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THE RETURN OF FINANCIAL REPRESSION

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ABSTRACT

The Return of Financial Repression*

Periods of high indebtedness have historically been associated with a rising incidence of default or restructuring of public and private debts. Sometimes the debt restructuring is more subtle and takes the form of 'financial repression'. Consistent negative real interest rates are equivalent to a tax on bond holders and, more generally, savers. In the heavily regulated financial markets of the Bretton Woods system, a variety of financial domestic and international restrictions facilitated a sharp and rapid reduction or 'liquidation' of public debt from the late 1940s to the 1970s. The restrictions or regulatory measures of that era had their origins in what would now come under the heading of 'macroprudential' concerns in the wake of the severe banking crises that swept many countries in the early 1930s. The surge in public debts that followed during the Great Depression and through World War II only made the case for stable and low interest rates and directed credit more compelling to policymakers. The resurgence of financial repression in the wake of the 2007-2009 financial crises alongside the surge in public debts in advanced economies is documented here. This process of financial 'de-globalization' may have only just begun.

JEL Classification: E2, E3, E6, F3, F4, H6 and N10
Keywords: capital controls, debt, financial repression, inflation, interest rates and regulation

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This paper raises the issue of how central banks are being pulled into "new" roles by the post-crisis environment and by virtue of the unavailability (or political viability) of alternative, potentially more suitable instruments or policies. The emphasis here is on two sets of issues: The consequences of high public and private debts in the advanced economies and the attendant pressures towards financial repression to ease the burden of debt servicing[2]; and the perceived dangers of currency misalignments and overvaluation in emerging markets, and the attendant pressures towards currency intervention and capital controls—connected to the broader issue of "macroprudential regulation" a part of the evolving trend toward greater financial repression.

The two sets of pressures on central banks, in the North and South, are complementary. While emerging markets may increasingly look to financial regulatory measures to keep international capital "out" (especially as the expansive monetary policy stance of the US and Europe persist well into the horizons), advanced economies have incentives to keep capital "in" and create a domestic captive audience to facilitate the financing for the high existing levels of public debt. Concerned about potential overheating, rising inflationary pressures and the related competitiveness issues, emerging market economies may welcome changes in the regulatory landscape that keep financial flows at home rather than let them spill across borders. This offers advanced and emerging market economies the common ground of agreeing to increased regulation and/or restrictions on international financial flows and, more broadly, the return to more tightly regulated domestic financial environment—often referred to as "financial repression."

[2] Financial repression is defined in Box 1; in essence it involves a tighter connection between government, banks and the central bank. In the current policy discussion, financial repression issues come under the broad umbrella of "macroprudential regulation."

The scenario sketched here entails both financial de-globalization (the re-appearance of home bias in finance) and the re-emergence of more heavily regulated domestic financial markets. As some of these trends are already unfolding in individual countries, it is a useful exercise to examine these developments as part of a broader global picture.

Box 1. Financial repression defined

Financial repression includes 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 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 (as in the US from 1933 to 1974), or the placement of significant amounts of government debt that is nonmarketable. A large presence of state-owned or state intervened banks is also common in financially "repressed" economies.

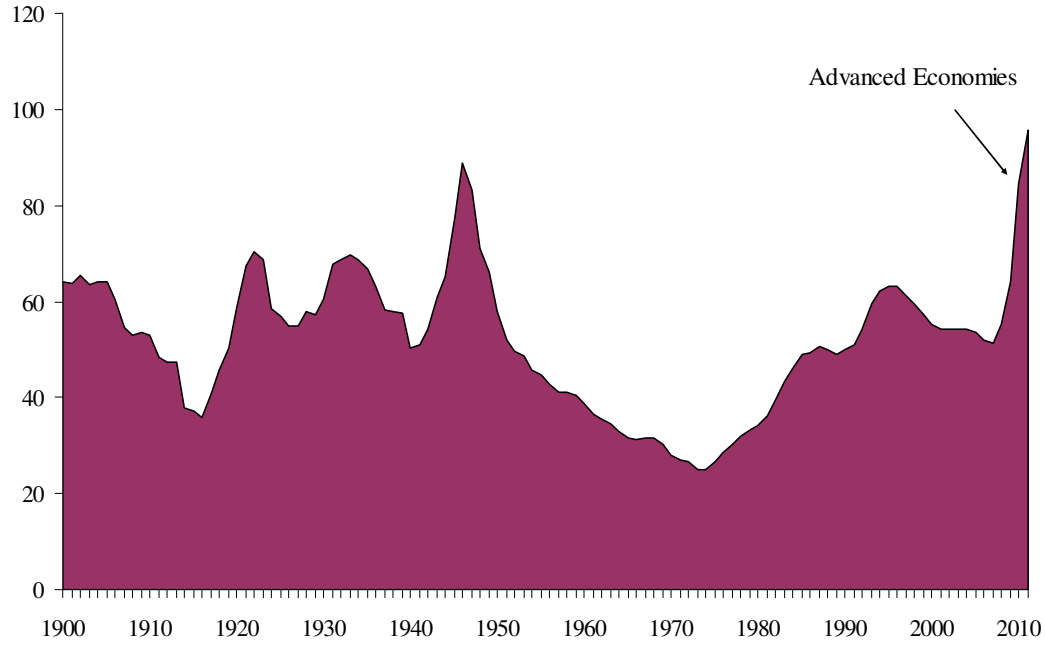
In the current policy discussion, financial repression issues come under the broad umbrella of "macroprudential regulation."

I. Advanced Economies: The Public and Private Debt Overhang

Elevated levels of public debt in the United States and elsewhere are likely to prove the most enduring legacy of the post-2007 financial crises. For the advanced economies, public debts had not approached these heights since the end of World War II.

Figure 1, which traces out the evolution of average gross public debt for the 22 advanced economies over 1900-2011 makes plain the magnitude of the policy challenge now facing many (if not most) of the advanced economies.[3] In effect, by limiting the figure to recorded public debt, Figure 1 significantly understates the magnitude of the debt surge in recent years. Record private debts, particularly those of banks remain a major possible contingent liability of governments.

Figure 1. Gross Central Government Debt as a Percent of GDP: 22 Advanced Economies, 1900-2011 (unweighted averages)



Sources: Reinhart and Rogoff (2010) and sources cited therein.

[3] The simple arithmetic average shown here does not weigh the public debt ratios by the size of the economy (or its share in the world aggregates) .

Throughout history, debt/GDP ratios have been reduced by (i) economic growth; (ii) a substantive fiscal adjustment/austerity plans; (iii) explicit default or restructuring of private and/or public debt; (iv) a sudden surprise burst in inflation; and (v) a steady dosage of financial repression that is accompanied by an equally steady dosage of inflation.[4] It is critical to clarify that options (iv) and (v) are only viable for domestic-currency debts (the euro area is a special hybrid case).

Since these debt-reduction channels are not necessarily mutually exclusive, historical episodes of debt reduction have owed to a combination of more than one of these channels. However, fiscal adjustment is usually painful in the short run and politically difficult to deliver. Debt restructuring leaves a troublesome stigma and is also often associated with deep recessions. Pretending that no restructuring will be necessary will not make the debt overhang dissappear. For many, if not most, advanced countries, concerns about those debt burdens will shape policy choice for many years to come.

In this setting, monetary policy in the advanced economies is likely to remain "overburdened" for some time.

Complicating the situation is the fact that the debt overhang is not limited to the public sector, as it was immediately following World War II. There is at present a high degree of leverage in the private sector, especially in the financial industry and households. Table 1 documents that the surge in domestic bank credit that unfolded in most advanced economies during 1997-2007 has barely begun to unwind. Perhaps of greater note (columns 8 and 9) is that

[4] The term was coined by McKinnon (1973). Interestingly, he and others subsequently largely applied the term to characterize the financial markets if emerging markets, failing to observe that the advanced economies in the Bretton Woods system and even after the breakdown of fixed exchange rates had:, (1) nominal interest ratesthat were controlled (usually through explicit ceilings); (2) directed credit; (3) pervasive capital controls; and (4) considerable restrictions on the activity of banks. For a discussion of the UK case, see Goodhart (2012, this issue).

the build-up in external leverage was even greater, with Iceland and Ireland recording gross external debt positions in excess of ten times GDP. Importantly, the table documents that the debt overhang and its associated financial fragility is a **common** thread across most advanced economies. Another common thread is stubbornly high unemployment. Concerns that higher real interest rates and deflation will worsen an already precarious situation are likely to impose added constraints on monetary policy.

Table 1. Housing Prices, Credit, External Debt and Growth: Selected Advanced Economies, 1997-2010

Country	Banking crisis		Change in real house prices [3]		Change in Domestic credit/GDP		Change in gross external debt/GDP		Average of columns	Median per capita GDP growth		
	date	magnitude	1997-2007	2007-2010	1997-2007	2007-2010	2003-2007	2007-2010	6 & 8	1950-1996	1997 2010	Difference
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Japan			-30.1	-2.4	-8.9	17.5	8.4	-1.7	-0.3	4.7	1.6	-3.1
Germany	2008	systemic	-11.1	-0.1	-12.4	6.0	17.8	-4.6	2.7	3.2	1.7	-1.5
Austria	2008	borderline	5.6	13.4	-4.9	11.1	54.0	-9.3	24.6	3.3	2.4	-1.0
Finland			51.1	2.3	30.3	13.2	17.8	31.3	24.1	2.7	3.6	1.0
Italy			35.3	0.6	39.6	12.3	24.1	-4.5	31.9	3.4	1.6	-1.8
Greece	2008	borderline	88.6	-9.3	31.5	4.4	41.4	25.1	36.5	3.3	4.0	0.6
Belgium	2008	systemic	101.2	2.3	-7.0	4.5	85.7	68.9	39.3	2.7	2.5	-0.2
France	2008	borderline	111.6	-11.6	21.0	6.1	58.9	5.6	40.0	3.0	1.8	-1.3
Switzerland	2008	borderline	9.9	1.4	7.8	5.9	86.1	-102	47.0	2.3	2.0	-0.3
Denmark	2008	systemic	79.7	-19.8	60.9	18.5	43.3	14.3	52.1	2.0	1.8	-0.2
Sweden	2008	borderline	114.9	2.8	84.8	9.1	39.4	43.7	62.1	2.4	3.0	0.6
Portugal	2008	borderline	n.a.	-5.5	81.4	33.5	44.0	-21.5	62.7	4.2	1.5	-2.6
Netherlands	2008	systemic	74.1	-6.6	54.1	46.4	74.8	29.5	64.4	2.3	2.9	0.6
US[1]	2007	systemic	86.5	-23.4	21.7	8.5	33.0	-1.3	27.4	2.5	2.1	-0.4
					98.4	***-48.0***			***65.7***			
Spain	2008	systemic	118.5	-16.6	95.4	31.3	48.9	14.4	72.2	3.1	3.5	0.4
UK	2007	systemic	150.1	-16.0	66.1	48.0	111.9	8.3	89.0	2.3	2.6	0.3
Ireland	2007	systemic	114.8	-23.1	107.5	31.1	407.2	169.8	257.3	2.8	5.0	2.1
Iceland[2]	2007	systemic	66.9	-32.1	234.2	-66.9	511.0	428.0	372.6	3.1	3.4	0.4
Memorandum items:												
Median			79.7	-6.0	46.9	11.7	46.4	6.9	49.5	2.9	2.4	-0.5
Average			68.0	-8.0	54.4	10.2	94.9	30.0	74.7	3.0	2.6	-0.4

Sources Reinhart and Reinhart (2010) based on *Flow of Funds,* Board of Governors of the Federal Reserve, *International Financial Statistics* and *World Economic Outlook,* International Monetary Fund, Laeven and Valencia (2010), Maddison (2004 and website), Reinhart and Rogoff (2009), *Quarterly External Debt Statistics*, World Bank and Data Appendix for the multiple listings for real estate prices and authors' calculations.

Notes: The data appendix provides a listing of the coverage of real estate prices and domestic credit. The external debt data is through 2010:Q1.

[1] For the U.S., we report bank credit but the more relevant concept (as banks do not play nearly as big a role as in other advanced economies) is private debt from the flow of funds. Beginning in 2010:Q1, almost all Fannie Mae and Freddie Mac mortgage pools are consolidated in Fannie Mae's and Freddie Mac's balance sheets and, thus, are included in the debt of government enterprises; this shows up a massive private deleveraging (about 27 percent of GDP) in Q1. Absent this shift inliabilities, the deleveraging since 2007 is closer to 20 percent of GDP.

[2] The credit boom ends in 2006, so the changes reported is 1997-2006 and 2006-2009, as no bank credit data for 2010 is available.

[3] For most countries, real housing prices peak in 2007. For the US the peak is 2006, so the 1997-2006 change is 115.3 percent and the 2007-2010 decline is -33.3 percent.

II. Negative real interest rates during 1945-1980 and again post-2008

One of the main goals of financial repression is to keep nominal interest rates lower than would otherwise prevail. This effect, other things equal, reduces the governments' interest expenses for a given stock of debt and contributes to deficit reduction. However, when financial repression produces negative real interest rates and reduces or liquidates existing debts, it is a transfer from creditors (savers) to borrowers (in the historical episode documented in Reinhart and Sbrancia, 2011 and summarized here--the government).

The financial repression tax has some interesting political-economy properties. Unlike income, consumption, or sales taxes, the "repression" tax rate (or rates) are determined by financial regulations and inflation performance that are opaque to the highly politicized realm of fiscal measures. Given that deficit reduction usually involves highly unpopular expenditure reductions and (or) tax increases of one form or another, the relatively "stealthier" financial repression tax may be a more politically palatable alternative to authorities faced with the need to reduce outstanding debts.

Liberal capital-market regulations and international capital mobility reached their heyday prior to World War I under the gold standard. However, the Great Depression, followed by World War II, put the final nails in the coffin of laissez-faire banking. It was in this environment that the Bretton Woods arrangement of fixed exchange rates and tightly controlled domestic and international capital markets was conceived. The result was a combination of very low nominal interest rates and inflationary spurts of varying degrees across the advanced economies. [5] The

[5] The advanced economy aggregate is comprised of: Australia, Belgium, Canada, Finland, France, Germany, Greece, Ireland, Italy, Japan, New Zealand, Sweden, the United States, and the United Kingdom. Interest rates for 2011 only reflect monthly observations through February.

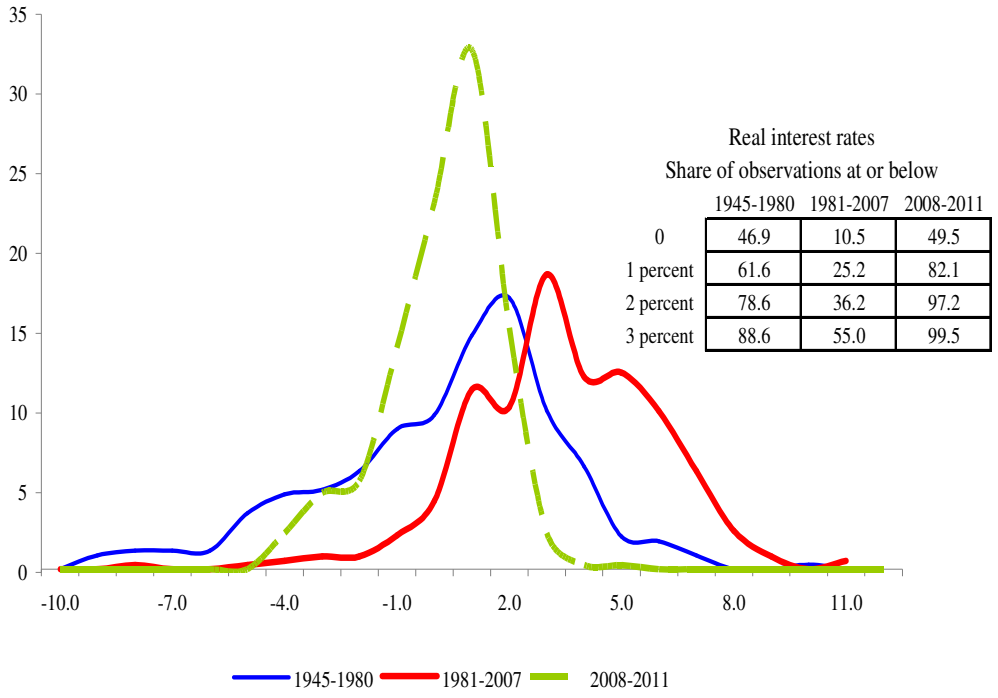
obvious results were real interest rates--whether on treasury bills (Figure 2), central bank discount rates, deposits or loans—that were markedly negative during 1945-1946.

For the next 35 years or so, real interest rates in both advanced and emerging economies would remain consistently lower than the eras of freer capital mobility before and after the financial repression era. In effect, real interest rates were, on average negative. Binding interest rate ceilings on deposits (which kept real ex-post deposit *rates even more negative* than real ex-post rates on treasury bills) "induced" domestic savers to hold government bonds. What delayed the emergence of leakages in the search for higher yields (apart from prevailing capital controls) was that the incidence of negative returns on government bonds and on deposits was (more or less) a universal phenomenon at this time. The frequency distributions of real rates for the period of financial repression (1945-1980) and the years following financial liberalization shown in Figure 2, highlights the universality of lower real interest rates prior to the 1980s and the high incidence of negative real interest rates.

A striking feature of Figure 2, however, is that real ex-post interest rates (shown for treasury bills) for the advanced economies have, once again, turned increasingly negative since the outbreak of the crisis and this trend has been intensifying over time. Real rates have been negative for about one half of the observations and below one percent for about 82 percent of the observations. This turn to lower real interest rates has materialized despite the fact that several sovereigns have bee teetering on the verge of default or restructuring (with the attendant higher risk premia). Real ex-post central bank discount rates and bank deposit rates (not shown here) have also become markedly lower since 2007.

No doubt, a critical factor explaining the high incidence of negative real interest rates in the wake of the crisis in the aggressively expansive stance of monetary policy (and more broadly, official central bank intervention) in many advanced and emerging economies during this period. This raises the broad question of to what extent current interest rates reflect market conditions versus the stance of official large players in financial markets. A large role for non-market forces in interest rate determination is a key feature of financial repression.

Figure 2: Real Interest Rates Frequency Distributions: Advanced Economies, 1945-2011
Treasury bill rates



Real interest rates
Share of observations at or below

	1945-1980	1981-2007	2008-2011
0	46.9	10.5	49.5
1 percent	61.6	25.2	82.1
2 percent	78.6	36.2	97.2
3 percent	88.6	55.0	99.5

Sources: Reinhart and Sbrancia (2011), *International Financial Statistics,* International Monetary Fund, various sources listed in the Data Appendix, and authors' calculations.
Notes: The advanced economy aggregate is comprised of: Australia, Belgium, Canada, Finland, France, Germany, Greece, Ireland, Italy, Japan, New Zealand, Sweden, the United States, and the United Kingdom.
Interest rates for 2011 only reflect monthly observations through February.

In the US treasury market, the rising role of official players (or conversely the shrinking role of "outside market players") is made plain in Figure 3, which shows the evolution of the s Share of "Outside" Marketable U.S. Treasury Securities plus Government Sponsored Enterprises (GSEs) securities from 1945 through 2010.[6] The combination of QE, QE2 and, more

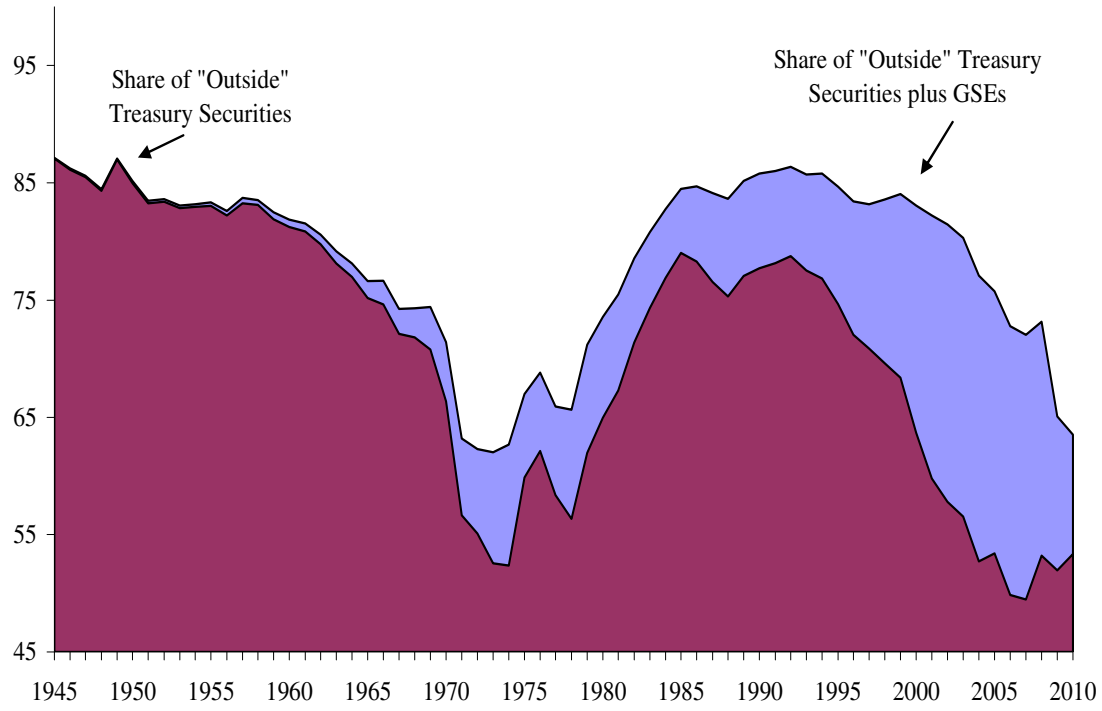
[6] : The outstanding stock of *marketable* U.S. Treasury securities plus GSEs is calculated as Treasury credit market instruments plus GSE issues plus GSE-backed mortgage pools less savings bonds, less budget agency securities. "Outside" marketable securities is defined as marketable securities (as defined above) less official holdings by the

importantly, record purchases of US Treasuries (and near Treasuries-the GSEs) by foreign central banks (notably China, but also emerging Asia and other BRICs) has left the share of outside marketable treasury securities at nearly 50 percent and when GSE are included below 65 percent. There are the lowest shares since the expansive monetary policy stance of the US regularly associated with break down of the Bretton Woods in the early 1970s. This was also a period (like the present) of rising oil, gold, and commodity prices, negative real interest rates, currency turmoil, and eventually higher inflation.

Figure 4, which shows the share of UK General Government gross debt held by the Bank of England (and domestic banks) from 1998 until end-2010, presents the complementary image to Figure 3 for the US market. The Bank of England's quantitative easing policies since the crisis, coupled the requirement (since October 2009) that bank hold a higher share of gilts in their portfolios to satisfy tougher liquidity standards have reduced the share of "outside" gilts to about 70 percent. If foreign official holdings (by central banks) were included in this calculus the share of outside gilts would be considerably lower and closer to that of the US treasury market.

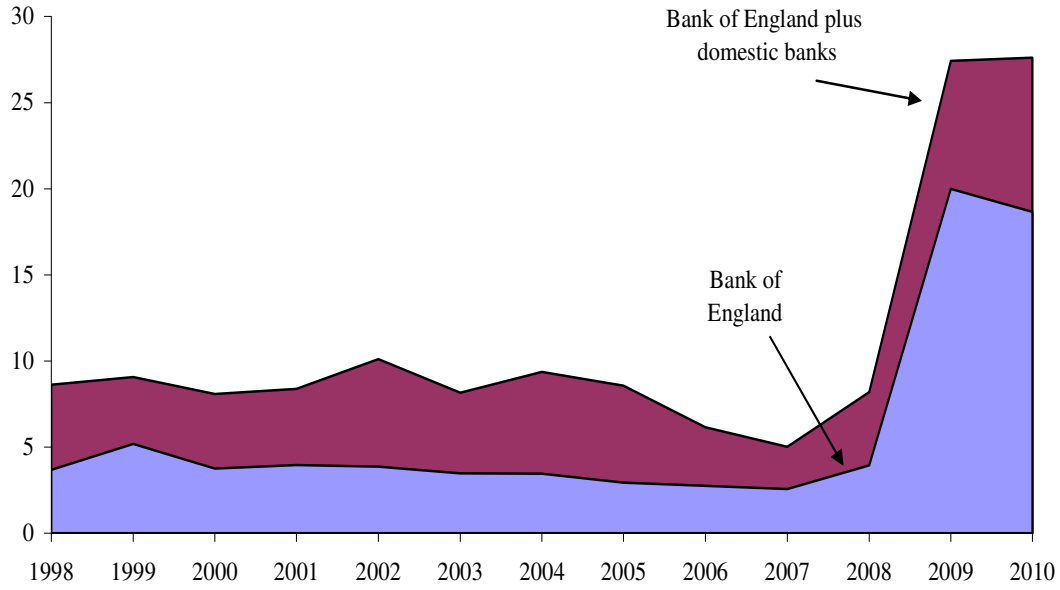
rest of the world of US Treasuries and GSEs, less holdings by the Federal Reserve (monetary authority) of U.S. treasuries and GSEs.

Figure 3. Share of "Outside" Marketable U.S. Treasury Securities plus Government Sponsored Enterprises (GSEs) Securities: End-of-period, 1945-2010



Sources: *Flow of Funds*, Board of Governors of the Federal Reserve and authors' calculations.
Notes: The outstanding stock of *marketable* U.S. Treasury securities plus GSEs is calculated as Treasury credit market instruments plus GSE issues plus GSE-backed mortgage pools less savings bonds, less budget agency securities. "Outside" marketable securities is defined as marketable securities (as defined above) less official holdings by the rest of the world of US Treasuries and GSEs, less holdings by the Federal Reserve (monetary authority) of U.S. treasuries and GSEs.

Figure 4. Share of UK General Government Gross Debt Held by the Bank of England and Domestic Banks: End-of-period, 1998-2010



Sources: Bankof England, Kirkegaard and Reinhart (2011) for individual country sources, International Monetary Fund, *World Economic Outlook.*
Holdings of both general government loans and securities. Totals do not include government debt holdings by pension funds.

The European Central Bank (ECB) bond purchases of the three troubled sovereigns totaled about €76 billion over May 2010-March 2011 and account for about 12 percent of the combined general government debts of Greece, Ireland, and Portugal.

To summarize, central banks on both sides of the Atlantic (and the Pacific, for that matter) have become even bigger players in purchases of government debt, possibly for the indefinite future. For the United States, fear of currency appreciation continues to drive central banks in many emerging markets to purchase U.S. government bonds on a large scale. In other words, markets for government bonds are increasingly populated by nonmarket players, calling into question what the information content of bond prices are relatively to their underlying risk profile—a common feature of financially repressed systems.

III. The liquidation of government debt: The historical precedent, 1945-1980

In this section, I summarize Reinhart and Sbrancia, 2011 (RS, henceforth) , who document how financial repression liquidated mountains of public debts in the advanced economies following World War II by quantifying the *"liquidation effect"* a key component of the broader financial repression tax on savings. We then move on to document the forms financial repression is taking on in the modern context and speculate about future developments.

Calculating the financial repression tax: concepts and results

A summary measure of the reduction in government debt (relative to income) wrought by financial repression dubbed the "liquidation effect" is developed. No doubt, the devil lies in the details, as the structure of government debt varies enormously across countries and within countries over time. Differences in coupon rates, maturity and the distribution of marketable and nonmarketable debt, securitized debt versus loans from financial institutions, importantly shape the overall cost of debt financing for the government. The starting point to come up with a measure that reflects the true cost of debt financing is a reconstruction of the government's debt profile over time.

The debt portfolio. The first step is to construct a "synthetic portfolio" for the government's total debt stock at the beginning of the year. This portfolio reflects the actual shares of debts across the different spectrum of maturities as well as the shares of marketable versus nonmarketable debt.

Interest rate on the portfolio. The "aggregate" nominal interest rate for a particular year is the coupon rate on a particular type of debt instrument weighted by that instrument's

share in the total stock of debt. RS then aggregate across all debt instruments. The real rate of interest,

$$r_t = \frac{i_{t-1} - \pi_t}{1 + \pi_t}$$

(where i and π are the nominal interest and inflation rates, respectively) is calculated on an ex-post basis using CPI inflation for the corresponding one-year period. It is a before-tax real rate of return (excluding capital gains or losses).

A definition of debt "liquidation years." Benchmark calculations define a liquidation year, as one in which the real rate of interest (as defined above) is negative (below zero). This is a conservative definition of liquidation year; a more comprehensive definition would include periods where the real interest rate on government debt was below a "market" real rate.

Savings to the government during liquidation years. This concept captures the savings to the government from having a negative real interest rate on government debt. (As noted it is a lower bound on saving of interest costs, if the benchmark used assumed, for example a positive real rate of, say, two or three percent.) These savings can be thought of as having "a revenue-equivalent" for the government, which like regular budgetary revenues can be expressed as a share of GDP or as a share of recorded tax revenues to provide standard measures of the "liquidation effect" across countries and over time. The saving (or "revenue") to the government or the ***"liquidation effect"*** is the real (negative) interest rate times the "tax base," which is the stock of domestic government debt outstanding.

Results

Reinhart and Sbrancia (2011) document the high incidence of "liquidation years" (which even by conservative estimates amount to at least ¼ of the years for the United States and considerably more for other countries). We now present estimates of the magnitude of the

savings to the government (financial repression tax or liquidation effect). These estimates take "the tax rate" (the negative real interest rate) and multiplies it by the "tax base" or the stock of debt. Table 2 reports these estimates for each country. The magnitudes are in all cases non-trivial.

For the United States and the United Kingdom, the annual liquidation of debt via negative real interest rates amounted on average from 3 to 4 percent of GDP a year. Annual deficit reduction of 3 to 4 percent of GDP quickly accumulates (even without any compounding) in the course of a decade. For Australia and Italy, which recorded higher inflation rates, the liquidation effect was larger (around 5 percent per annum). These estimates (which are arrived at under a conservative algorithm) highlight the significant role played by financial repression on debt reduction in an earlier episode.

Table 2: Government Revenues from the ***"Liquidation Effect"*** per year

Country	Period	Benchmark Measure "Liquidation effect revenues"	
		% GDP	% Tax Revenues
Argentina	1944-1974	3.2	19.5
Australia	1945-1968, 1971,1978	5.1	20.3
Belgium	1945-1974	2.5	18.6
India	1949-1980	1.5	27.2
Ireland	1965-1990	2.0	10.3
Italy	1945-1970	5.3	127.5
South Africa	1945-1974	1.2	8.9
Sweden	1945-1965, 1984-1990	0.9	6.5
United Kingdom[1]	1945-1980	3.6	26.0
United States	1945-1980	3.2	18.9

Source: Reinhart and Sbrancia (2011)

V. "Modern" Financial Repression: 2008-2012

One thing advanced economies do not lack at present is an abundance of government debt, which is accompanied with the attendant common policy challenge of finding prospective buyers for such debt. The role of massive purchases of government debt by central banks around the world in keeping nominal and real interest rates low was already noted in Section II. In addition, Basle III provides for the preferential treatment of government debt in bank balance sheets via substantial differentiation (in favor of government debt) in capital requirements.

Other approaches to creating or expanding demand for government debt may be more direct. For example, at the height of the financial crisis UK banks were required to hold a larger share of gilts in their portfolio (see Table 3). Figure 5 documents how Greek, Irish, and Portuguese banks have already liquidated a substantial fraction of their foreign assets and swapped into domestic public debt. [7] Thus, the process where debts are being "placed" at below

[7] The role of the ECB's collateral policy in open market operations has been crucial, as it provided peripheral banks with an opportunity to pass on large amounts of domestic government debt. Supra-national pressure from the ECB

market interest rates in pension funds and other more captive domestic financial institutions is already under way in several countries in Europe. Spain has recently reintroduced a *de facto* form of interest rate ceilings on bank deposits. [8,]

It is difficult to sort out the "true" exact motivation, but as bank deposits have migrated from the periphery countries in Europe to Germany and Scandinavia, among others, the amount of disclosure, red tape and other requirements t are necessary to effect such a transfer have increased markedly. Some of these requirements may be motivated by the government's desire to curb money laundering and tax evasion the measures begin to encroach on the well-trodden path of capital controls.

Our discussion has focused primarily on Western Europe but similar trends are emerging in Eastern Europe. Pension reform adopted by the Polish parliament in March of this year has met with criticism from employers' federations and business circles**.** Polish Confederation of Private Employers Lewiatan say the proposal seeks to hide part of the state's debt by grabbing the money of the insured and passing the buck to future governments. The confederation also points out that moving money from pension funds to ZUS will protect the government from having to change the definition of public debt and exceed financial safety thresholds, but will expose future retirees to losses. Struggling with budgetary pressure at home, Hungary has nationalised its pre-funded pension schemes and excluded the cost of the reforms from their public debt figures. Bulgaria has taken measures in the same direction (see also Table 3).

Figure 5. Domestic Bank Holdings of General Government Debt: Greece, Ireland, Portugal, and UK, 2008-2010, end-of-period (as a percent of gross general government debt)

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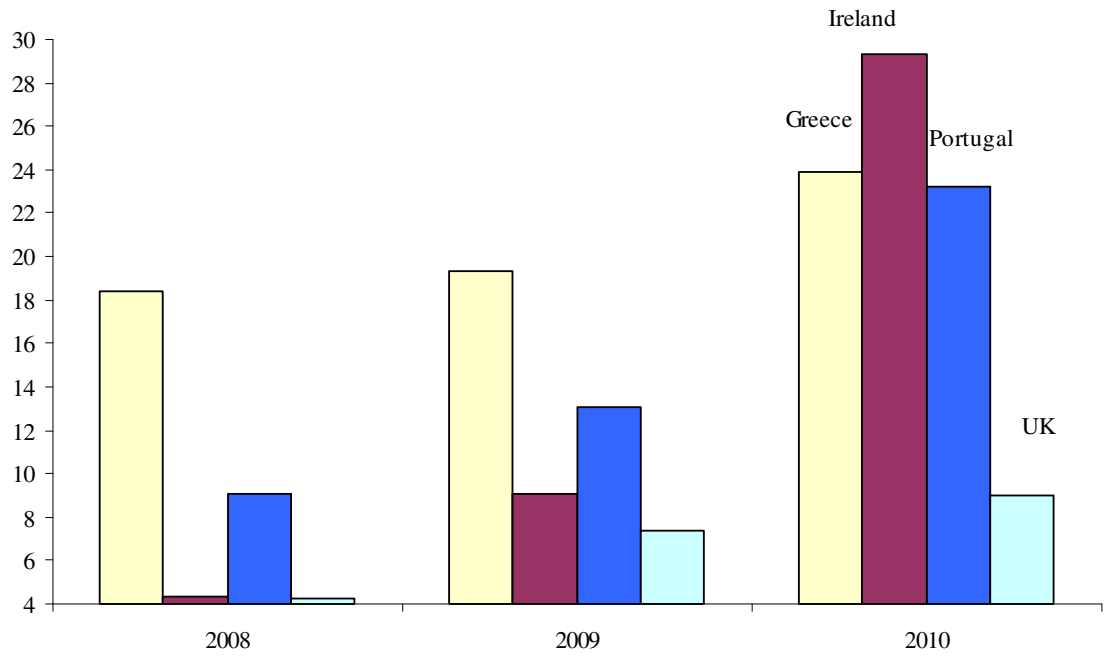
on peripheral banks to scale back this practice (and thus limit domestic financial repression) was instrumental in pushing the governments of both Ireland and Portugal to request international bail-outs. See also the discussion in the IMF's April 2011 *Global Financial Stability Report.*

[8] See Table 3.



Sources: See Kirkegaard and Reinhart (2011) for individual country sources, International Monetary Fund, *World Economic Outlook.*
Notes: Holdings of both general government loans and securities. Totals do not include European Central Bank (ECB) bond purchases of the three troubled sovereigns. These purchases totaling about €76 billion over May 2010-March 2011, account for about 12 percent of the combined general government debts of Greece, Ireland, and Portugal. Does not include government debt holdings by pension funds.

The re-emergence of capital controls in emerging markets

Central banks frequently come under pressure from exporters who complain that their focus on domestic price stability and neglect of the exchange rate comes at the expense of the profitability of these key sectors. A typical pattern in emerging markets is that an upswing in expectations causes a capital inflow and appreciates the exchange rate, which in turn squeezes tradable economic activities.

Traditionally, central banks have responded to capital inflows by a combination of (sterilized) intervention and capital-account management policies. Sterilized intervention which results in a build-up of reserves is costly and ultimately self-defeating when financial markets are open. There has been an increased tendency, therefore, to resort to policies of the second type. As the legitimacy of capital controls have been restored by the IMF, more countries are willing

to openly discuss and institute them (e.g., Brazil, Thailand, and Korea). But even when central banks choose to respond through some of these mechanisms, they are reluctant to signal that they are targeting the exchange rate, lest their attachment to conventional inflation targeting come under question.

The use of capital controls for emerging markets concerned about destabilizing "hot money" inflows, potential overheating, rising inflationary pressures, and the related competitiveness issues have found far greater acceptance in the international community than at any time since the breakdown of the Bretton Woods system of fixed exchange rates. Many emerging markets have already embarked on various policies with that aim (Table 3).

VI. Implications and Conjecture

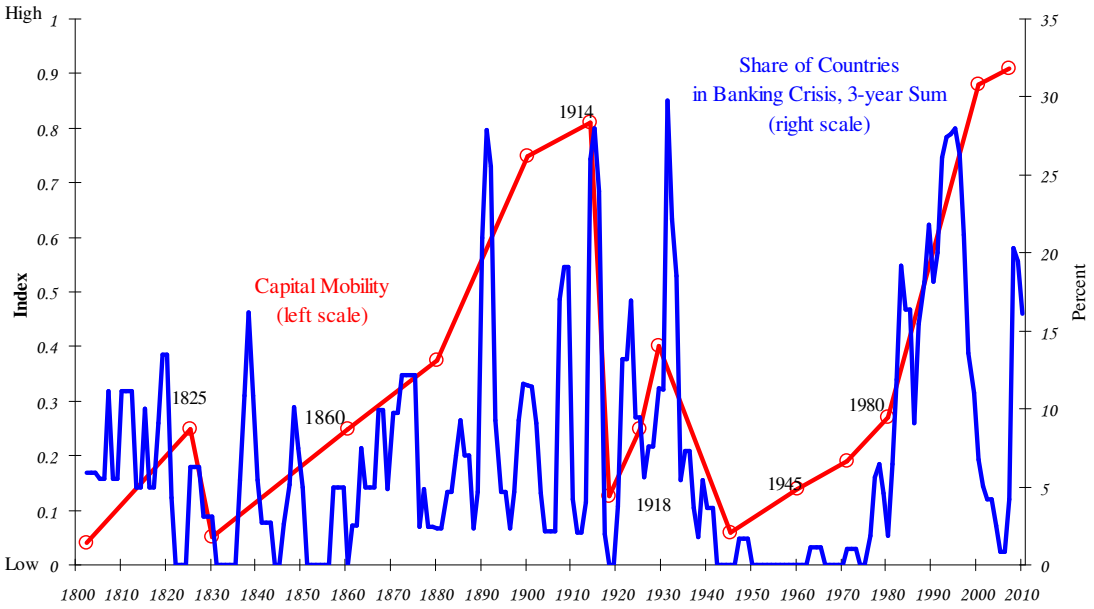
As described in Section III, financial repression via negative real interest rates contributed to the relatively rapid debt reduction following World War II. Reinhart and Sbrancia (2011) quantify the fiscal dimension of the "financial repression tax" and conclude it was quantitatively significant. Their analysis, however, is silent on the welfare, redistributive, or growth consequences of financial repression. The existing empirical literature on financial repression is not likely to be well equipped to answer those queries, as it is skewed to the analysis of emerging economies, usually post-1980. The relative longevity of the financial repression era (1945-1980) importantly owed to the fact that it was pervasive-simultaneously encompassing advanced and emerging markets.

Beyond facilitating debt reduction, however, a salient "macroprudential" feature of the financial repression era is particularly compelling. Systemic financial crises during 1945-1980, when capital mobility was limited, were virtually nonexistent worldwide. Figure 6, reproduced and updated from Reinhart and Rogoff (2009) illustrates this point. To the extent that severe

financial crises (as opposed to shorter-lived banking "panics") are associated with deep and prolonged recessions and markedly deteriorating government finances, this cannot be a trivial factor when weighing the relative merits of a less laizez faire global financial system.

At present, the levels of public debt in many advanced economies are at or near uncharted territory; some of these governments face the prospect of debt restructuring. Furthermore, public and private *external* debts (which are a relatively volatile source of funding) are at historic highs. It seems probable that policymakers for some time to come will be preoccupied with debt reduction, debt management, and, in general, efforts to keep debt servicing costs manageable. In this setting, financial repression (with its dual aims of keeping interest rates low and creating or maintaining captive domestic audiences) will probably find renewed favor and the measures and developments we have described and discussed in this note are likely to be only the tip of a very large iceberg.

Figure 6. Capital Mobility and the Incidence of Banking Crises:
All Countries, 1800-2010



Sources: Updated from Reinhart and Rogoff (2009) ; based Bordo et al. (2001), Caprio et al. (2005), Kaminsky and Reinhart (1999), Laeven and Valencia (2010), Obstfeld and Taylor (2004), and these authors.
Notes: This sample includes **all** countries (even those not in our core sample of 66). The full listing of banking crises dates are shown in Appendix II**.** On the left scale, we updated our favorite index of capital mobility, admittedly arbitrary, but a concise summary of complicated forces. The smooth red line shows the judgmental index of the extent of capital mobility given by Obstfeld and Taylor (2004), back cast from 1800 to 1859 using their same design principle.

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Table 3. The Re-emergence of Financial Repression, 2008-2011

The Advanced Economies (mostly directing domestic credit to the government)

France, December 2010: **Liquidation of Fonds de Reserve Pour Les Retraites (FFR)** The French government changed the law to shift the €37bn FFR from providing long-term financial support to the French PAYG pension system after 2020 to instead pay an annual €2.1bn to the Caisse d'Amortissement de la Dette Sociale (CADES) from 2011 to 2024 and at that point transfer all remaining assets to the CADES in one lump-sum payment. This shift in FFR's investment horizon has meant a radical shift in asset allocation from longer-term diversified riskier assets to a short-term LDI-strategy dominated by liability matching short-term French government bonds. For the duration of its lifespan the FRR has consequently been transformed into a large captive buyer of French government bonds.

Ireland, 2010: **Use of the National Pension Reserve Fund to Recapitalize Banks** As a result of the banking crisis, Ireland National Pension Reserve Fund (NPRF) may have to contribute up to €17.5bn to recapitalize Ireland's banks. The NPRF was originally set up in 2001 to help finance the long-term costs of Ireland's social welfare and public service pensions from 2025 onwards. However, a 2010 law directed the NPRF to invest in Irish government securities and provides the legal authority for the Irish government to fund capital expenditure from the NPRF from 2011-2013.
April 2011: Levy on pension funds. The Irish government has further recently suggested to fund job creation schemes through a special 0.5% levy on private pension funds.

Japan, March 2010: **Reversal of Post Privatization and Raising of Deposit Ceiling** The new DPJ government reversed the 2007 plan to privatize Japan Post, the world's largest financial conglomerate with more than ¥300tr in assets. Crucially, the DPJ government with the new law also doubled the deposit cap at Japan Post Bank to ¥20mn and raised the life insurance coverage limit at Japan Post Insurance Co. from ¥13mn to ¥25mn. Given Japan Post's traditional roughly 75 percent asset allocation to JGBs, and under the assumption that consumers will transfer deposits to a company certain to enjoy a government guarantee, the reversal of the Japan Post privatization provides additional incentives to a captive customer of Japanese government debt.

Portugal, 2010: **The transfer of the previously privatized Portugal Telecom pension scheme back to the Portuguese government**, which in the process immediately booked €2.8bn (1.6% of GDP) in extra revenues. This enabled the Portuguese government to improve its budget deficit in 2010 sufficiently to cosmetically appear to be in line with annual EU deficit reduction targets.

Spain**, April 2010: Interest rate ceilings on deposits.** The Ministry of Finance (MoF) requires that institutions offering deposit interest rates that are considered to be above market rates (determined by MoF) double their contributions to the Fondo de Garantía de Depósitos.

UK, October 2009, **UK Financial Services Authority (FSA) puts a global regulatory liquidity marker.** The proposal by the FSA requires UK banks, investment banks, and subsidiaries or branches of foreign banks operating in the London market to hold more high quality government securities—at least around £110 billion more (at that time), and cut their reliance on short-term funding by 20 percent in the first year alone.
2011? **Royal Mail privatization**, which will see an expected £23.5bn in assets transferred to the UK treasury ahead of privatization (as well as an expected £29.5bn in liabilities).

Sources: Kirkegaard and Reinhart (2011) and Magud, Reinhart, Rogoff (2011).

Table 3. The Re-emergence of Financial Repression, 2008-2011 (continued)

The Emerging Markets (mostly controls on capital inflows)

Brazil, March, 2008: IOF tax (Tobin-type tax on entry) of 1.5% on fixed income investments by foreigners.

October, 2008: IOF tax on fixed income investments by foreigners reduced from 1.5% back to zero.
October, 2009: 2% IOF on stock and bond market purchases.
November, 2009: Tax on the issuance of depositary receipts in international markets.
October, 2010: IOF increased to 4% for fixed income investments and equity funds (IOF on individual equities left at 2%). IOF increased to 6% for fixed income investments, and from 0.38% to 6% on margin deposits for derivative transactions. Loopholes for IOF on margin requirements closed.

Czech Republic, 2008: 40% non-interest reserve requirement for portfolio flows (IPOs excluded).

***Hungary,* 2011** the government gave the population "an offer few could refuse" by demanding that pensioners in order to receive any state pension had to return fully to the state pension system, taking their existing private second pillar assets with them. Forcefully coerced the vast majority of Hungarians obliged, providing the Hungarian government with a likely €10bn (about 9.5% of GDP) in extra revenues in 2011.

Indonesia, June, 2010*:* Required holding period on foreign capital inflows and central bank notes were increased to 1 month, and central bank's instruments with longer maturity (6 month and 9 month) were introduced.

Peru, 2009: Foreign purchases of central bank bills were banned, reserve requirements all deposits were increased (local currency deposits held by foreigners raised to 120%)., and reserve requirement on other foreign liabilities with maturity less than 2 years were increased to 75%.
2010: Fee on foreign purchases of central bank liquidity draining instruments was increased to 400 basis points. 30% for transactions through a Peruvian broker and 5% for transactions through a foreign broker Capital gains tax for non-residents' investments in the domestic stock market were imposed. Imposed a 30% tax on foreign investor gains from PEN-denominated futures maturing within 60 days.
January, 2010: 30% income tax introduced for settlement of derivative contract with offshore banks (imposed on local financial institutions).
February, 2010: Banking regulator changed limits on net FX positions: a) Long net FX positions reduced to 75% of net equity from 100%, b) short net FX positions raised to 15% of net equity from 10%.
June, 2010: Private pension funds' limit on trading FX imposed at 0.85% of AUM (for daily transactions) and 1.95% of UAUM (over 5-day period).

Philippines, October, 2010: Caps on over-the-counter FX purchases for non-trade purposes by residents without documentation were raised from USD30,000 to USD60,000. Cap tourists' purchases upon departure without documentation was increased from USD200 to USD5000. Caps on residents' FX purchases for advance payments of import transactions without documentation increased from USD100,000 to USD1million. No approval required to prepay central bank-registered foreign currency debt of the private sector. For foreign investors' outward remittances, banks are now allowed to convert peso funds. The annual limit on the amount each resident may buy from banks for outward investments and purchases of Philippine offshore debt has been raised from USD30million to USD60million

Sources: For details see Kirkegaard and Reinhart (2011) and Magud, Reinhart, Rogoff (2011).

Table 3. The Re-emergence of Financial Repression, 2008-2011 (concluded)

The Emerging Markets (mostly controls on capital inflows)

Poland, 2011: has legislated a more drastic contributions' divergence of five percent of gross wages from private second pillar pension funds and into the public Social Insurance Institutions (ZUS).

Russia, September, 2010: In 2011, interest payments on FX borrowing exceeding 0.8 times the refinance rate of the central bank will be subject to corporate profit tax.

South Africa*, *February, 2010: to encourage outflows, banks were allowed to invest up to 25% of non-equity liabilities in external portfolios.

South Korea, 2009: To dampen real estate prices, ceilings on LTV rations lowered in Seoul.
November, 2009: Required domestic banks to fully match mid-to-long-term asset holdings with mid-to-long term funding. Limits on currency forward transactions were lowered from 125% to 100% of real transactions being hedged. Domestic banks are required to manage FX liquidity ratio on a daily basis.
Februar,y 2010: Withholding tax of 0-15% on interest, capital gains tax (10% of total selling amount or 20% of net margin), and transaction tax (0.3% of selling price) were removed.
June, 2010: Local banks' FX forward positions were limited to 50% of their equity capital. Forward positions for local branches of foreign banks were limited to 250% of capital (with 3 months to meet new ceiling and 2 years to cover existing positions).
November, 2010: Tax on profit on government bonds for foreigners: 14%.

Thailand, June, 2010: Limits on foreign asset accumulation by Thai residents (including outward FDI) were raised.
September, 2010: Limits on direct overseas investment were removed, restrictions on lending by Thai firms to foreign borrowers were relaxed, and the cap on offshore property purchase was increased.
October, 2010: For new Thai bonds issued by government and government sponsored entities, a 15% withholding tax on foreigners' interest and capital gains was reinstated. Central bank asked brokerages to start submitting daily reports of non-resident clients' outstanding cash assets.

Turkey, 2010: Withholding tax was cut to 0% for institutional investors and to 10% for retail investors irrespective of residency.

Sources: Kirkegaard and Reinhart (2011) and Magud, Reinhart, Rogoff (2011).