interdependence results from open markets for trade and investment. Dynamical processes within the global financial system are generated by the thousands of independent decisions taken by participants in capital markets and banking systems. Participants in capital markets perform an allocational role in the global financial system. The financial system intermediates between savers and borrowers. In an international financial system characterized by little interdependence, this intermediation primarily connects domestic savers and domestic borrowers. As interdependence increases, the financial system intermediates between savers and borrowers globally. Local community authorities in Northern Norway can place their reserve funds in assets issued by American banks and collateralized by residential real estate in the American West. The global financial system thus pools the savings of households, corporate entities, and public agencies that reside in multiple national jurisdictions and distributes these funds across competing economic uses in multiple national jurisdictions. The interdependence of the contemporary financial system has grown expansively as governments removed barriers to cross-border capital flows (Aizenman, Chinn, and Ito 2008; Winecoff 2017a). The 2000–2007 period saw capital flows double (as a percentage of global GDP [global domestic product]) relative to the 1990–1999 period, and nearly treble relative to 1980–1989 (James, Mcloughlin, and Rankin 2014, 66). Over time, these cross-border transactions generated an increasingly dense international network of cross-border claims and obligations (Figure 2).

The degree of structural asymmetry is a consequence of the relative prominence of the national economies that compose the system (Oatley et al. 2013; Winecoff 2015). At one end of the spectrum lies a highly symmetric system in which all national economies are connected to all other national economies to about the same degree. In this system, no single economy would attract substantially more or less foreign capital than any other. As a result, global capital would tend toward a high degree of diversification across national economies and individual borrowers. At the opposite end of the spectrum lies an asymmetric system in which one economy is connected to most other economies, while all other economies are loosely connected (if at all connected) to each other. In this system, the center economy attracts substantially more capital from other economies and lends more to other economies than any other. The performance of the system, and outcomes within the countries that comprise it, is highly dependent on its organizational structure.

As global financial interdependence has deepened, it has done so asymmetrically. The global financial system has organized itself around the United States to a significant extent (Figure 2). Despite some speculation that American financial prominence would wane after the global financial crisis that began in 2007 (Helleiner 2010, 629–30; Kirshner 2014; 2008, 418–21), US banks have actually increased their network prominence in the ensuing years (Winecoff 2015). This "persistent myth of lost hegemony" (1987, 551) is nothing new; indeed, successive generations of scholars in the post–Bretton Woods era have predicted that American financial preeminence would weaken (Triffin 1978; Strange 1987), but the dollar remains as central to the currency system as it ever has been (Cohen and Benney 2014; Winecoff 2014b; Norrlof 2015), so American finance remains dispro-

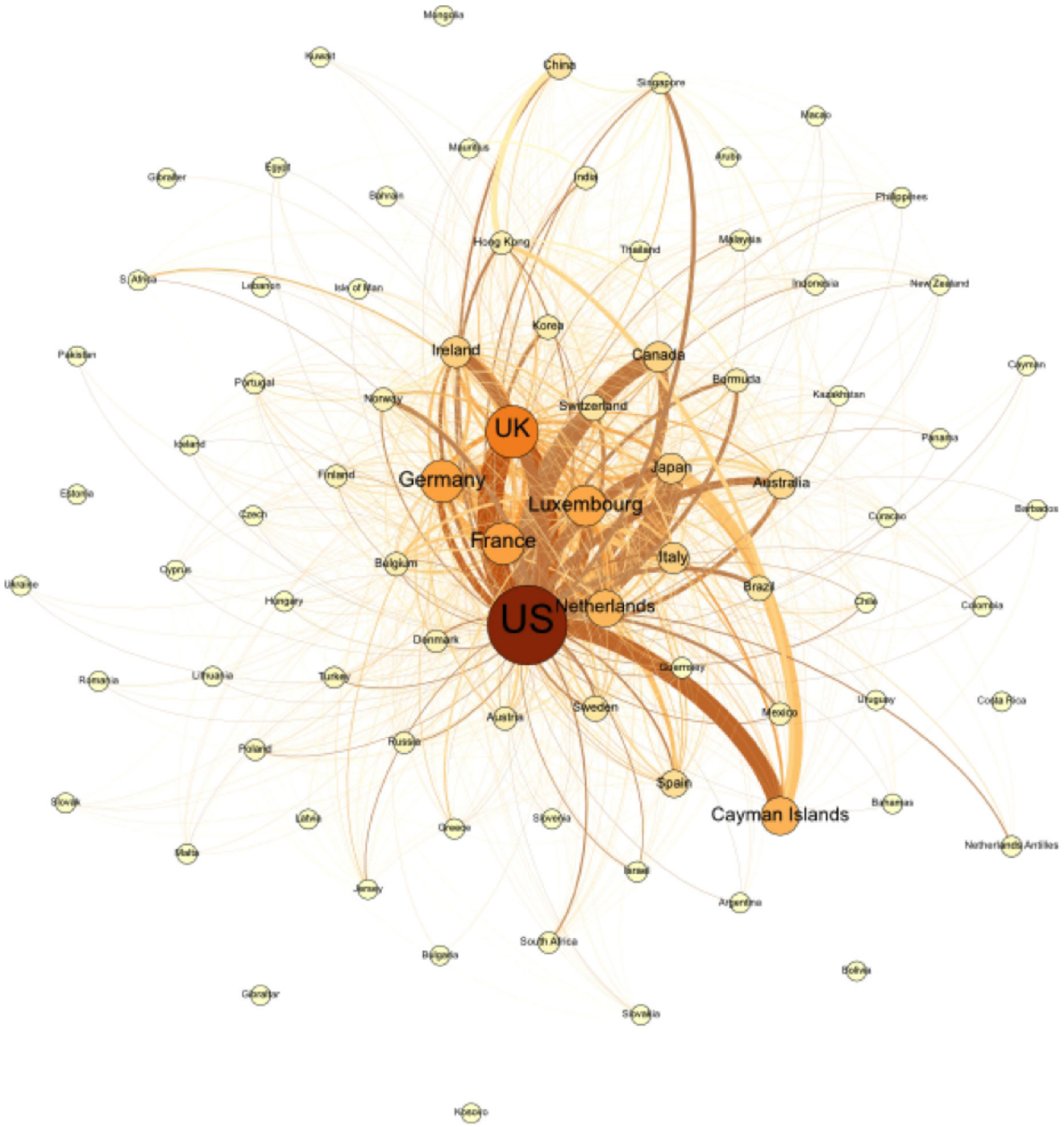

Figure 2. The global financial system in 2012, as measured by the IMF's Coordinated Portfolio Investment Survey.
Note: The darkness of nodes indicates greater degree centrality, while the thickness of ties among countries indicates the strength of a portfolio financial relationship. The United States is clearly at the core of the global financial system, which is hierarchically organized.

portionately privileged. In this privileged role, the United States attracts assets (and thus acquires liabilities) from more economies than any other economy, and American institutions lend to (and thus acquire claims upon) more countries than any other economy. The role of the United States has thus evolved from the "world's banker" during the 1960s to the world's venture capitalist today; the return on US foreign assets is significantly higher than the return on its foreign liabilities (Gourinchas and Rey 2007). American capital benefits from this global presence (Starrs 2013), and maintenance of this position appears to have motivated the Federal Reserve's international lending during the 2008–2009 crisis (Winecoff 2016).[4]

America's structural prominence may have originated from its attributes as a large economy with unparalleled geopolitical power. Indeed, the United States has more financial firms than any other country, including a disproportionate share of the largest firms (Maxfield et al. 2017). But over time, the initial advantage in the quality of its internal attributes has eroded; a growing number of economies enjoy similar levels of wealth, economic integration (particularly in Europe) has reduced the advantage of size that the United States once possessed, and American political institutions are not obviously superior to those of many other countries. Yet the United States remains in an advantaged position in global finance to a disproportionate—and perhaps surprising—degree. Oatley et al. (2013) argue that America's continued centrality reflects preferential attachment, an endogenous process whereby the structural posi-

[4] Schwartz (2009b) explicitly links American financial hegemony to the securitization of American real estate, while Oatley (2015) links US domestic politics and foreign policy priorities to its demand for global capital.

tion of core nodes is reinforced over time as they attract new ties at a greater-than-average rate. Thus, the United States' structural prominence is not solely due to its levels of wealth and power; indeed, Winecoff (2013, 9–12) suggests that some of American wealth and power results from its structural prominence.

Though scholars agree that structural prominence confers financial power to the center (Cohen 2000, 2006, 2013), few have examined how this asymmetry shapes the allocation of capital between the core and periphery over time. Whether or not capital markets generate a capital flow cycle depends upon the degree of asymmetry present in the global financial system. In a symmetric system, variation in the flow of investment capital to a single borrower—whether it is a firm, an industry, or a government—would have no observable impact on global market conditions. Markets would allocate financial capital across a diverse set of firms (and diverse set of government borrowers) active in a diverse set of industries located in a diverse set of countries. No borrower would have any easier access to financial capital than any other, contingent on creditworthiness, and no borrower's total demand for loanable funds would have any discernable impact on the availability of investment capital for others. In this type of financial system, capital inflow bonanzas and banking crises would be independent events, and oscillations of the kind evident in Figure 1 would be unlikely.

In asymmetric systems such as the contemporary financial order, by contrast, variation in the demand for financial capital at the center will have a significant impact on the global distribution of capital. As the center's demand for foreign capital rises, due to an increase in sovereign borrowing or greater private sector investment, the center economy will attract an increasing share of total available financial capital. And as the center economy's capital imports rise, the volume of financial capital available to borrowers elsewhere in the system falls significantly, *ceteris paribus*. In essence, in a deeply interdependent and highly asymmetric global financial system, borrowing in the center crowds out borrowing elsewhere. Conversely, when the center economy's demand for foreign capital falls, capital markets look for investment opportunities in other areas of the world and allocate a larger share of investment funds to borrowers in the periphery. In highly asymmetric systems, therefore, financial capital flows are characterized by a recurring cycle—heavily concentrated in the center of the system in periods of peak hegemonic demand and then distributed across a large number of borrowers in the periphery during periods of financial retrenchment at the center.

We hypothesize, therefore, that, in the deeply interdependent and highly asymmetric global financial system, variation in the frequency of capital inflow bonanzas and banking crises in the periphery is driven by capital market responses to developments at the center. More specifically, we hypothesize that variation in American borrowing generates an oscillating cycle in the global financial system. In periods of heavy American borrowing, the United States attracts a significant share of capital flows, and the relative scarcity of global capital available to other borrowers limits the number of economies that experience capital inflow bonanzas. In the absence of capital inflow bonanzas, few peripheral countries experience asset price inflation, and thus few economies see precarious balance sheets develop in their banking systems. As a consequence, the global frequency of banking crises falls sharply. When US borrowing falls, capital markets direct a growing share of investment to borrowers in the periphery. As a result, the number of economies that experience a capital inflow bonanza increases. As credit becomes more readily available to emerging market economies, asset prices are more likely to inflate sharply and banks are more likely to lend for the purchase of assets whose values appear to be rising. When asset prices eventually deflate, banks that have loaned heavily in these markets are rendered illiquid and/or insolvent. Thus, the global frequency of banking crises increases.

While other large states could conceivably generate similar capital flow cycles, we believe the United States is unique in several key respects. First, the United States issues and controls the world's primary reserve currency; indeed, the extent to which the dollar remains central in global currency networks is remarkable, and it is this prominence that gives the United States the ability to impact global markets. Second, while other major powers may enjoy regional prominence, none are as globally influential as the United States (Oatley et al. 2013). Indeed, dynamics internal to the European Monetary Union appear to be the converse of the global system, as the central country (Germany) has pushed funds into the periphery through current account surpluses rather than absorbing them through current account deficits.[5] To be clear, we do not contend that the United States is *sui generis*, but rather that variation in the American demand for capital disproportionately influences global capital cycles precisely because it happens to be the economy at the center of global finance.

Empirical Analysis

We test our hypothesis against two measures of financial stability. The first is the occurrence or nonoccurrence of a capital inflow bonanza in country *i* in year *t*. We measure *capital inflow bonanza* as any year in which a country experiences net capital inflows (measured by the current account balance as a percentage of GDP) that are in the top twentieth percentile of the entire sample (Reinhart and Reinhart 2009, 16). Our definition of bonanzas thus focuses on net capital inflows rather than gross flows. While gross flows can differentiate between foreign and domestic investor decisions, net flows offer a more appropriate indicator of a rapid increase in capital availability, our primary interest.[6] The occurrence or nonoccurrence of a *banking crisis* in country *i* in year *t* is our second dependent variable. We use the Laeven and Valencia (2012) data. They identify a banking crisis using two criteria: (1) substantial distress in the banking system as evidenced by bank liquidations, bank runs, and significant balance sheet losses; and (2) substantial government interventions in the banking sector such as nationalization, abnormal liquidity support, and bank holidays in response to losses.

[5] Nevertheless, we explore whether other large economies could drive capital cycles in our empirics.

[6] See Forbes and Warnock (2012, 237–41), Ghosh, Kim, Qureshi, and Zalduendo (2012), and Amri, Richey, and Willett (2016) for discussions of gross versus net measures. In the Forbes-Warnock index constructed from gross flows data, countries can experience a capital surge and a sudden stop simultaneously. Often, this indicates that residents are repatriating financial assets previously held abroad while foreigners are withdrawing their local assets. Assessment of the overall experience when a surge and stop happen simultaneously is not straightforward. Forbes and Warnock also measure capital flight and retrenchment, which further complicates efforts to rely on gross flows. Though net measures are most appropriate for our analysis, we reproduce the results using gross flows in the appendix. We find that stops and retrenchment indicators perform very similarly to bonanzas and crises and that, across all measures of gross flows, most local attributes are not useful predictors of abnormal events. The relationship between capital account inequality and surges and flight are distinct from the findings of our main analysis. What drives this disparity between net and gross flows is an interesting empirical question beyond the scope of this article.

We measure our principal explanatory variable, the *distribution of K flows* between the core and the periphery, by creating a Gini coefficient for the ten largest capital account surpluses that exist each year.[7] Values increase as capital flows become increasingly concentrated in the American economy (see Figure 3). Conversely, as the periphery attracts a larger share of net cross-border flows, the index value becomes smaller. Figures 4 and 5 offer snapshots of the underlying imbalances that produce the minimum and maximum values for this variable.[8] In 1991, the US capital account recorded a very small imbalance and net capital flows were distributed across a large number of small countries. Hence, low index values indicate years in which net cross-border capital flows are evenly distributed across many borrowers. In contrast, in 2002 the United States attracted more than $500 billion of net capital imports—by 2006 it was $800 billion—and other countries attracted significantly less. High values thus indicate years in which net capital flows are concentrated in the United States.[9]

Our distribution of K flows is highly correlated with but more informative than a direct measure of US capital imports. As Figure 3 illustrates, the distribution of K flows correlates highly with US capital account surpluses (0.75).[10] When the United States runs large surpluses, the variable takes on large values. When the US capital account surplus is small, the variable reports small values. In one important respect, therefore, the measure provides the same information as the capital account surplus. The distribution of K flows offers more information than this US-specific measure, however. A US-specific measure provides no information about the global distribution of capital during periods of low US borrowing. And it is certainly possible that, during these periods, cross-border flows are highly concentrated in another large borrower rather than distributed more evenly across many small borrowers. The distribution of K flows index provides precisely this information: it provides information about the state of the world when the United States is not borrowing heavily. For that reason, the distribution of K flows is a better measure of our systemic variable than country-level alternatives. We expect a negative coefficient on this parameter, indicating that the likelihood of a bonanza or banking crisis decreases as the United States' share of capital flows increases.

Bonanzas and banking crises may spread regionally. Disentangling these two observationally equivalent processes is a challenge. In one process, simultaneous bonanzas and crises in neighboring economies are a product of regional contagion driven by actual transmission of a crisis from country *i* to country *j*. Here one might think of the banking crisis in Cyprus during 2013, which arose in part because of losses sustained as a consequence of high exposure to Greek government debt. In other instances, neighbors experience simultaneous events because they face the same conditioning global macroeconomic environment. Here we might think of the recent fragile five experience of inflow bonanzas, asset bubbles, and financial stress as a consequence of macroeconomic adjustment in the United States (Nechio 2014). Previous work has shown that direct transmission of contagion is exceedingly rare (Hund, Bartram, and Brown 2007), while the experience of simultaneous crises as a result of changed global conditions appears to be much more common. To resolve this challenge, we regress a count of regional bonanzas on the distribution of K flows and then use the residuals as a measure of *regional bonanza contagion*. Effectively, this measure represents the portion of region-wide bonanzas in any given year that is not explained by the distribution of K flows. Similarly, we regress a count of regional banking crises on the distribution of K flows. *Regional crisis contagion* is the residual of this regression.

We control for multiple measures of domestic political and economic attributes. We employ two measures of political institutions. Pepinsky (2014, 272–75) finds that institutional effectiveness is more important than institutions of popular accountability in reassuring investors during periods of financial stress. Unfortunately, cross-national measures of effectiveness have limited coverage until the mid-1980s. Therefore, we rely on *regime type*, measured using Polity2 from the POLITY IV project. We assume that institutional effectiveness is highly correlated with Polity2—more democratic regimes have more effective institutions. We then perform robustness checks on the subsamples that include various measures of governance effectiveness such as bureaucratic quality, investment profile, law and order, government stability, corruption, and transparency. These are reported in the appendix.

We control for *economic growth* with the expectation that faster-growing economies will attract more capital than will slower-growing economies. We control for *level of development* measured by GDP per capita. High-income countries should attract more capital than low-income countries. We include *inflation* as an indicator of macroeconomic stability. We expect low inflation countries to attract more capital than high inflation countries. *Government indebtedness*, measured as sovereign debt as a percentage of GDP, increases the likelihood of a bonanza and increases financial fragility, thus making a banking crisis more likely. Finally, we control for *banking system development*, measured by the ratio of bank deposits to GDP. Countries with larger banking systems are more likely to attract foreign capital and less likely to experience a crisis.[11] These data come from the World Bank's World Development Indicators.

[7] Our results are robust to the following alternative specifications: Gini of the twenty largest capital account surpluses, Gini of the ten largest current account deficits, and Gini of the twenty largest current account deficits. See the appendix for descriptive statistics and results from those models.

[8] The appendix provides similar figures for current account imbalances.

[9] Figures 4 and 5 illustrate our argument. In 1991, the US current account recorded a small surplus, the only time it has done so since 1981. No other economies were absorbing a substantial share of capital; in fact, this graph is scaled to millions of US dollars, whereas just a decade later the United States' capital account surplus was more than $500 billion (see Figure 5). The global financial system was thus pushing capital into emerging economies during the 1990s, and Figure 1 shows an increasing number of crises throughout the first half of the 1990s. Total imbalances shrank in the late 1990s but then increased markedly in the early 2000s (see appendix). There are two likely reasons for this. First, a number of economies increased their holdings of reserve-currency assets to self-insulate from the currency crises that plagued emerging economies in the 1980s and 1990s, while others accumulated reserve-currency assets as a by-product of an export-led development strategy. As the dollar is the world's primary reserve currency, this effectively pushed investment into the United States to the point that, by 2006, the United States' current account was about $800 billion in the red in a single year. This became known as the "global savings glut" (Bernanke 2005), and the result was rising imbalances. Second, as Figure 5 shows, a number of countries had substantially higher external deficits in 2002 than in 1991, many of which were members of the European Union. Thus, intra-EU dynamics led to increasing imbalances within Europe, while global savings glut dynamics—along with debt-fueled American spending—increased imbalances globally (Schwartz 2009b; Oatley 2015).

[10] The correlation between the United States current account and a Gini coefficient of global current account imbalances is even stronger: 0.88. The relationship between the US current account, reported in the World Bank's WDI, and the US capital account, reported by the IMF, is 0.95. See the appendix for additional information.

[11] One might argue that banking sector regulation is more influential than banking system development. In the appendix, we show our results are robust to including a measure of banking sector reform. We thank an anonymous reviewer for this suggestion.

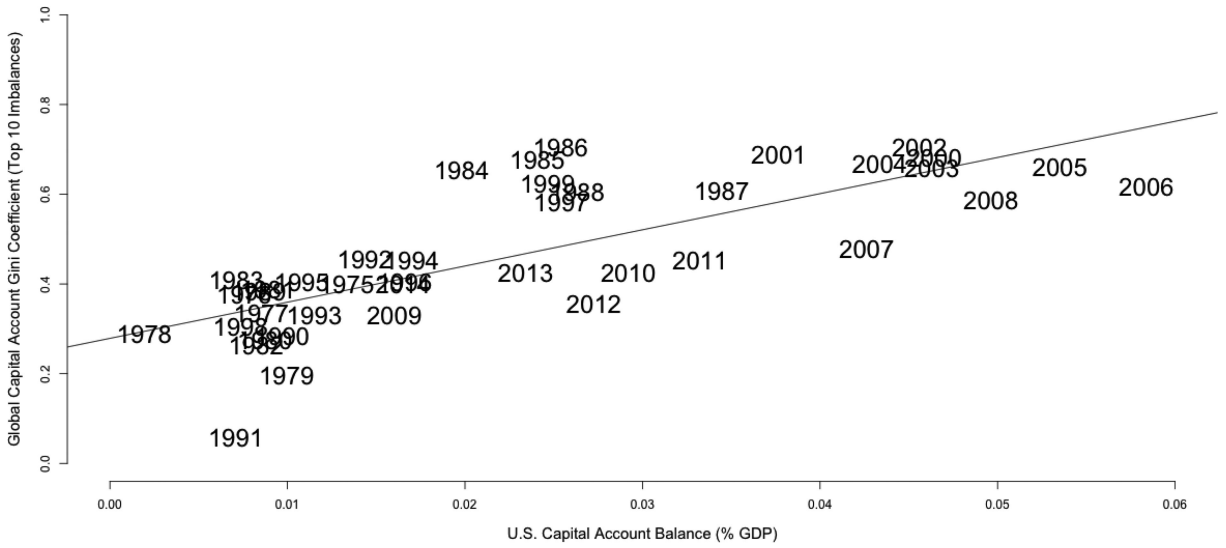

Figure 3. The relationship between the US capital account balance and the global capital account Gini coefficient, 1975–2015

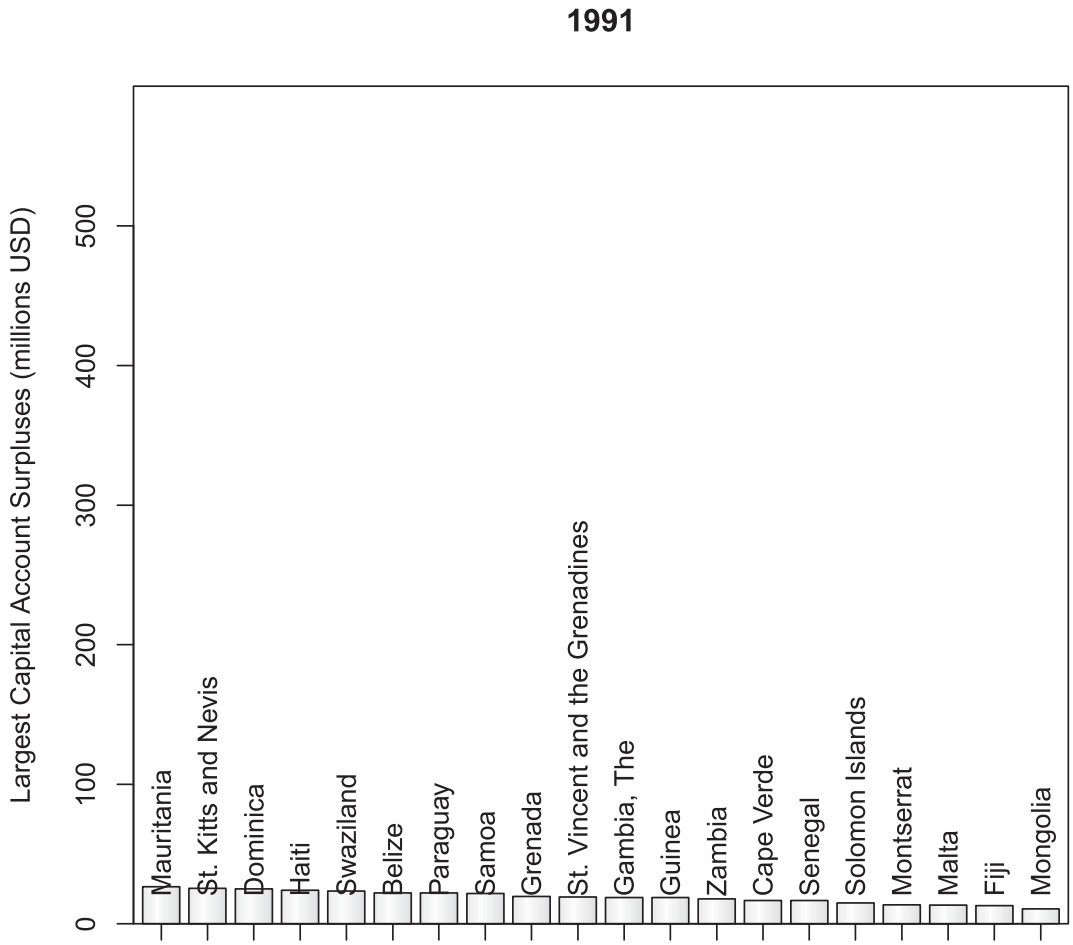

Figure 4. The twenty largest capital account surpluses in 1991, when the global economy was quite balanced

We also control for the domestic economic policies that constitute the so-called trilemma. First, we control for *capital account openness*. Governments that restrict capital flows are less likely to experience capital flow bonanzas and banking crises than governments with an open capital account. *Exchange rate stability* may increase capital inflows by reducing investors' perceptions of exchange rate risk. States with stable exchange rates are thus more likely to experience capital inflow bonanzas than states with floating exchange rates. In addition, fixed exchange rates can provide a target for speculation that weakens bank balance sheets during times of economic distress. Thus, states with fixed exchange rates are more likely to experience banking crises than states that float. *Monetary independence* may give governments the policy

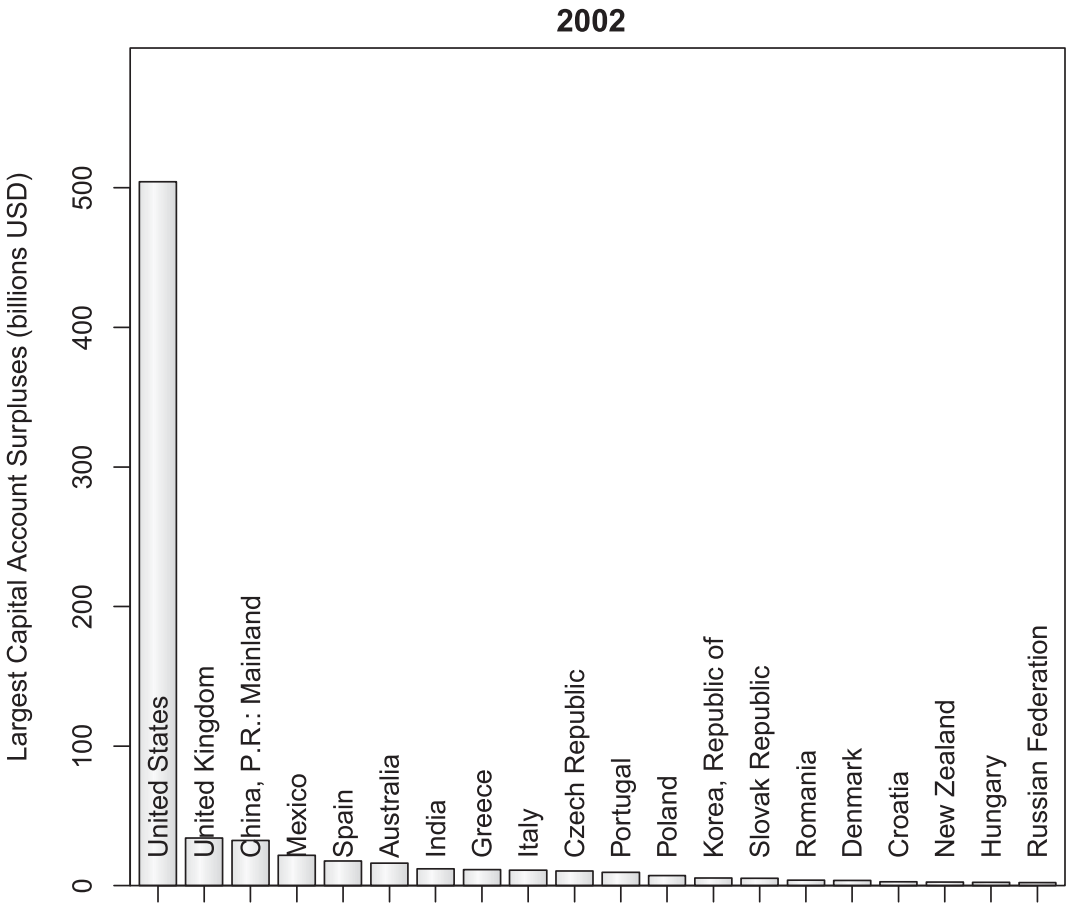

Figure 5. The twenty largest capital account surpluses in 2002, when the global economy was exceptionally unbalanced (note the change in scale to billions of US dollars from millions in Figure 4)

autonomy necessary to respond effectively to deteriorating macroeconomic conditions. States with monetary independence are thus less likely to experience bonanzas and crises than states that do not have independence. Data for these policy variables come from Aizenman et al. (2008).

Estimation

We manage the temporal dimension of our data as follows. Because financial markets are fast moving, most of our explanatory variables will exert immediate pressure on bonanzas and crises. However, previous studies have found that bonanzas persist for multiple periods and that as capital surges build the likelihood of a subsequent crisis increases (Kaminsky, Reinhart, and Vegh 2005; Reinhart and Reinhart 2009; Reinhart and Rogoff 2009). Therefore, in our bonanza models we include a lagged dependent variable. In crisis models we need to control for bonanzas in the previous year. Yet, merely lagging our bonanza variable would create problems similar to those posed by regional counts of capital events. We manage this problem by extracting the residuals from our bonanza model to create the variable *bonanza residuals*, which can be interpreted as the incidences of bonanza that remain unexplained by the variables in our model. We then include a lagged value of this variable in the models of banking crisis.

We estimate our models in three steps. Step one includes only systemic explanatory variables. In step two, we add our measures of regional contagion. Step three incorporates domestic political and economic attributes. We estimate our models with a logit link function, and we report the results from fixed effects and random effects estimation. To test the sensitivity of the findings, we perform additional analysis using probit and rare events logit, which are reported in the appendix. To aid interpretation, we have standardized all nonindicator explanatory variables.

Results

Table 1 reports the results for capital inflow bonanzas. Importantly, fixed effects models drop from the analysis countries that did not experience a bonanza. Models 1 and 2 provide estimates from baseline equations that establish a relationship between the distribution of K flows and capital inflow bonanza, controlling for lagged values of capital inflow bonanza. Both models indicate that the likelihood a country experiences a capital inflow bonanza decreases as capital flows become increasingly concentrated globally; conversely, the likelihood that a peripheral country experiences a capital inflow bonanza increases as capital flows become less concentrated in the center. Models 3 and 4 introduce *regional contagion*. As expected, a capital inflow bonanza in any given economy is more likely when other economies in their region also experience a capital inflow bonanza. The distribution of K flows remains significant in these models, with little change in the size and uncertainty of the coefficient estimate.

Table 1. Determinants of capital inflow bonanzas

	Model 1	*Model 2*	*Model 3*	*Model 4*	*Model 5*	*Model 6*
Bonanza$-;_{t-1}$	**2.389**	**1.973**	**2.320**	**1.910**	**2.522**	**1.654**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Capital account inequality	**−0.306**	**−0.294**	**−0.281**	**−0.264**	**−0.407**	**−0.328**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Regional bonanzas residual			**0.282**	**0.276**	**0.271**	**0.266**
			(0.000)	(0.000)	(0.001)	(0.001)
Economic growth					−0.023	−0.009
					(0.851)	(0.957)
Level of development					**0.324**	**−1.705**
					(0.041)	(0.042)
Inflation					0.066	−0.081
					(0.433)	(0.464)
Capital account openness					0.186	0.149
					(0.084)	(0.280)
Monetary independence					0.151	0.084
					(0.093)	(0.385)
Exchange rate stability					−0.097	−0.077
					(0.349)	(0.548)
Size of banking sector					−0.069	0.184
					(0.661)	(0.527)
Government indebtedness					−0.043	−0.293
					(0.705)	(0.110)
Democracy					−0.137	−0.454
					(0.528)	(0.137)
Fixed effects	No	Yes	No	Yes	No	Yes
N	170	62	170	62	141	52
n	5115	2045	5115	2045	2799	1319
AIC	2145.2	1564.0	2118.3	1537.3	1346.1	948.8
BIC	2171.3	1575.2	2151.0	1554.2	1429.3	1011.0

Notes: (1) P-values in parentheses. (2) Bolded coefficients represent estimates where zero is outside of the 95 percent confidence interval.

Models 5 and 6 introduce country-level attributes. The significance and size of the global and regional variables are robust to the inclusion of these factors. In contrast, local variables have less impact on the likelihood that a country experiences a capital inflow bonanza. There is some evidence that wealthier economies are more likely to experience a bonanza than their poorer counterparts, but only in the random effects models. Capital account openness and monetary independence approach statistical significance in the random effects model, but standard errors increase in the fixed effects specification. Neither economic growth nor inflation returns a significant effect on the likelihood of a bonanza, nor do the models suggest that regime type or government indebtedness have any systematic impact.

Table 2 reports the models where *banking crisis* is the outcome variable. Again, the fixed effects models drop countries that did not experience a banking crisis during the time period. As explained above, the prior incidence of a capital inflow bonanza is a strong predictor of crisis, and therefore we include lagged values of bonanzas in the banking crisis models. We are also interested, however, in the independent effect of a variety of mechanisms on crises that we have already established to affect bonanzas. Therefore, we begin by extracting the residuals from Model 1. These residuals represent the portion of capital inflow bonanzas that remains unexplained by the distribution of K flows. In the appendix, we also extract residuals from Model 5 and rerun the analysis; substantive effects remain the same. Models 7 and 8 estimate the relationship between the distribution of K flows and banking crises, controlling for capital inflow bonanzas. The distribution of K flows has a negative sign and is statistically significant. This indicates that the likelihood that a peripheral country experiences a banking crisis falls as capital inflows concentrate in the United States and increases as capital flows become more dispersed across a large number of smaller economies.

Models 9 and 10 control for regional contagion as before. *Regional crises* increase the probability that a country suffers a banking crisis of its own. Rather than reducing the magnitude or significance of the distribution of K flows, however, including regional crises in the model increases the magnitude of this effect. This suggests that the regional and global dynamics are unlikely to be unrelated.

Models 11 and 12 introduce domestic political and economic characteristics. In these models, the effect of the distribution of K flows increases in size while retaining statistical significance. The effect of regional crises also remains statistically different from zero. Of the local factors, only economic growth consistently returns a statistically significant coefficient; growth is negatively associated with crisis, which is not surprising. There is some evidence that capital account openness is negatively associated with crises; the coefficient estimate remains negative across all model specifications but only approaches statistical significance in the fixed effects models. In contrast, inflation is positively and statistically significantly associated with increases in banking crises, but only in the random effects models. No other domestic variable is statistically significant.

Table 2. Determinants of banking crises

	Model 7	*Model 8*	*Model 9*	*Model 10*	*Model 11*	*Model 12*
Bonanza residual$-_{t-1}$	**1.030**	**0.825**	**1.130**	**0.847**	**1.206**	**1.024**
	(0.000)	(0.003)	(0.000)	(0.003)	(0.002)	(0.008)
Capital account inequality	**−0.245**	**−0.261**	**−0.222**	**−0.277**	**−0.323**	**−0.323**
	(0.002)	(0.001)	(0.007)	(0.001)	(0.006)	(0.012)
Regional crises residual			**0.641**	**0.650**	**0.487**	**0.529**
			(0.000)	(0.000)	(0.000)	(0.000)
Economic growth					**−0.520**	**−0.501**
					(0.002)	(0.009)
Level of development					−0.202	−0.441
					(0.355)	(0.766)
Inflation					**0.182**	0.112
					(0.017)	(0.347)
Capital account openness					−0.245	−0.576
					(0.194)	(0.080)
Monetary independence					0.021	−0.105
					(0.894)	(0.564)
Exchange rate stability					−0.125	−0.103
					(0.386)	(0.639)
Size of banking sector					0.141	0.268
					(0.557)	(0.681)
Government indebtedness					−0.274	−0.184
					(0.087)	(0.566)
Democracy					−0.072	−0.216
					(0.811)	(0.656)
Fixed effects	No	Yes	No	Yes	No	Yes
N	170	110	170	110	141	56
n	5114	3399	5114	3399	2799	1300
AIC	1263.7	888.5	1134.3	759.9	569.8	351.6
BIC	1289.9	900.8	1167.0	778.3	652.9	413.7

Notes: (1) P-values in parentheses. (2) Bolded coefficients represent estimates where zero is outside of the 95 percent confidence interval.

Overall, the statistical models provide substantial evidence that systemic global and regional effects are important drivers of capital inflow bonanzas and banking crises and surprisingly little indication that local factors beyond economic growth are robust predictors of capital inflow bonanzas or banking crises.

Substantive Effects

Our discussion of the estimated substantive effects is aided by predicted probability curves. Here we report predicted probabilities of a capital inflow bonanza and a banking crisis generated by Model 5 and Model 11 (the fullest specifications) while holding all other independent variables at their mean values. Figure 6 illustrates that the probability of a capital inflow bonanza decreases as the distribution of K flows increases. At the mean value for the distribution of K flows, the probability of a capital inflow bonanza is 6.5 percent. Increasing the distribution of K flows by a one standard deviation decreases the probability of a capital inflow bonanza to 4.5 percent, which represents a 30 percent drop in the probability of experiencing a bonanza. An equivalent decrease in the distribution of K flows increases the probability of a bonanza to 9.37 percent, nearly a 30 percent increase. Note also that the estimated effect is more precise at high values of distribution of K flows than at low values.

We observe a recent example of this cycle between 1998 and 2013. The United States attracted a significant share of net cross-border flows between 1998 and 2005. As a consequence, the global frequency of bonanzas fell sharply. As the system moved past 2005, however, net flows became less concentrated in the United States, and the frequency of bonanzas increased sharply, first in Europe in 2005–2008 and then in emerging markets (including Brazil, Turkey, India, Indonesia, and South Africa). An almost identical cycle is evident in the 1990s. As the United States reduced capital imports after 1989, foreign capital flooded into emerging markets. East Asia attracted large and sustained inflows, and Thailand, Indonesia, Malaysia, and South Korea

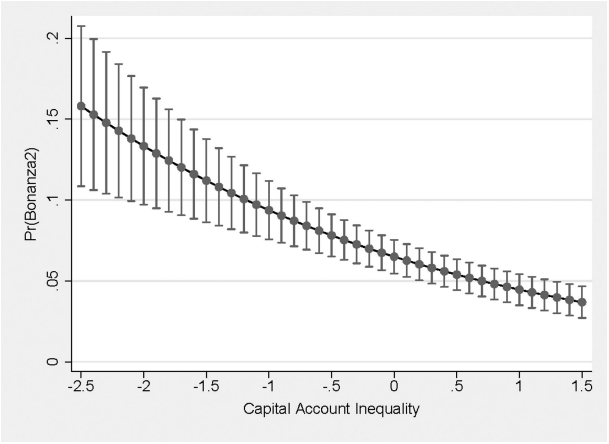

Figure 6. Effect of capital account inequality on predicted probability of bonanza with 95 percent confidence intervals

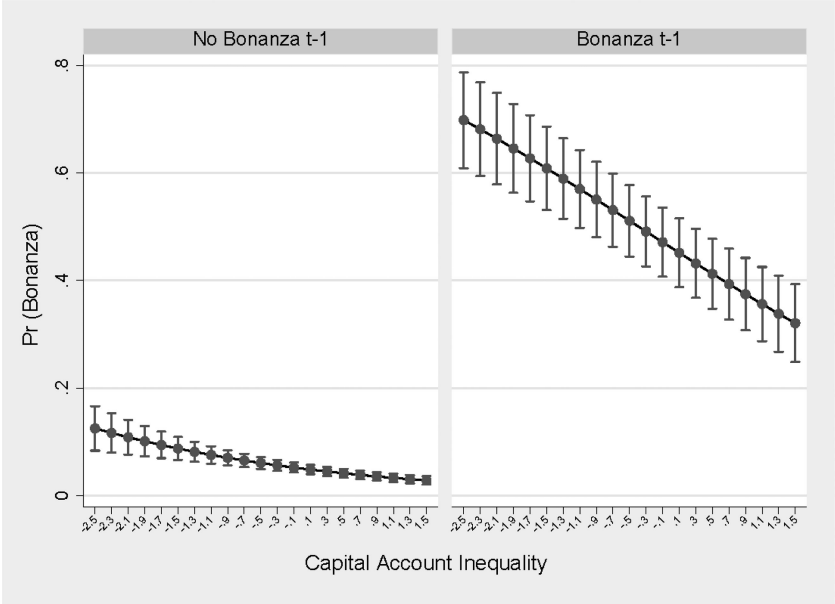

Figure 7. History and the effect of capital account inequality on the predicted probability of bonanza with 95 percent confidence intervals

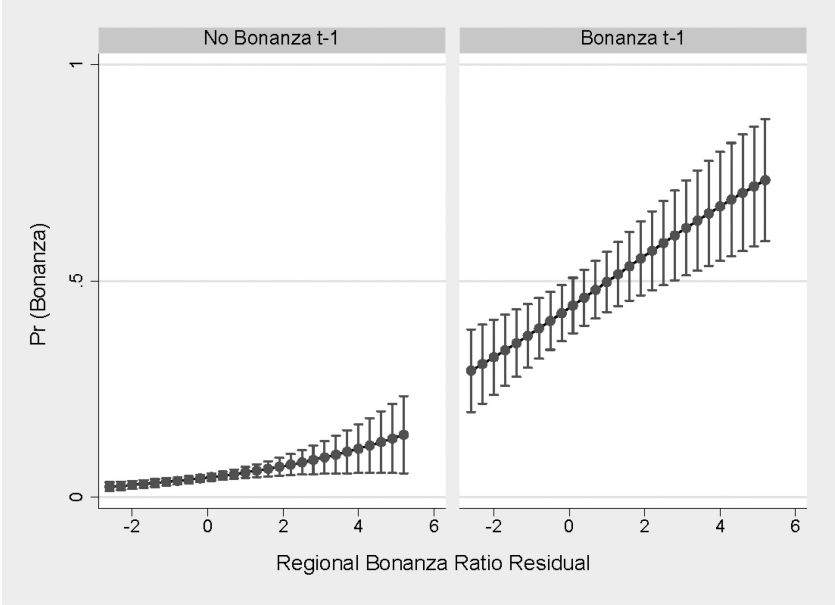

Figure 8. Effect of regional bonanzas on predicted probability of bonanza with 95 percent confidence intervals

experienced large bonanzas and eventually major banking crises in 1997.

Figure 7 separates the effect of the distribution of K flows by whether a country experienced a bonanza in the previous year. The size of the effect for countries that did not experience a bonanza in the previous year is similar in magnitude to those reported in Figure 6. The effect for countries that experienced a bonanza in the previous year, however, is much larger. At the mean value of the distribution of K flows, the probability of bonanza at time *t* for countries that experienced a bonanza in the preceding year is 46.1 percent. One standard deviation increase in the distribution of K flows decreases the probability of bonanza to 36.5 percent, while a one standard deviation decrease increases the probability of bonanza to 56 percent.

Figure 8 illustrates the effect regional bonanzas have on the probability of a bonanza. Substantively, a one standard deviation increase in the regional bonanza variable above its mean increases the probability of bonanza in another country from 5.9 percent to 7.4 percent. However, the size of effect is four times larger for countries that experienced a bonanza in the previous period. In such cases, a one standard deviation increase in regional bonanza increases the probability of contemporaneous bonanza from 43.7 percent to 49.8 percent. These findings are consistent with the argument that regional clustering of bonanzas reflects common exposure to global conditions rather than intraregional contagion. If bonanzas spread within regions, we would expect a larger substantive effect of the regional bonanza variable on the propensity to experience a bonanza. Moreover, this

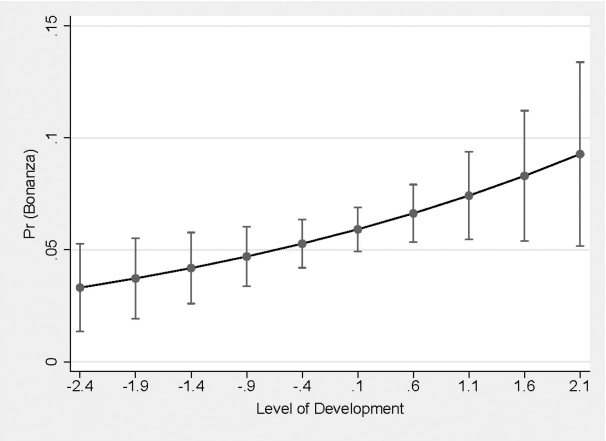

Figure 9. Effect of economic development on predicted probability of bonanza with 95 percent confidence intervals

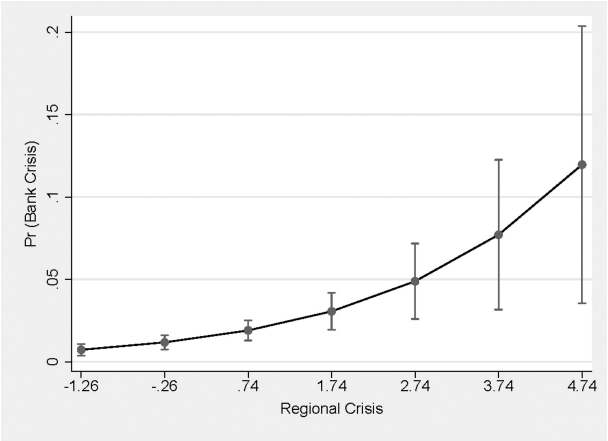

Figure 11. Effect of regional crises on predicted probability of crisis with 95 percent confidence intervals

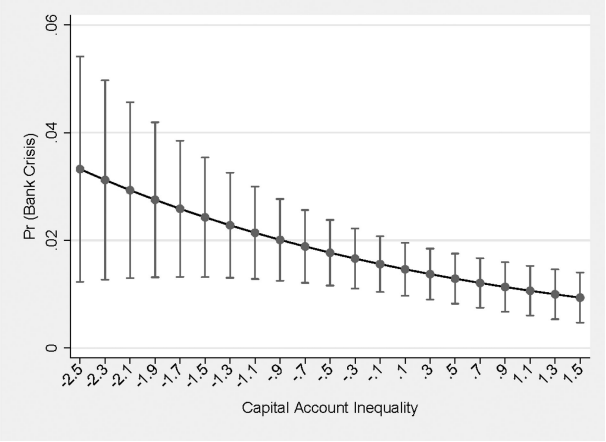

Figure 10. Effect of capital account inequality on predicted probability of crisis with 95 percent confidence intervals

regional effect is consistent with what we observe in practice: investors often focus on multiple countries within a given region rather than distributing capital evenly across the world. After the oil shocks of the seventies, for example, lenders focused on Latin America. In the 1990s, markets exhibited enthusiasm for East Asia, and between 2004 and 2008, markets channeled funds to the smaller European Monetary Union economies.

Note that these probability curves indicate that the precision of the estimated impact of distribution of K flows increases as the probability of a capital inflow bonanza decreases (this is also the case for economic development, as Figure 9 shows). This may indicate that, while capital inflow bonanzas are more likely when the United States borrows less, whether and how often they occur is much more idiosyncratic and therefore difficult to model with precision. In other words, we are more certain that the frequency of bonanzas falls when the United States borrows heavily than we are that the frequency of bonanzas increases when the United States borrows less. Of course, it might also be the case that, because bonanzas are rare events, we have too few observations to populate the high probability portion of the underlying distribution.

The predicted probability curves for banking crises provide a similar picture. Figure 10 shows the effect of the distribution of K flows on the probability that a country experiences a banking crisis. When net capital flows are concentrated on the United States, the probability of banking crisis decreases. As crises are rare events—the predicted probability of a crisis when all variables are set at their mean is 1.5 percent—small changes in the overall probability of crisis can be substantively meaningful. A one standard deviation increase above the mean value of the distribution of K flows is associated with a decrease in the probability of crisis to 1.1 percent, a 27.4 percent reduction. Conversely, a one standard deviation decrease of the distribution of K flows from its mean value is associated with an increase in the predicted probability of crisis to 2.07 percent, equivalent to about a 40 percent increase in the chance of crisis. For countries that experienced a bonanza in the previous year, the predicted probability of crisis holding all other variables at their means when (1) capital account inequality is at the mean, (2) one standard deviation below the mean, or (3) one standard deviation above the mean is 3.62 percent, 4.94 percent, and 2.65 percent, respectively. We can see this dynamic in the late 1990s and first half of the 2000s. In the wake of the 1997 Asian crisis, net capital flows concentrated heavily on the United States, first in the tech boom between 1998 and 2000 and then in the housing bubble from 2001 through 2005. And in this period, the number of systemic banking crises worldwide fell to its lowest level in thirty years. And as net flows became less concentrated on the United States after 2005, the number of banking crises rose sharply. The same cycle is evident following the Latin American debt crisis. The global frequency of banking crises fell sharply between 1983 and 1987 as global capital flows became increasingly concentrated in the United States and then increased steadily in the early 1990s as flows became more evenly distributed across emerging markets borrowers.

As with bonanzas, the occurrence of banking crises elsewhere in the region is closely associated with an increased probability of a banking crisis at home. Figure 11 illustrates this effect. The variable called regional crisis is standardized, so the majority of observations fall between –1 and 1. At (1) one standard deviation below the mean, (2) at the mean, and (3) above the mean, regional crises are respectively associated with a 0.82 percent, 1.34 percent, and 2.15 percent predicted probability of crisis. Local variables have less impact on the probability of crisis. Economic growth is statistically significantly related to crisis, and probability plots in Figure 12 illustrate that estimated effects are much more precisely estimated at high levels of growth—and low probability of crisis—than at low or negative levels of growth.

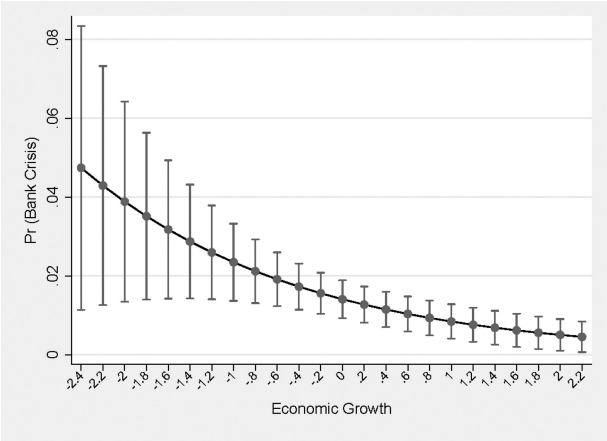

Figure 12. Effect of economic growth on predicted probability of crisis with 95 percent confidence intervals

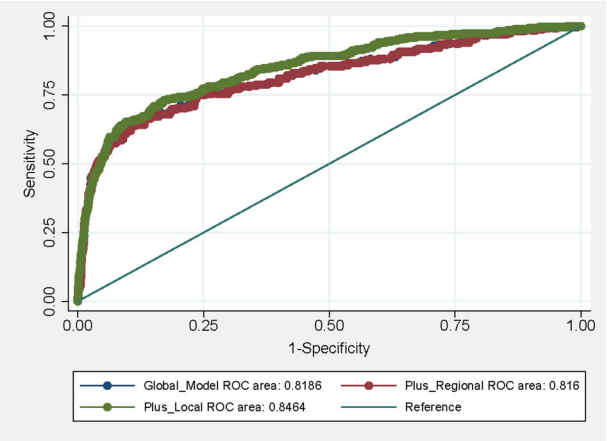

Figure 13. Receiver operating characteristic (ROC) curves of Pr(Bonanza) models

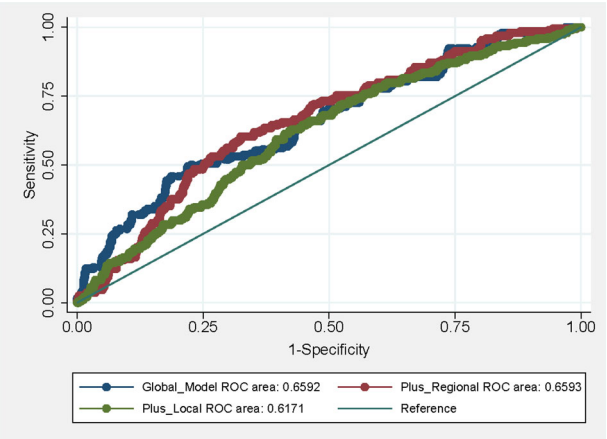

Figure 14. Receiver operating characteristic (ROC) curves of Pr(Crisis) model

Relative Importance of Global, Regional, and Local Variables

The empirical analysis indicates that American financial power has a statistically significant and substantively important effect on the global frequency of capital inflow bonanzas and banking crises. Capital inflow bonanzas and banking crises are much less common globally when the United States borrows heavily, and they become much more likely during periods of American adjustment. Moreover, in periods of US retrenchment, bonanzas and crises cluster within (and perhaps transmit through) regional neighborhoods. In contrast, surprisingly few country-level attributes appear influential and some of those that do are surprising; countries with open capital accounts are less likely to experience a banking crisis, while capital controls have no consistent impact on the likelihood of a bonanza. Economic growth is negatively associated with crises, but is not statistically associated with periods of capital bonanzas. Surprisingly, the size of the banking sector relative to the real economy is not a good predictor of either a bonanza or crisis. Democracies are no less likely to experience destabilizing flows than are autocratic countries. Perhaps most interesting, particularly given the focus on austerity and public sector debt reduction in the wake of the 2007–2009 global financial crisis (Blyth 2013), public debt has no statistically significant effect on the probability of capital bonanzas or banking crises.

These results are notable in their own right, but we are also interested in the relative importance of global, regional, and local variables in predicting capital inflow bonanzas and banking crises. We employ comparative receiver operating characteristic (ROC) curves to evaluate the influence of each class of variables. ROC curves assess the accuracy of prediction in binary outcomes by plotting the true positive rate (sensitivity) against the false positive rate (1 – specificity). When a model predicts outcomes perfectly, the curve will trace the left hand and upper sides of the graph. When models fit the data poorly, the curve dips toward the forty-five-degree angle reference line.

To begin, we compare the fit of a model that contains only systemic variables with models that also include regional and local attributes (Figure 13). Models that include regional attributes perform poorly, as measured by the area under the curve, as there is actually a worse fit to the data over the baseline global models. Models that also include local variables perform slightly better than models that include only global variables, but the difference is small—about 3 percent of the area under the curve. In other words, including local variables yields only a minor improvement in model fit; the most important variables by this criterion are the systemic variables. The relative importance of global factors is even more evident in the banking crisis models (Figure 14). Overall, these models do not fit as well as the bonanza models, but our global estimations fit much better than models that include local factors. Models that include regional variables perform the same as models that include only global factors.

ROC curves thus reinforce the central message of the multivariate analysis. Global systemic factors have substantially greater influence in the generation of capital inflow bonanzas and banking crises than is commonly appreciated. Moreover, local factors, including macroeconomic conditions, policy settings, and domestic political institutions exert much less influence over local financial outcomes than is commonly supposed. This suggests that, although individual peripheral crises rarely have systemic consequences, they typically have systemic causes.

Push Versus Pull Factors

What drives variation in the US share of net capital flows? Capital flows to the United States could be the consequence of a "push" by global capital markets. Crises in emerging

Table 3. Determinants of the US current account balance

	Model 13
US budget deficit	**−0.003**
	(0.001)
US military spending	**−0.021**
	(0.006)
US federal funds rate	**0.002**
	(0.001)
Global banking crises	−0.000
	(0.000)
Global market volatility	−0.000
	(0.000)
R^2	0.58
F-statistic	4.14

Notes: (1) Standard errors in parentheses. (2) Bolded coefficients represent estimates where zero is outside of the 95 percent confidence interval.

markets induce flights to safety, increase the demand for dollar-denominated assets, and thus increase US capital imports. The net inflows that helped fuel the American tech bubble of the late 1990s, for instance, might have originated in capital flight from East Asian markets in 1997. In addition, many governments have responded to emerging market financial crises (and the resulting IMF programs) by stockpiling dollar-denominated assets as insurance (Bernanke 2005; Bernanke, Bertaut, Demarco and Kamin 2011). China and other governments pursued this strategy after 1997 and, in so doing, may have contributed to the American real estate bubble (Obstfeld and Rogoff 2009, 3).[12] And because the United States absorbed such a large share of net flows in these years, there were practically no financial crises between 2000 and 2007. So, the oscillating cycle could be caused by market responses to developments in the periphery, precisely the opposite of what we argue here.

The time series analysis reported in Table 3 provides some basic evidence of the relative importance of push and pull factors in American net capital imports from 1986 to 2007.[13] The dependent variable is the first difference in the US current account, measured as a share of US GDP. The explanatory variables capture the domestic fiscal and monetary policy shocks as well as the global financial shocks likely to influence American capital imports. We measure the domestic fiscal and monetary policy shocks using the first difference of the *federal budget deficit*, the *federal funds rate*, and *military spending*. We capture global financial shocks with the CBOE S&P 100 Volatility Index (VXO) of *global market volatility* and a count of the number of banking crises occurring in the world that year. The model indicates that increased military spending and an expansionary monetary policy worsens the US current account balance.[14] In contrast, neither global market volatility nor banking crises have a systematic relationship with the size of the American external imbalance. Pull factors thus seem more important than global push factors in determining the US share of net flows.

Of course, it may also be that *world interest rates* and gross levels of *total global imbalances* drive bonanzas and crises. One often reads that the global savings glut and persistent low interest rate environments combine to generate large pools of unfettered capital that generates volatility and leads to crisis. This explanation suggests the global stock of capital is determined by global supply-side factors rather than US demand-side factors. Our ability to cleanly identify world interest rates, global imbalances, and the inequality of imbalances as orthogonal series is limited. However, in Appendix C we adjudicate between these claims by estimating models that include measures of world interest rates—which we define as a yearly average of US, European, and Japanese policy interest rates—and of total global imbalances—which we compile from IMF balance of payment statistics. In general, we find the sign and statistical significance of the distribution of K flows in the bonanza and crisis models robust to the inclusion of both world interest rates and total global imbalances. We find no support for the contention that total global imbalances drive abnormal capital events. There is some evidence that world interest rates are related to the occurrence of capital bonanzas, but this evidence is mixed, and there is no evidence that world interest rates drive banking crises. The distribution of K flows is a consistent predictor of these patterns.

We are thus reasonably confident that pull factors—especially changes in the US demand for foreign capital that originate in American policy—rather than push factors—changes in global conditions as manifested in peripheral crises, global market volatility, and global credit conditions—drive variation in American borrowing. In particular, variation in the American appetite for foreign capital appears to be driven by macroeconomic policy innovations; increased military spending and looser monetary policy increase American capital inflows. Financial developments in the periphery, therefore, are influenced by macroeconomic shocks in the core.

Conclusion

Capital inflow bonanzas—and the banking crises they often generate—emerge from the dynamic properties of a deeply interdependent and highly asymmetric global financial system. The United States stands at the center of the system as the largest and most connected financial system. This centrality confers substantial benefit to the American economy. The United States can borrow in large amounts for extended periods at low interest rates. And because the United States is so central, changes in the American demand for credit profoundly influence the global allocation of net cross-border capital flows. When US demand is high, the American economy attracts as much as two-thirds of net cross-border flows; when that American demand ebbs, capital flows to borrowers in economies in the periphery. The oscillating cycle that began in 2000 is the most recent example. The United States borrowed heavily from foreign savers, attracting 60 percent of total flows through 2006. As the US economy collapsed in 2008 and 2009, large volumes of

[12] Of course, a current account deficit must arise somewhere in the system to offset the surplus. If the reserve currency country refuses to issue new bonds, increased demand for these assets would raise the price of existing bonds in secondary markets. This would discourage stockpiling or encourage a search for alternative assets. Thus, net inflows depend upon new debt issues rather than purely secondary market transactions. Ultimately, therefore, the size of global imbalances is dependent on the public sector balance sheet in the reserve currency state.

[13] Global market volatility, measured by the Chicago Board Options Exchange S&P 100 Volatility Index, is the constraining variable here as it is not available until 1986.

[14] Controlling for monetary policy and military spending, a US budget deficit is associated with an improved current account balance. This negative relationship reflects the fact that, once we control for military spending—the source of the largest postwar changes in the budget deficit—remaining variation in the budget deficit reflects variation in revenue and expenditures across the business cycle (Oatley 2015, 62–68). The budget deficit widens and the current account deficit narrows as the economy moves into recession.

global capital flowed to emerging market borrowers, which inflated their asset markets and left them at risk of future crises.

The cycle generated by variation in the US demand for global savings drives the global frequency of capital inflow bonanzas and banking crises. In periods of high US borrowing, the number of emerging market economies that experience capital inflow bonanzas and banking crises falls sharply. When American borrowing falls, the reallocation of capital flows to borrowers in emerging economies causes an increase in the number of countries that experience capital inflow bonanzas and, with a lag, banking crises. Moreover, our statistical models indicate that variation in US borrowing is the best predictor of the likelihood that an emerging economy will experience a capital inflow bonanza and banking crisis even once we control for the domestic economic and political characteristics typically invoked as causes of crises.

Our analysis should encourage us to move away from a conception of interdependence in which the national economy remains the principal unit of analysis while connections among economies remain a secondary and often neglected consideration. In its place, we suggest a conceptualization in which the (global financial) system is the unit of analysis. To be clear, we do not advocate a return to system-level analysis or to grand theories, nor do we wish to exclude or discount the importance of local characteristics and conditions. Instead, we view the relative causal significance of global and local factors as a question that we must answer empirically rather than one we can resolve by assumption (Oatley 2011; Winecoff 2017b). We also believe that the relative significance of local and global factors is likely to vary across issue areas and system structures. Our interest is in exploring the empirical characteristics of the complex interaction between global and local processes as the global financial system moves through time.

Second, the patterns we report suggest the need to reevaluate whether financial instability in emerging economies is a primarily local event. Indeed, perhaps the most surprising of our results concerns the absence of evidence that specific local institutional and economic characteristics have a systematic relationship to the probability of an economy experiencing a capital inflow bonanza or banking crisis. The implication, however tentatively we might wish to embrace it at this stage in our research, is that global factors are the systematic component of the variation in the global frequency of crises while the effects of local factors are much more idiosyncratic and case specific. By *idiosyncratic* we do not mean random; we mean that bonanzas and crises emerge through many paths. In most circumstances, they are a product of unique configurations of local institutions and political processes, and the number of configurations is so large that efforts to identify "typical" configurations flounder due to the paucity of observations. As a result, perhaps the best we can do is forecast the probability of crises somewhere in the periphery as a function of changes in borrowing at the center.

Our work offers a reminder that emerging economies possess substantially less independence than open economy approaches derived from the Mundell-Fleming framework would suggest (Rey 2015). Over the last twenty-five years, research on developing countries has greatly downplayed the importance of systemic processes. The East Asian miracle led to a general dissatisfaction with approaches that sought to explain the lack of development by reference to the periphery's location in the global division of labor. Though we see compelling reasons to emphasize the importance of local institutions and other factors, we ought not commit the converse error of placing exclusive explanatory emphasis on domestic political economy, particularly since the past quarter century reveals that development is possible under quite diverse institutional environments. We believe the field needs richer theories and methods that enable us to explore the rather complex interactions between global and local forces.

Having pointed to these implications, we recognize, of course, that the argument and results we have presented remain incomplete. We see several areas that would benefit from further attention. First, we might reduce the uncertainty surrounding the specific countries that experience bonanzas and banking crises with better measures of the domestic variables we have controlled for here, or through the introduction of other potentially relevant domestic characteristics that we did not consider. Of course, the challenge in moving down this path is to establish a theoretical rationale for the inclusion of additional variables rather than simply estimate models that contain every conceivable domestic attribute. Second, scholars should explore the factors that generate variation in US borrowing. In particular, we wonder about the relative importance of changes in US fiscal and monetary policy, on the one hand, and changes in market perceptions of private sector returns—such as the perceived productivity shock that triggered the tech boom of the late 1990s—on the other.

Finally, our analysis suggests future work should do more to unpack the intricacies of regional dynamics. As the modeling exercise above demonstrates, regional experiences with capital flow cycles influence local bonanzas and crises. Our theoretical framework provides intriguing insight into the conditions that may influence regional patterns of abnormal capital flows. For instance, to what extent do regional imbalances, rather than just spatial adjacency, drive localized crisis dynamics? Here, we may consider whether Germany plays the role of regional financial hegemon within the eurozone, driving capital account imbalances among European countries and thereby setting conditions conducive for stability and crisis. Anecdotally, this logic fits well with recent European financial fragilities as Germany has run large current account surpluses while other European economies experienced, first, large inflows of investment and, then, major debt and banking crises. To a lesser degree, we may consider whether Japan played a similar role in East Asia in the late 1990s. But, significantly, these creditor countries play the opposite role within their subnetwork communities that the United States has played as a global borrower, at least in recent decades.

Of course, financial fragilities driven by more localized network dynamics require three conditions: strongly connected regional financial networks, inequality within these networks, and regional biases in recycling of current account surpluses. These conditions may hold in Europe—Figure 2 shows relatively strongly connected investment networks in that region—but not in all regions. Latin America is conspicuous for its lack of a regionally dominant financial hub (other than the United States). Does this mean crises are less driven by regional dynamics in Latin America and more closely track developments in the United States, while regional developments are more important in Europe? Similarly, African financial systems are weakly connected to each other and more strongly connected to the global core. And, despite China's economic rise, it remains on the periphery of financial networks in Asia. Two central questions that emerge from this line of inquiry include the following: (1) can stronger regional networks protect countries from the vagaries of global dynamics? and (2) does regionalism create

more pathways through which destabilizing capital account inequalities can emerge, accrue, and erupt? We leave these questions to future work.

Finally, we believe that scholars should examine the extent to which the system of international relations is interdependent and hierarchically organized across many domains outside of finance. It is likely that the United States' structural prominence is related to its structural prominence in security, trade, and other domains. Prominence in one domain may reinforce prominence in other domains, and the constellation of interdependence comprises a single global system. Paradigmatic changes to the system of international relations now appear to be much more likely than many expected even a short time ago. To understand the causes and consequences of stability and change, scholars must once again analyze world politics and economics as the holistic system that it is.

Supplementary Information

Supplementary information may be found at http://www.sarahbauerledanzman.com/replication-materials.html and at the *International Studies Quarterly* data archive.

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