Capital Mobility and Financial Stability in the United States, 1945-1970:

A Touchstone for the Current Debate

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Introduction

This paper will explore the period of 1945-1970 in the United States, notable for its lack of severe, systemic financial crises (Reinhart & Rogoff, 2009). As an explanation for this lull, it describes how capital controls (Neely, 1999) and the related phenomenon of financial repression (Reinhart, Kirkegaard & Sbrancia, 2011) were instituted during this period, internationally through the Bretton Woods system and domestically through regulation (Eichengreen, 2008; Wieher, 1992). The merits of repression are a question both open and current, as advanced economies reconsider their approach to financial system regulation in the wake of the 2008 crisis (Aizenman & Pinto, 2013; Gallagher, 2011; Reinhart, 2012). Thus, this paper concludes with an abbreviated review of the debate for and against financial repression as one form of macroprudential policy (DeLong, 2004; Eichengreen & Leblang, 2003; Fry, 1997; Huang & Wang, 2011; IMF, 2012; Klein, 2012; Stiglitz, 2000).

Financial in/stability

Instability is a perennial feature of the financial system. In their thorough study covering eight centuries and sixty-six countries, Reinhart and Rogoff (2009) take pains to point out that crisis in the financial system is *common* — not judging from the vantage point of a single lifetime, but certainly when surveying the whole extent of economic history available to us. These frequent crises come in many forms (see Table 1), and they are, in two words, “unpredictable and damaging” (Reinhart & Rogoff, 2009, p. xxxix). The essential fragility and instability of the financial system comes from rapid surges and retreats of confidence, playing out over a landscape of overextended credit and debts with different maturities. Changes in moods or in actual conditions can lead rapidly to self-reinforcing, overwhelmingly vicious cycles, as investors withdraw money and institutions holding less liquid assets (like banks) cannot meet short-term demand, so fail (Reinhart & Rogoff, 2009; Borio, 2003).

What seems fragility to players inside the system seems like ferocity to those outside it, given the ability of financial crises to spill over and cause damage to ordinary life so suddenly, out of the blue. Crises that arise in the financial system have effects on the real economy, not only on players in financial markets (Woodford, 2010; Hall, 2010). They are felt keenly by small businesses and consumers, especially through the "bank credit channel" as they can no longer obtain credit to finance their basic activities (Reinhart & Rogoff, 2009, p. 146). Employment and output may decline, and government finances suffer from reduced revenues — and suffer further, if the nature of the crisis requires a bailout for the banking sector (Reinhart & Rogoff, 2009).

Crisis type	Definition	Period	Maximum (percent)
Inflation	An annual inflation rate of 20 percent or higher. We examine separately the incidence of more extreme cases in which inflation exceeds 40 percent per annum.	1500-1790 1800-1913 1914-2008	173.1 159.6 9.63E+26[a]
Currency crash	An annual depreciation versus the U.S. dollar (or the relevant anchor currency — historically the U.K. pound, the French franc, or the German DM and presently the euro) of 15 percent or more.	1800-1913 1914-2008	257.7 3.37E+9
Currency debasement, type I	A reduction in the metallic content of coins in circulation of 5 percent or more.	1258-1799	-56.8 -55.0
Currency debasement, type II	A currency reform whereby a new currency replaces a much-depreciated earlier currency in circulation.	—	—
Banking crisis, type I: systemic (severe) Banking crisis, type II: financial distress (milder)	We mark a banking crisis by two types of events: (1) bank runs that lead to the closure, merging, or takeover by the public sector of one or more financial institutions and (2) if there are no runs, the closure, merging, takeover or large-scale government assistance of an important financial institution (or group of institutions) that marks the start of a string of similar outcomes for other institutions.	—	—

External debt crisis	A sovereign default is defined as the failure of a government to meet a principal or interest payment on the due date (or within the specified grace period). These episodes include instances in which rescheduled debt is ultimately extinguished in terms less favorable than the original obligation.	—	—
Domestic debt crisis	The definition given above for an external debt crisis applies. In addition, domestic debt crises have involved the freezing of bank deposits and/or forcible conversions of such deposits from dollars to local currency.	—	—

Table 1. Defining crises: quantitative thresholds and qualitative events

Source: Reinhart & Rogoff, 2009, pp. 7 & 11

Globally, the postwar period from 1945 to 1970 was a significant departure from the norm outlined above. Evident in Figure 1, this era was characterized by abnormal financial stability. The graph depicts Reinhart and Rogoff's (2009) BCDI index, a composite measure of financial crisis; the solid line indicates the BCDI index, while the dashed line adds a measure of stock market crisis. The index reflects the experience of eighteen rich countries (including the United States) from 1900 to 2005. A lull is clearly visible during the postwar period, in sharp contrast with the welter of financial instability pre-1945 and post-1970.

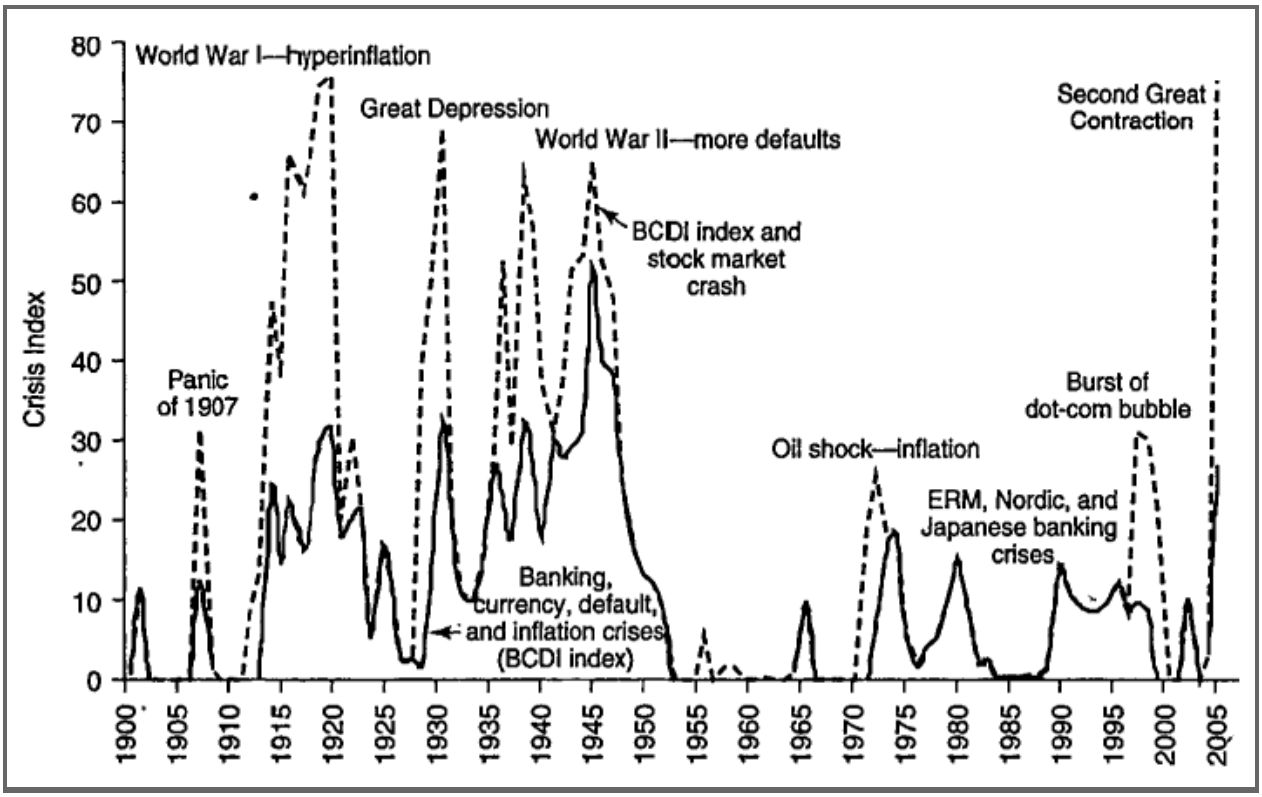

Fig. 1. Varieties of crises: Advanced economies aggregate, 1900-2008.

Source: Reinhart & Rogoff, 2009, p. 254.

Capital controls, financial repression, and macroprudential measures

This absence of crisis coincided with the 'post-war boom' — a state of general economic prosperity for the United States, with high rates of GDP growth in many other countries as well (Weiher, 1992). This coincidence is not a causal relationship. Rapid GDP growth came about for some countries when they experienced high returns on investment in the course of reviving their war-damaged infrastructure. Their preoccupation with rebuilding, moreover, gave American industry room to thrive without serious foreign competition. Instead, the straightforward explanation for this period of financial calm is restrictions on international capital mobility. These restrictions are called capital controls, or (more specifically and debatably) financial repression.

Capital controls are measures to reduce, redirect, or change the composition of capital flows. They may apply to inflows or outflows of capital, which may be differentiated further as short- or long-term (i.e. foreign direct investment). Controls are classified in some schemes as market-based or administrative (Oliver, n.d.), in others as price or quantity controls (Neely, 1999). For either scheme, the distinction is similar: some capital controls try to introduce a disincentive for international finance by raising the price of certain actions. This includes taxes on certain transactions or investment returns, as well as high reserve requirements. Other capital controls try to limit directly the quantity of capital flows through outright quotas or prohibitions, enforced administratively by banks or regulatory bodies. As a final note, capital controls are similar to but not synonymous with exchange controls. Exchange controls apply to currency (a form of capital) but they are often used to control the type of goods imported, rather than the flow of capital. As well, capital flows can be controlled without the use of exchange controls — there are many policy options available (Neely, 1999).

Capital controls come in many forms, inspired by many different purposes (Table 2). One of these possible purposes is the reduction of government debt by controls on finance, first called ‘financial repression’ by McKinnon and Shaw in 1973. Reinhart, Kierkegaard and Sbrancia (2011) define the phenomenon on financial repression by cataloging nine examples of financially repressive policies (Box 1). A central element of Reinhart et al.’s definition is that financial repression is a deliberate official policy, motivated by governments’ desires to ease their budget concerns. Financial repression works towards this goal in two ways: (1) by making more or cheaper money available to the government as a borrower, and (2) by reducing the burden of interest or principal payments on existing debt. This reduced burden of debt comes about through the effect of repressive policies on the interest rate. When a government successfully pushes down the nominal interest rate, it pay less in debt service. This is the

simplest way in which repression reduces a government's debt burden. More significantly, though, when a government pushes the real interest rate below zero (i.e. when the nominal interest rate is pushed below the level of inflation), a "liquidation effect" occurs, lessening the real value of existing government debt (Reinhart & Sbrancia, 2011).

Purpose of control	Method	Direction of control	Example
Generate Revenue/ Finance War Effort	Controls on capital outflows permit a country to run on higher inflation with a given fixed-exchange rate and also hold down domestic interest rates.	Outflows	Most belligerents during WWI and WWII
Financial Repression/ Credit Allocation	Governments that use the financial system to reward favored industries or to raise revenue, may use capital controls to prevent capital from going abroad to seek higher returns.	Outflows	Common in developing countries
Correct a Balance of Payments Deficit	Controls on outflows reduce demand for foreign assets without contractionary monetary policy or devaluation. This allows for a higher rate of inflation than would otherwise be possible.	Outflows	U.S. interest equalization tax, 1963-74
Correct a Balance of Payments Surplus	Controls on inflows reduce demand for domestic assets without expansionary monetary policy or revaluation. This allows for a lower rate of inflation than would otherwise be possible.	Inflows	German Bardepot scheme, 1972-74
Prevent Potentially Volatile Inflows	Restricting inflows enhances macroeconomic stability by reducing the pool of capital flows that can leave a country during a crisis.	Inflows	Chilean *encaje*, 1991-98
Prevent Financial Destabilization	Capital controls can restrict or change the composition of international flows that can exacerbate distorted incentives in the domestic financial system.	Inflows	Chilean *encaje*, 1991-98
Prevent Real Appreciation	Restricting inflows prevents the necessity of monetary expansion and greater domestic inflation that would cause a real appreciation of the currency.	Inflows	Chilean *encaje*, 1991-98

Restrict Foreign Ownership of Domestic Assets	Foreign ownership of certain domestic assets — especially natural resources — can generate resentment.	Inflows	Article 27 of the Mexican constitution
Preserve Savings for Domestic Use	The benefits of investing in the domestic economy may not fully accrue to savers to the economy, as a whole, can be made better off by restricting the outflow of capital.	Outflows	—
Protect Domestic Financial Firms	Controls that temporarily segregate domestic financial sectors from the rest of the world may permit domestic firms to attain economies of scale to compete in world markets.	Inflows and Outflows	—

Table 2. Purposes of capital controls. *Source*: Neely, 1999, p. 16.

Financial repression occurs when governments implement policies to channel to themselves funds that a deregulated market environment would go elsewhere. Policies include directed lending to the government by captive domestic audiences (such as pension funds or domestic banks), explicit or implicit caps on interest rates, regulation of cross-border capital movements, and (generally) a tighter connection between government and banks, either explicitly through public ownership of some of the banks or implicitly through heavy "moral suasion". Financial repression is also sometimes associated with relatively high reserve requirements (or liquidity requirements), securities transaction taxes, prohibition of gold purchases, or the placement of significant amounts of government debt that is nonmarketable.

Box 1. Features of financial repression. *Source*: Reinhart, Kirkegaard, & Sbrancia, 2011, p. 22.

Reinhart et al. (2011) suggest that governments choose to address budget concerns through financially repressive capital controls because they are relatively easy to secure politically. Austerity or higher taxation would be resented and resisted by different segments of the population; sovereign default or debt restructuring would damage the country's future access to credit; economic growth is not easily or quickly caused by government policies. Financial repression is a more attractive option, serving as a form of covert taxation that governments can pursue with little penalty since its complexity shields it from the scrutiny of the general public.

Another reason, though, can lie behind the deployment of capital controls. Reinhart et al. (2011) point to this when they say that "[g]overnments do not call these actions financial repression, of course, by characterize them as part of 'macroprudential regulation'" (23). It is possible to interpret this characterization as duplicitous or sincere. The real costs of financial crises do translate into a compelling reason for governments to try to anticipate problems and regulate finance in a proactive, collective fashion (see Table 3 for a description of this approach). Macroprudential regulation is not synonymous with capital controls (much like exchange controls), but there is substantial overlap (IMF, 2012).

	Macroprudential	**Microprudential**
Proximate objective	limit financial system-wide distress	limit distress of individual institutions
Ultimate objective	avoid output (GDP) costs	consumer (investor/depositor) protection
Model of risk	(in part) endogenous	exogenous
Correlations and common exposures across institutions	important	irrelevant
Calibration of prudential controls	in terms of system-wide distress; top-down	in terms of risks of individual institutions; bottom-up

Table 3. The macro- and microprudential perspectives compared. *Source*: Borio, 2003, p. 2.

Capital controls, 1945-1970

Consensus is that capital controls were in effect during the 1945-70 Bretton Woods period. Reinhart and Sbrancia (2011) go a step further, arguing that financial repression occurred in advanced economies during the postwar period, and that this repression was crucial to paying off government debt incurred from the war.

Controls on capital flows were generally favored following the war, since they had become destabilizing. Unlike the stabilizing flows that prevailed pre-World War I (described by David Hume's price-specie flow mechanism), investors reacted to new government goals of full employment and domestic stability by withdrawing their investments rapidly, waging 'speculative attacks' on currencies, and ensuring that the precise outcome they feared (devaluation) would come about (Eichengreen, 2008). If capital flows were now experienced as destructive, the obvious course of action was to restrict them. Keynes in particular was a strong proponent of capital flows, asserting that "control of capital movements, both inward and outward, should be a permanent feature of the post-war system" (Gallagher, 2011, p. 3).

This sentiment informed the Articles of Agreement drawn up by national delegates at Bretton Woods, defining the parameters of the new international monetary system. The Articles do not mandate the control of capital flows, nor specify *how* member countries should control them. But they do clearly indicate support for this practice, when motivated by concern for domestic stability (rather than desire to defraud international trade partners):

> Members may exercise such controls as are necessary to regulate international capital movements, but no member may exercise these controls in a manner which will restrict payments for current transactions or which will unduly delay transfers of funds in

> settlement of commitments, except as provided in Article VII, Section 3(*b*) and in Article XIV, Section 2. (Avalon Project, n.d.).

Additionally specified by the Articles is an international arrangement of pegged exchange rates with buffers, overseen by the overseen by the International Monetary Fund (IMF) and the International Bank for Reconstruction and Development (later the World Bank). The purpose of these two institutions was to facilitate the international cooperation so vital for the effective functioning of the system. Eichengreen (2008) explains how all these parts came together to reinforce each other on an international scale, taming capital flows that would otherwise be very hard for a single country to effectively repress:

> Observers today, their impressions colored by the highly articulated financial markets of the late-twentieth century, are skeptical of the enforcement of such [capital control] measures. But circumstances were different in the quarter-century after World War II. This was a period when governments intervened extensively in their economies and financial systems. Interest rates were capped. The assets in which banks could invest were restricted. Governments regulated financial markets to channel credit toward strategic sectors. The need to obtain import licenses complicated efforts to channel capital transactions through the current account. Controls head back the flood because they were not just one rock in a swiftly flowing stream. They were part of the series of levees and locks with which the raging rapids were tamed (Eichengreen, 2008, 92).

The United States, for its part, tolerated the widespread existence of capital controls that other advanced countries had put into place to assist their recovery from the war (Gallagher, 1999).

Reinhart and Sbrancia (2011) argue that the extent of these international controls amounted to financial repression in most advanced countries after the war: "Capital account restrictions and exchange controls orchestrated a 'forced home bias' in the portfolio of financial institutions and individuals under the Bretton Woods arrangements" (p. 6), which meant that more funds were available for governments to borrow for the payment of their war debts and the funding of their reconstruction efforts. Within the United States, financial repression took the form of Regulation Q, an interest rate ceiling on bank deposits that enforced a preference for government bonds (Reinhart Reinhart & Sbrancia, 2011).

Besides identifying a few of the policies that were in effect, Reinhart and Sbrancia (2011) support their thesis by measuring the effects of these policies on government debt. They construct portfolios representing each government's debts, then calculate nominal and real interest rates for each debt instrument in the portfolios. For each year where the real interest rate falls below the nominal, savings due to the liquidation effect were computed. The US government experienced large amounts of debt liquidation in this way (Figure 2), since real interest rates were often negative (Figure 3).

Table 7. Debt Liquidation through Financial Repression: Selected Countries, 1945-1955

Country	Public debt/GDP			Annual average: 1946-1955	
	1945	1955 (actual)	1955 without repression savings (est.)[4]	"financial repression revenue"/GDP	inflation
Australia	143.8	66.3	199.8	6.2	3.8
Belgium[1]	112.6	63.3	132.2	4.6	8.7
Italy[2]	66.9	38.1	81.9	3.7	10.8
Sweden	52.0	29.6	59.1	1.8	5.0
United Kingdom[3]	215.6	138.2	246.9	4.5	5.9
United States	116.0	66.2	141.4	6.3	4.2

Fig. 2. Debt liquidation through financial repression: Selected countries, 1945-1955.

Source: Reinhart & Sbrancia, 2011, p. 40.

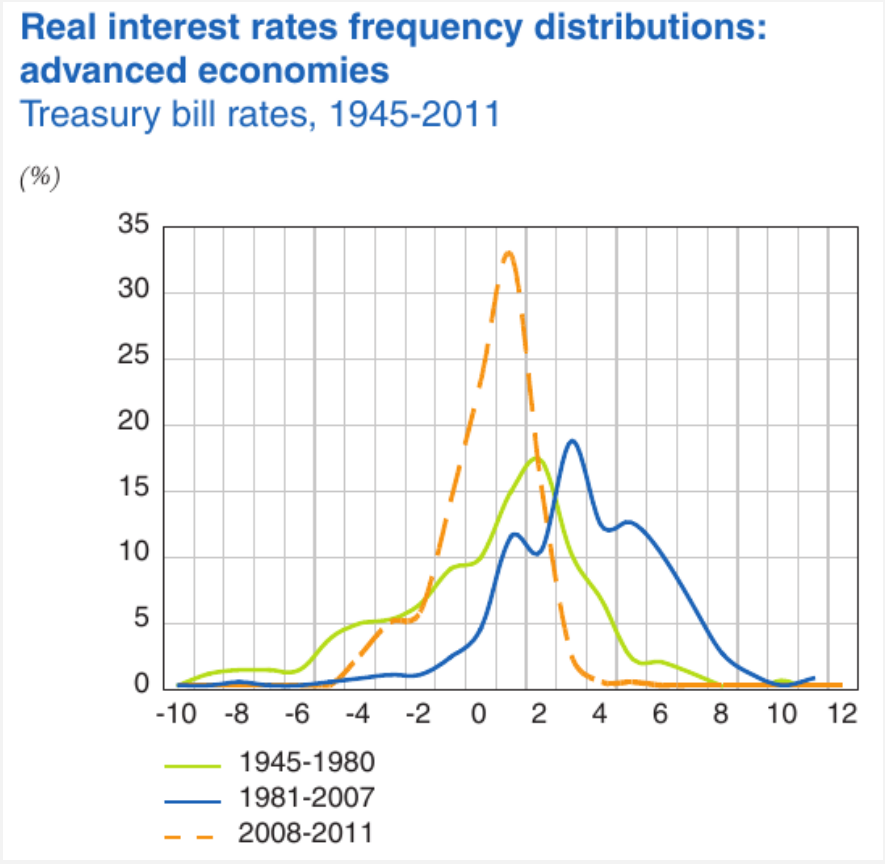

Fig. 3. Real interest rate frequency distributions: advanced economies, Treasury bill rates, 1945-2011. *Source:* Reinhart, 2012, p. 41.

But there are objections to the Reinhart and Sbrancia interpretation. For one, Wieher (1992) argues that the Fed fought in the early 1950s for increased independence from the U.S. Treasury, specifically so that it could raise interest rates above the 2.5% ceiling that had been set to keep the government debt burden light. Maintaining the low interest rate ceiling had contributed to inflation, and so the Fed sought and gained more independence in order to push inflation back down by raising interest rates. This story conflicts with two of Reinhart et al.'s (2011) criteria for financial repression —

that it entails, first, a tight relationship between the government and central bank, and that, second, the product of this relationship is monetary policies assiduously seeking low interest rates.

A second objection is that the high proportion of negative real interest rates observed during this era (Figure 2) do not obviously have as their cause a deliberate government policy to reduce its own debt burden. In other words, low real interest rates alone are not proof of repression; deliberate policy action must be observable. For rapid inflation in the 1960-80s (making real interest rates negative), Weiher (1992) gives more credit to ignorance than intention. By his account, the Fed didn't fully understand the distinction between nominal and real interest rates when it came to judging the tightness or looseness of monetary policy. As a result, its zealous pursuit of low unemployment through would-be expansionary policy eventually changed people's expectations about long-term inflation, leading to widespread stagnation. It is the motive here (low unemployment) that calls into question Reinhart and Sbrancia's diagnosis of financial repression. Assessing this motive requires research that directly focuses on the rationales of policy makers — not just observance of negative real interest traits.

Effects, costs, and benefits of capital controls

Figure 4 describes capital *mobility* from 1950 to 2008, showing substantial variation between different measures of mobility used in the literature. Nonetheless, the general trend is consistent: capital mobility was low in the mid-20th century, and (by a few measures) has nearly doubled in the fifty years following. Beyond this, Figure 5 shows the correlation between degree of capital mobility and incidence of global banking *crises*, over the longer period from 1800 to 2010. Capital mobility drops rather steeply from 1930 to 1940, reflecting capital controls put in place by governments to assist in financing their war efforts (Neely, 1999). Thereafter capital mobility climbs slowly, then briskly from 1980 to

2000. Incidence of banking crisis moves in a roughly similar fashion. Reinhart sums up this relationship with her comment that "[s]ystemic financial crises during 1945-1980, when capital mobility was limited, were virtually nonexistent worldwide" (2012, p. 47). This correspondence squares with theoretical and empirical work by Stiglitz (2000), Grabel (2003), and Demirgüç-Kunt and Detragiache (2005), crediting capital controls with the capacity to reduce the occurrence of financial crises.

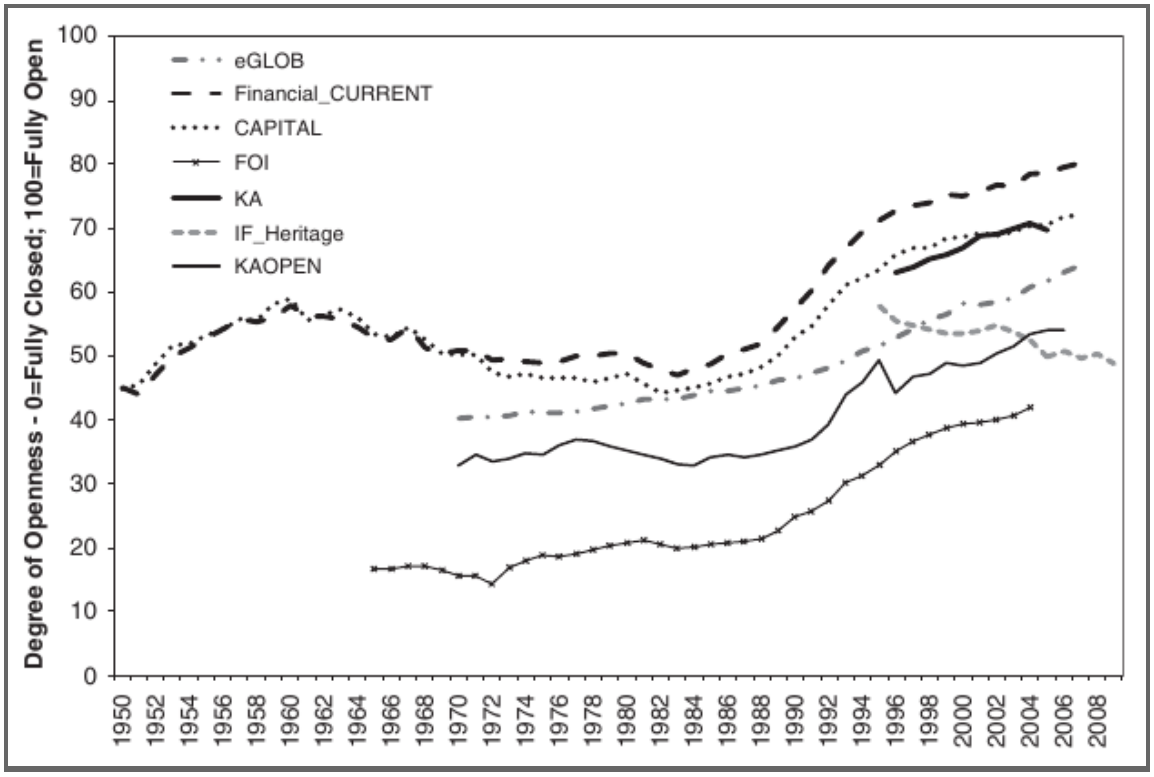

Fig. 4. Global averages of capital account and current account indicators.

Source: Quinn, Schindler, and Toyoda, 2011, p. 500.

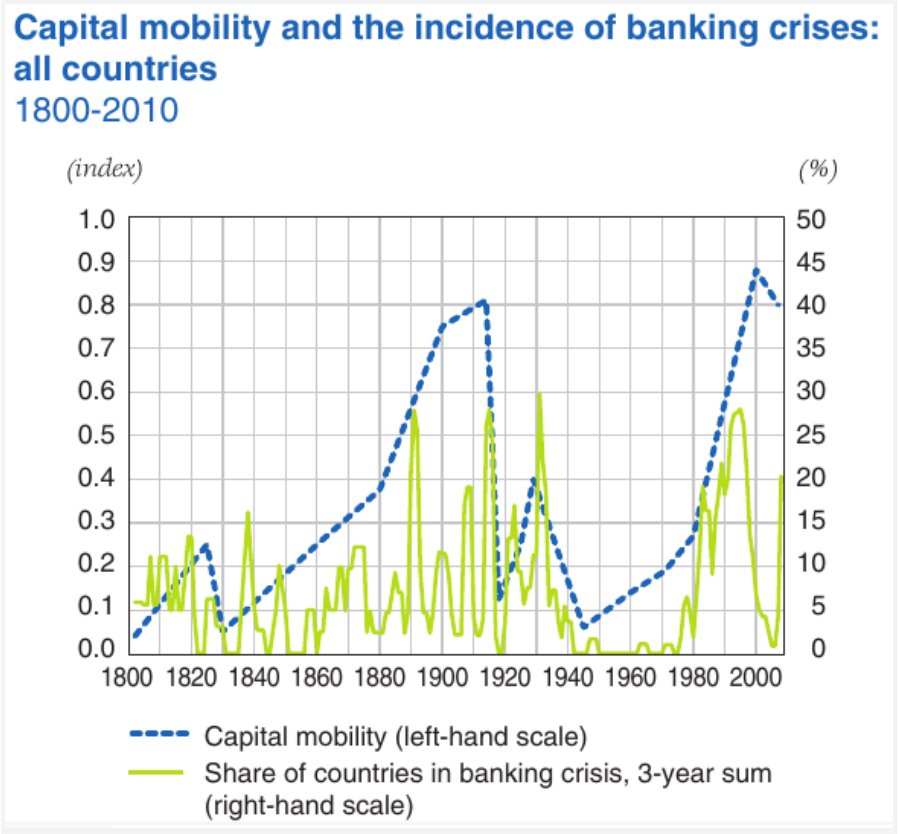

Fig. 5. Capital mobility and the incidence of banking crises: all countries, 1800-2010. *Source:* Reinhart, 2012, p. 47.

Of course this does not means that financial crises simply vanish as financial mobility is curtailed. In fact, Bordo, Eichengreen, Klingbiel and Martinez-Peria (2001) find that capital controls make *currency* crises more likely, though they reduce the risk of *banking* crises. When there are capital controls in place, investors suspect that governments will deprioritize defense of the exchange rate, making them uneasy and more likely to wage a speculative attack on a currency. It is clear that the presence of capital controls is not a cure-all, and that their benefits and costs are exceedingly difficult to weigh. Nonetheless, reduced risk of financial crisis is a serious merit of capital controls.

As for costs, in theory they are the loss of potential benefits from financial liberalization. Free capital flows are thought, first, to improve growth, development, and productivity by supplying investment, sharing knowledge, and spreading technology; second, to maximize welfare and spread out the brunt of a catastrophe by providing differently-situation countries with a chance to engage in intertemporal trade; third, to improve financial stability by introducing more diversification into global financial portfolios; and, finally, to uproot government corruption that sprouts and thrives in the shade of capital controls (Neely, 1999; DeLong, 2004).

Opposing this litany of benefits is a chorus of criticisms. Stiglitz (2000) argues that to the extent financial liberalization promotes instability and crisis, it *detracts* from economic growth. He cites research on the nature of recovery from crisis — that it is terribly slow, and perhaps never complete. DeLong (2004) retreated from his earlier endorsement of financial liberalization upon finding that growth did not manifest; systemic vulnerability increased; and inequality worsened, as capital flowed to places where it was already abundant, rather than to developing countries where it was needed.

Empirically, the case is no more clearly one-sided. (In fact, Gallagher [2011] credits empirical studies with reopening what seemed for many years like a finished debate, that had identified financial liberalization as clearly preferable to capital controls.) Studies find inconsistent associations between growth and financial liberalization or capital controls. Fry (1997) shows that financial repression hurts growth, and concludes that it must be replaced with managed liberalization. Levine (2005) and Trew (2006) conclude that liberalization contributes positively to growth, while Kose, Prasad, Rogoff and Wei (2009) do not. Huang and Wang (2011) determine that capital controls assisted growth in the early phases of China's development, though this impact diminished over time. Eichengreen and Leblang (2003) find contingent effects of liberalization on growth, depending mostly on the state of domestic

financial institutions.

In practice, finally, the efficacy of capital controls (whatever their merits) is variable and partial. Neely (1999) elaborates several avenues whereby evasion is possible — increasingly so, with improvements in information technology. Evasion of some capital controls can be accomplished through falsified invoices, or by "leads and lags" in import orders that amount to short-term credit. Innovative financial instruments are another method for circumventing regulations. When evasion is factored in, the "consensus of the research on capital controls has been that they can alter the composition of capital flows or drive a small, permanent wedge between domestic and offshore interest rates but they cannot indefinitely sustain inconsistent policies" (Neely, 1999, pp. 26-27). Eichengreen's (2008) earlier characterization of the postwar climate is useful to recall here: capital controls work best when they are broadly adopted and reinforced by complementary policies.

Current debate over capital controls and financial repression

Against this messy, undecided backdrop a trend is emerging. Following the East Asian and 2008 housing crises, there is a movement in both policy and academic circles to take more seriously the adverse effects international capital flows (Gallagher, 2011; Borio,2003). Unrestricted capital mobility is no longer the unqualified recommendation of, for one, the International Monetary Fund. The Fund now embraces capital controls as a permanent component of national prudential policy (Klein, 2012, p. 319; IMF, 2012). Many nations have made such controls part of their regulatory landscape (Gallagher, 2011). Economists have also begun to advocate financial liberalization regretfully (e.g. DeLong, 2004), in more nuanced or context-dependent terms, or not at all. In fact, noticing that control-sheltered developing countries weathered the 2008 crisis better than expected, Aizenman and Pinto (2013) have

suggested the uptake of their policies by rich countries.

In response to these trends of sentiment and policy Reinhart et al. (2011) have diagnosed the return of financial repression on a global scale. As evidence they cite central banks' massive government debt holdings; preferential treatment of government debt by the Basel III (voluntary) international banking accord; and historically low interest rates (negative real interest rates) in rich countries. Again, though, it is not clear that low real interest rates represent a central bank agenda to diminish the burden of government debt. Negative real interest rates could be the Fed aligning itself properly with the exceedingly low natural rate of a depressed financial market, in which investors expect little return and, moreover, there is a global savings glut (Economist, 2013).

At any rate, Reinhart et al. (2011, p. 23) describe a rare coincidence of desires where rich countries want to "keep capital in" (to fund government debt) and poor countries want to "keep capital out" (to protect themselves from destabilizing capital flows). This coincidence opens up new possibilities on an international scale: capital controls may be viable again, as they haven't truly been since the 1970s. Whether repression per se is occurring, it seems like macroprudential goals may again capture the interest and efforts of researchers and policymakers, leading to a replay of the stable postwar era.

References

Aizenman, J. & Pinto, B. (2013). Managing financial integration and capital mobility—policy lessons from the past two decades. *Review of International Economics, 21*(4), 636–653.

Avalon Project. (n.d.). *Articles of agreement of the International Bank for Reconstruction and Development, July 22, 1944.* Retrieved from http://avalon.law.yale.edu/20th_century/decad047.asp

Bordo, M., Eichengreen, B., Klingbiel, D., & Martinez-Peria, M. S. (2001). Is the crisis problem growing more severe? *Economic Policy, 32,* 53-75.

Borio, C. (2003). Towards a macro-prudential framework for financial supervision and regulation? *Bank for International Settlements Working Papers, 128*. Retrieved from http://www.bis.org/publ/work128.pdf

DeLong, J. B. (2004). Should we still support untrammelled international capital mobility? Or are capital controls less evil than we once believed? *The Economists' Voice, 1*(1).

Demirgüç-Kunt, A. & Detragiache, E. (2005). Cross-country empirical studies of systemic bank distress: A survey. *International Monetary Fund Working Paper*. Retrieved from http://www.imf.org/external/pubs/ft/wp/2005/wp0596.pdf

Economist. (2013, Oct. 26). A natural long-term rate. *The Economist.* Retrieved from http://www.economist.com/news/finance-and-economics/21588354-central-banks-ignore-century-old-observation-their-peril-natural

Eichengreen, B. (2008). *Globalizing capital: A history of the international financial system.* Princeton, NJ: Princeton University Press.

Eichengreen, B. & Leblang, D. (2003). Capital account liberalization and growth: Was Mr. Mahathir right? *International Journal of Financial Economics, 8*, 205–224.

Fry, M. J. (1997). In favor of financial liberalisation. *The Economic Journal*, *107*, 754-770.

Gallagher, K. P. (2011). Regaining control? Capital controls and the global financial crisis. *Political Economy Research Institute Working Paper Series, 250.*

Grabel, I. (2003). Averting crisis? Assessing measures to manage financial integration in emerging Economies. *Cambridge Journal of Economics, 27*(3), 317-336.

Hall, R. (2010). Why does the economy fall to pieces after a financial crisis? *Journal of Economic Perspectives, 24*(4), 3-20.

Huang, Y. & Wang, X. (2011). Does financial repression inhibit or facilitate economic growth? A case study of Chinese reform experience. *Oxford Bulletin of Economics and Statistics, 73*(6), 833-855.

International Monetary Fund (IMF). (2012). Executive summary: The liberalization and management of capital flows: An institutional view. *International Monetary Fund.* Retrieved from http://www.imf.org/external/np/pp/eng/2012/111412.pdf

Kaminsky, G. L. & Reinhart, C. M. (1999). The twin crises: The causes of banking and balance-of-payments problems. *The American Economic Review, 89*(3), 473-500.

Klein, M. W., Forbes, K. J., & Werning, I. (2012). Capital controls: Grates versus walls. *Brookings Papers on Economic Activity,* 317-367.

Kose, M. A., Prasad, E., Rogoff, K., & Wei, S. J. (2009). Financial globalization: A reappraisal. *International Monetary Fund Staff Papers, 56*, 8-62.

Levine, R. (2005). Finance and growth: Theory, mechanisms and evidence. In P. Aghion P. and S. N. (eds.), *Handbook of economic growth.* Amsterdam: North-Holland.

Neely, C. J. (1999). An introduction to capital controls. *Federal Reserve Bank of St. Louis Review,* 13- 30.

Oliver, J. (n.d.). What are capital controls? *Center for International Finance and Development, University of Iowa.* Retrieved from http://blogs.law.uiowa.edu/ebook/faqs/what-are-capital-controls

Quinn, D. P., Schindler, M., & Toyoda, A. M. (2011). Assessing measures of financial openness and integration. *IMF Economic Review, 59*(3), 488-582.

Reinhart, C. M. (2012). The return of financial repression. *Financial Stability Review, 16.* Banque de France.

Reinhart, C. M., Kirkegaard, J. F. & Sbrancia, M. B. (2011). Financial repression redux. *Finance & Development, 48*(1), 22-28.

Reinhart, C. M. & Rogoff, K. S. (2009). *This time is different: Eight centuries of financial folly.* Princeton, NJ: Princeton University Press.

Reinhart, C. M. & Sbrancia, M. B. (2011). The liquidation of government debt. *NBER Working Paper 16893.* Cambridge, MA: National Bureau of Economic Research.

Trew, A. W. (2006). Finance and growth: a critical survey. *The Economic Record, 82*, 481–490.

Wieher, K.E. (1992). *America's search for economic stability: Monetary and fiscal policy since 1913.* New York, NY: Twayne Publishers.

Woodford, M. (2010). Financial intermediation and macroeconomic crisis. *Journal of Economic Perspectives, 24*(4), 21-44.