

# Monetary Policy in an Era of High Debt

**Carmen M. Reinhart**  
**World Bank and Harvard University**

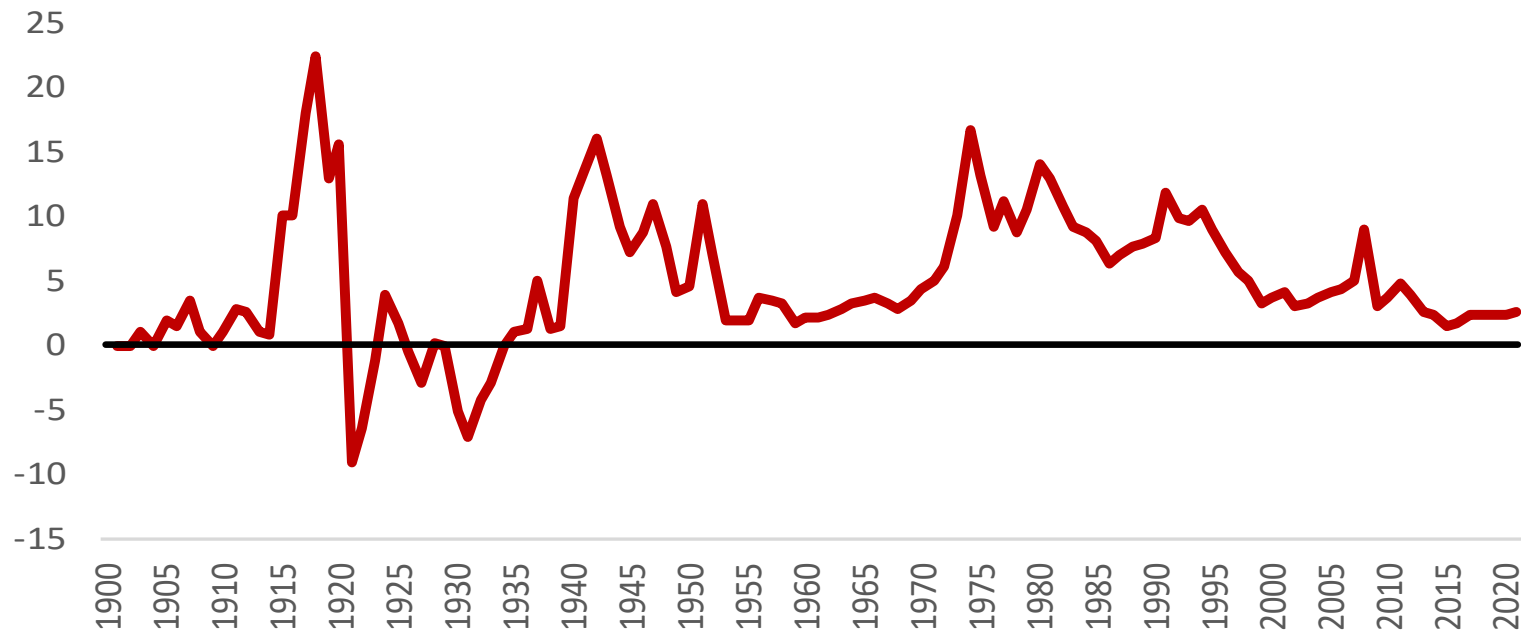
*Karl Brunner Distinguished Lecture*  
**September 2021**

# **Inflation and Interest rates:**

A global historical perspective

While there are some disturbing developments unfolding, global median inflation (unweighted) is  $\approx 2.5\%$  in 2021. Based on a new encompassing dataset, this is similar to the late 1950s and 1960s.

**World median annual inflation rates: 1900-2021**  
(in percent)

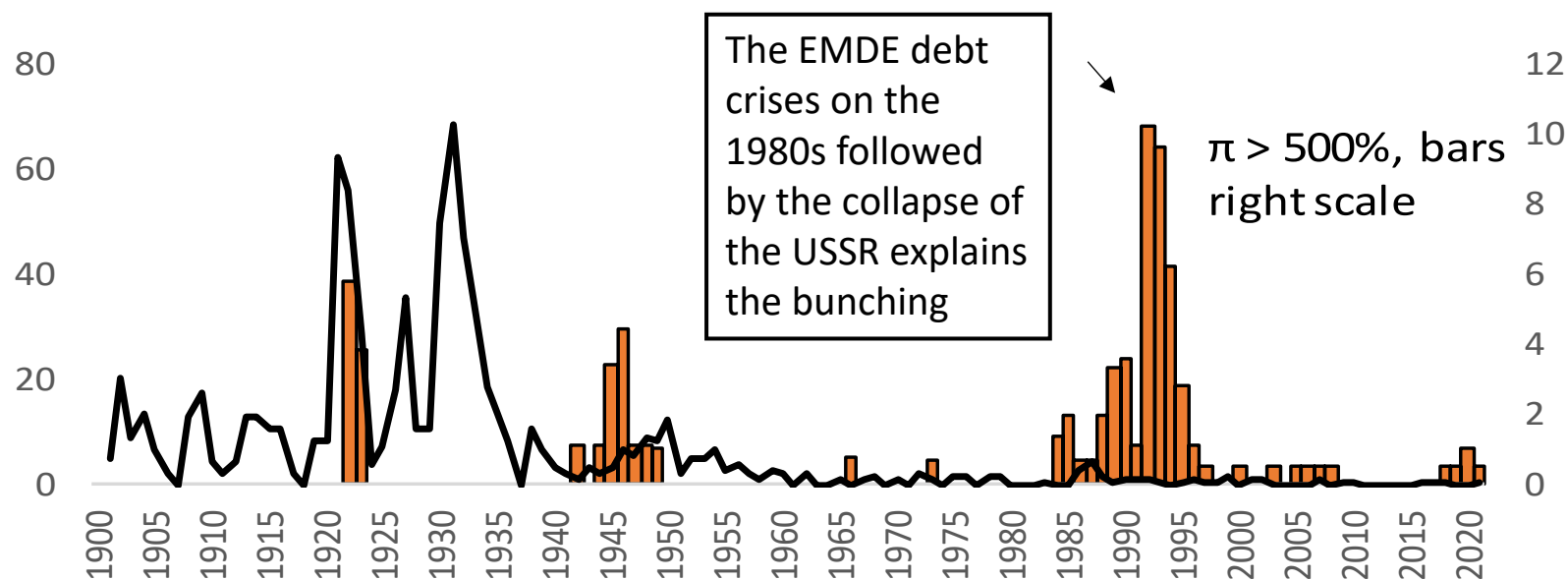


*Notes:* The number of countries with data for a given year ranges from 40 to 194 with an average of 114 per year (over 14,000 annual observations). *Source:* Farah, Graf Von Luckner and Reinhart (2021).

After a mild decade, hyperinflation (or very high inflation) has re-surfaced selectively. Major deflations have been extremely rare since WWII.

### The Extremes--Major Deflations and Hyperinflation: World, 1900-2021

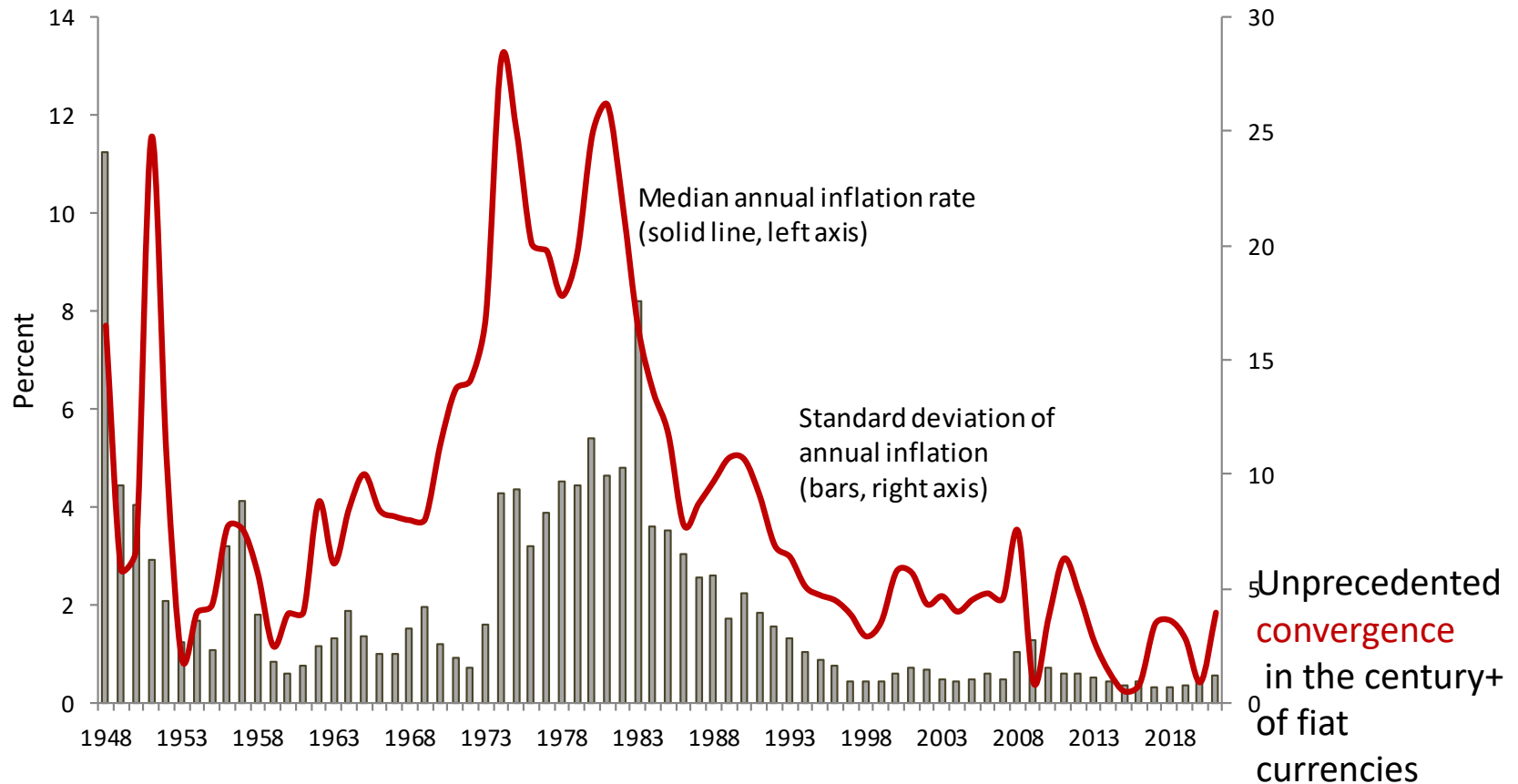
Percent of countries with deflations greater than 5 percent and number of countries with inflation rates greater than 500 percent per annum



Source: Farah, Graf Von  
Luckner and Reinhart (2021).

Reinhart

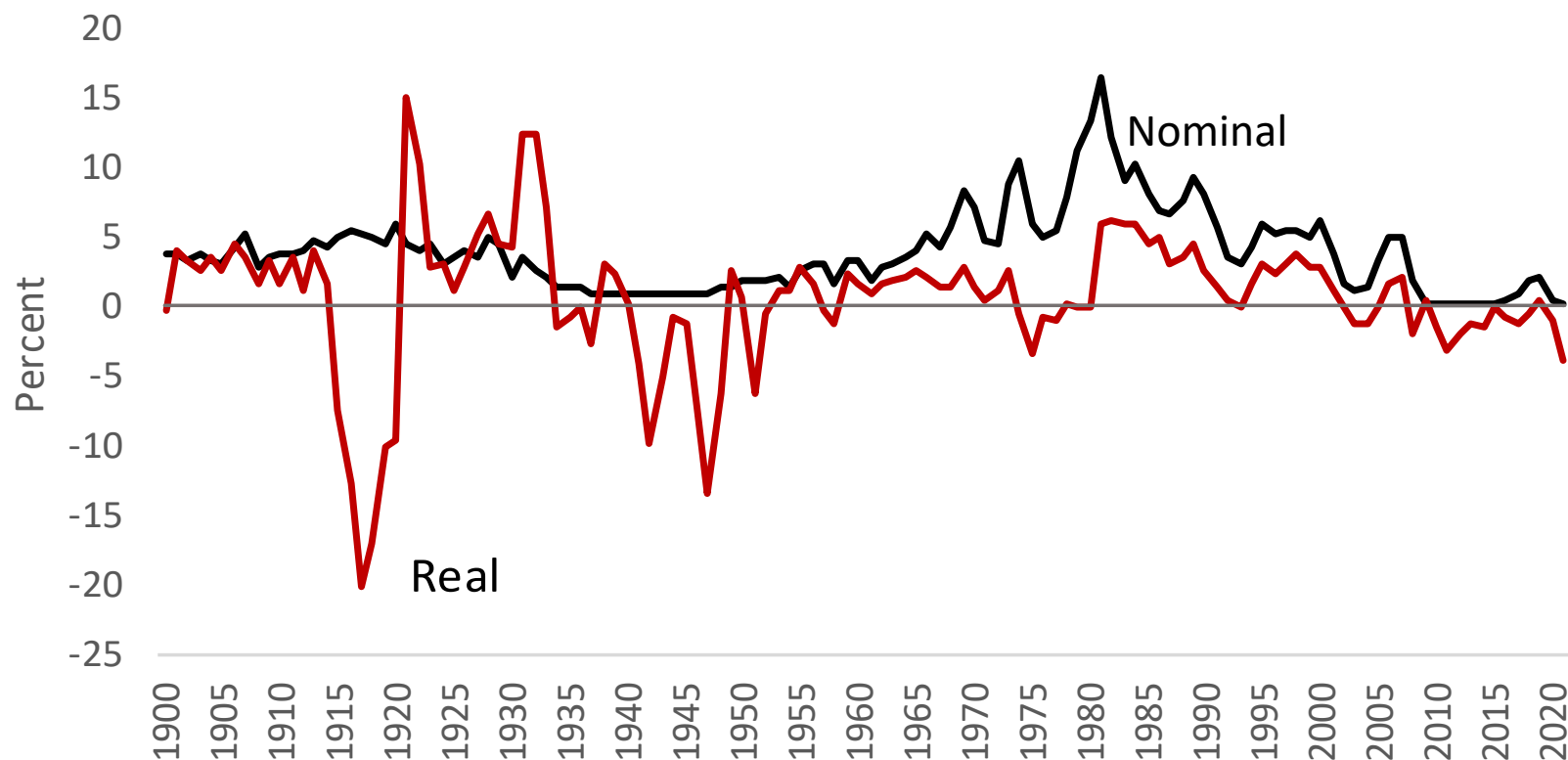
For advanced economies (1946-2021), there has been an unprecedented cross-country convergence in annual inflation rates



Sources: Reinhart and Sbrancia (2015) and Farah, Graf Von Luckner, and Reinhart (2015).

# The duration of negative real interest rates post GFC and now COVID-19 surpasses the negative rate episode of the 1970s

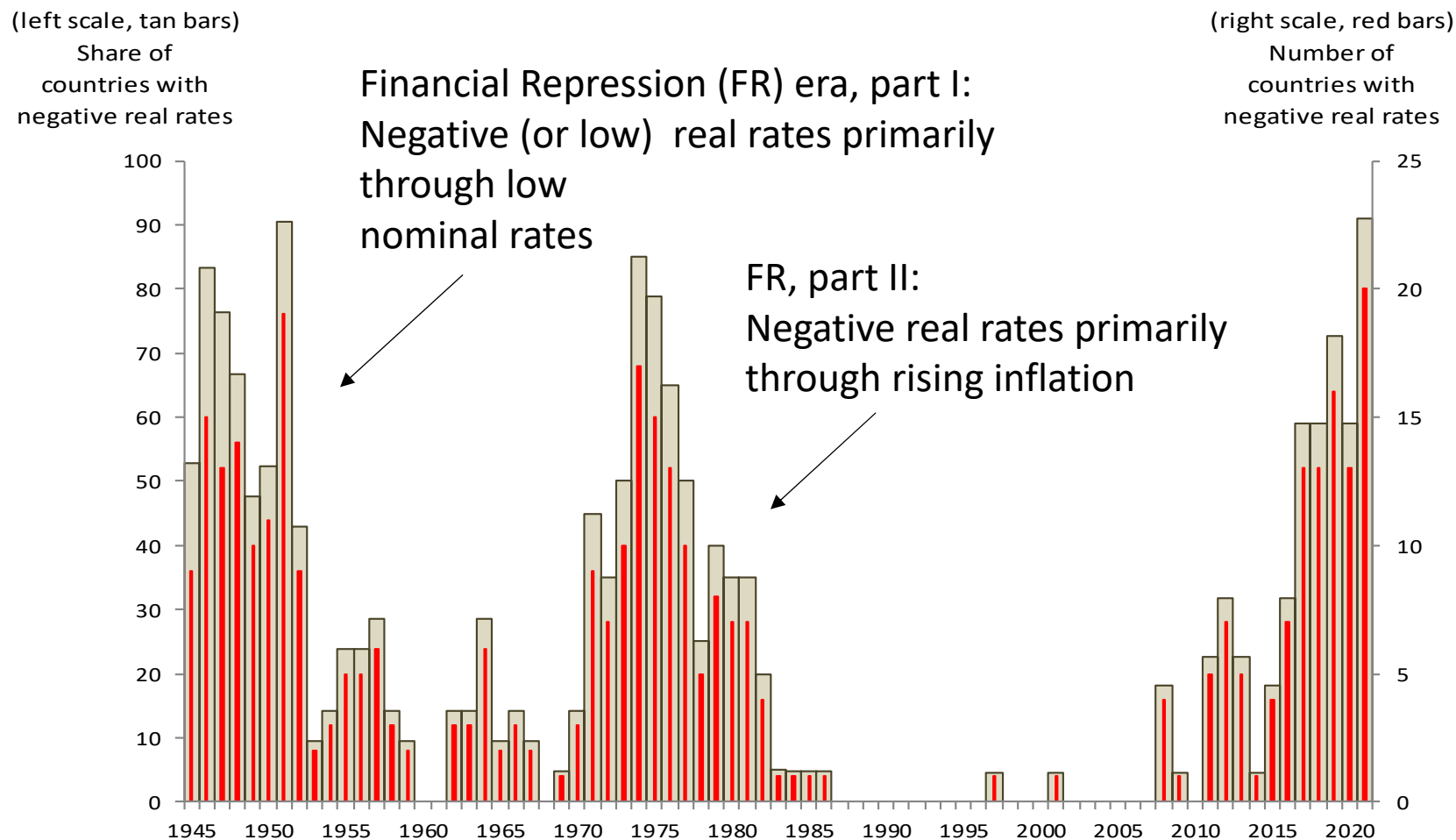
## World financial centers: Nominal and real ex-post short-term interest rates, 1900-2021:7



Notes: UK, Bank of England discount rate (1900-1918), US Federal Reserve discount rate (1919-1956) and Federal Funds rate thereafter.

Sources: Bank of England, Board of Governors of the Federal Reserve, FRED, and Reinhart, Reinhart, and Trebesch (2016).

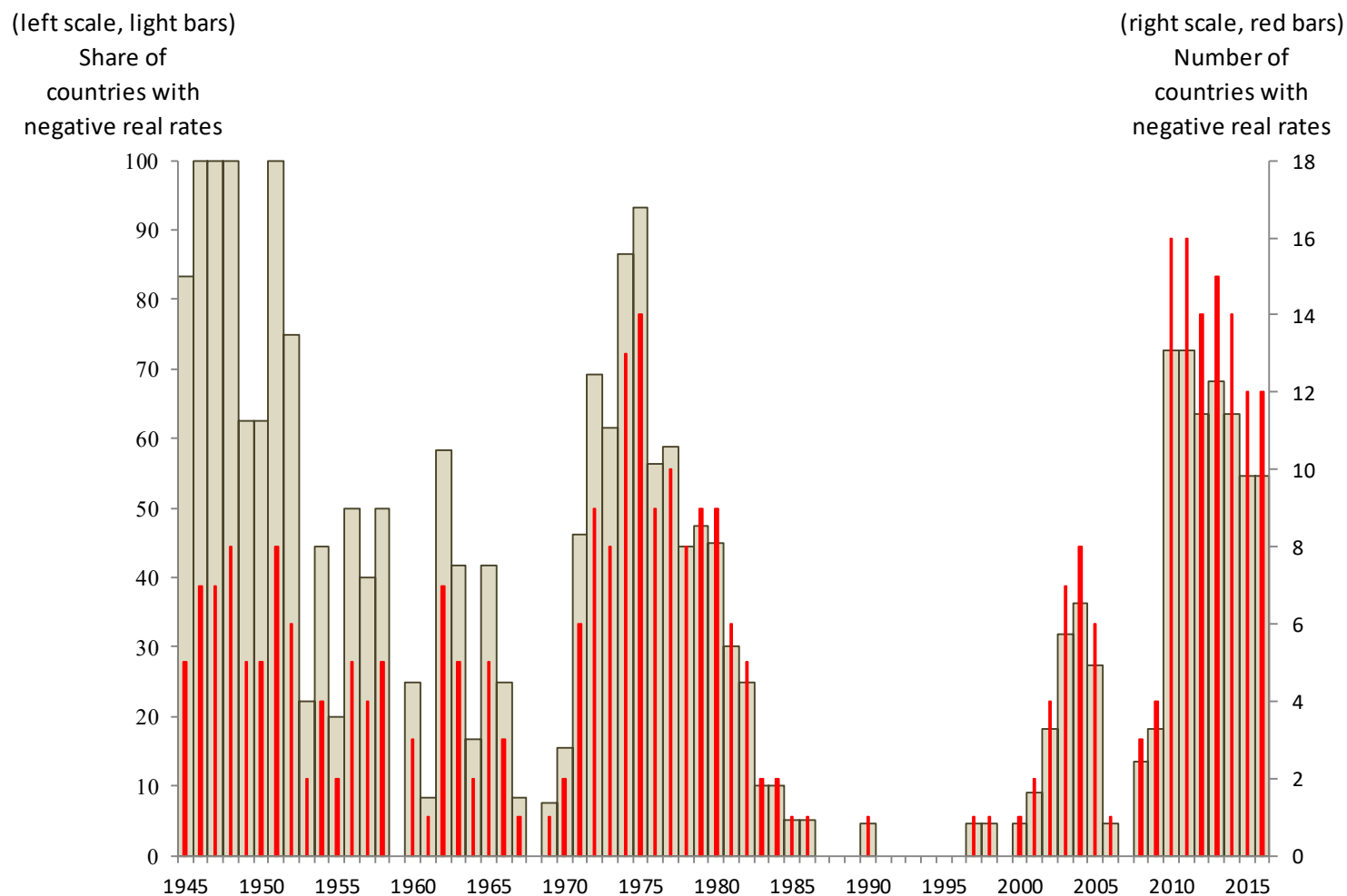
# Share of countries with **negative** ex-post bond yields: Advanced economies, 1945-2021



Sources: OECD, Reinhart and Sbrancia (2015) and sources cited therein.

Reinhart

# Share of countries with negative real short-term interest rates in advanced economies

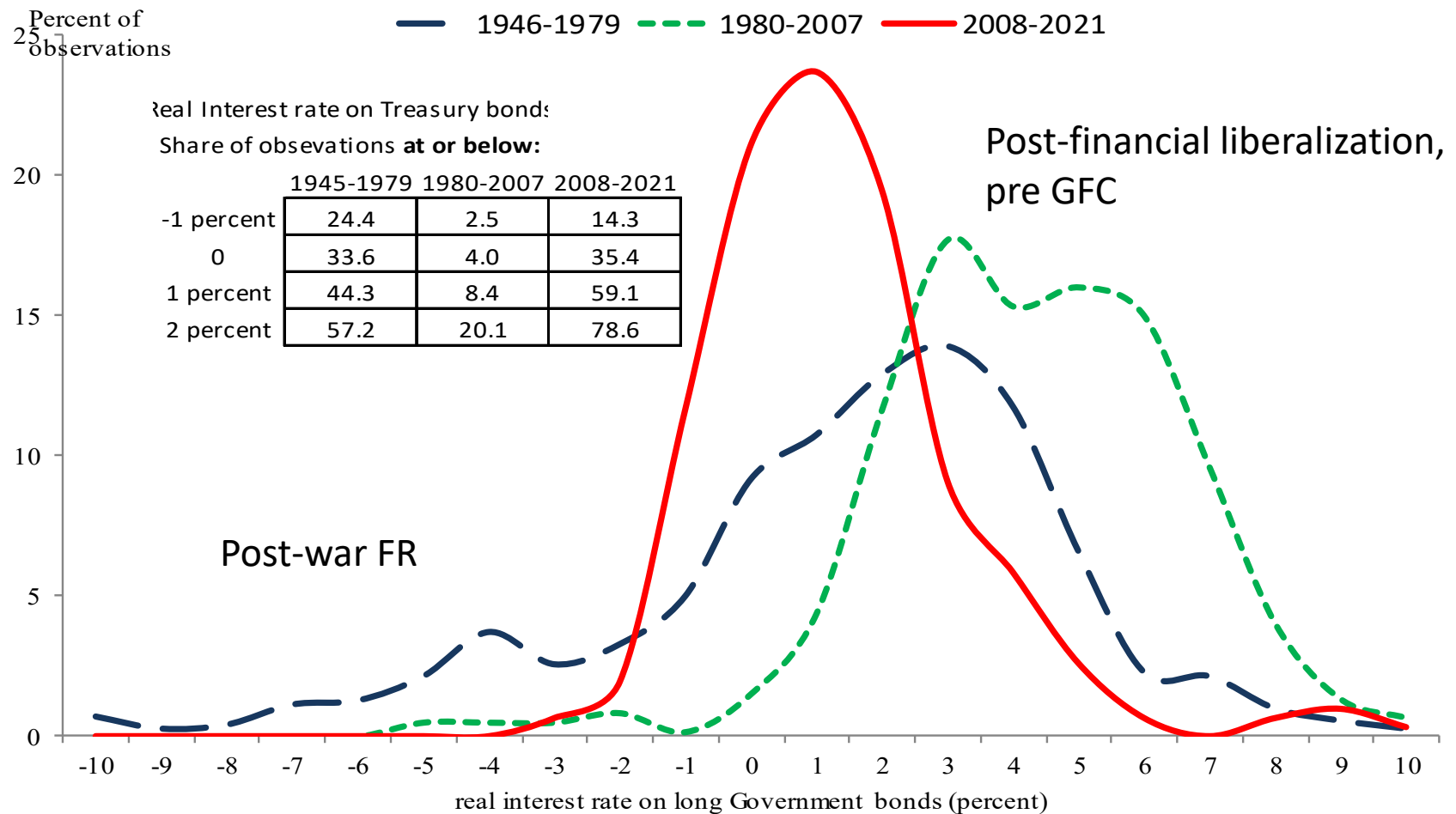


Sources: OECD, Reinhart and Sbrancia (2015) and sources cited therein.

Reinhart

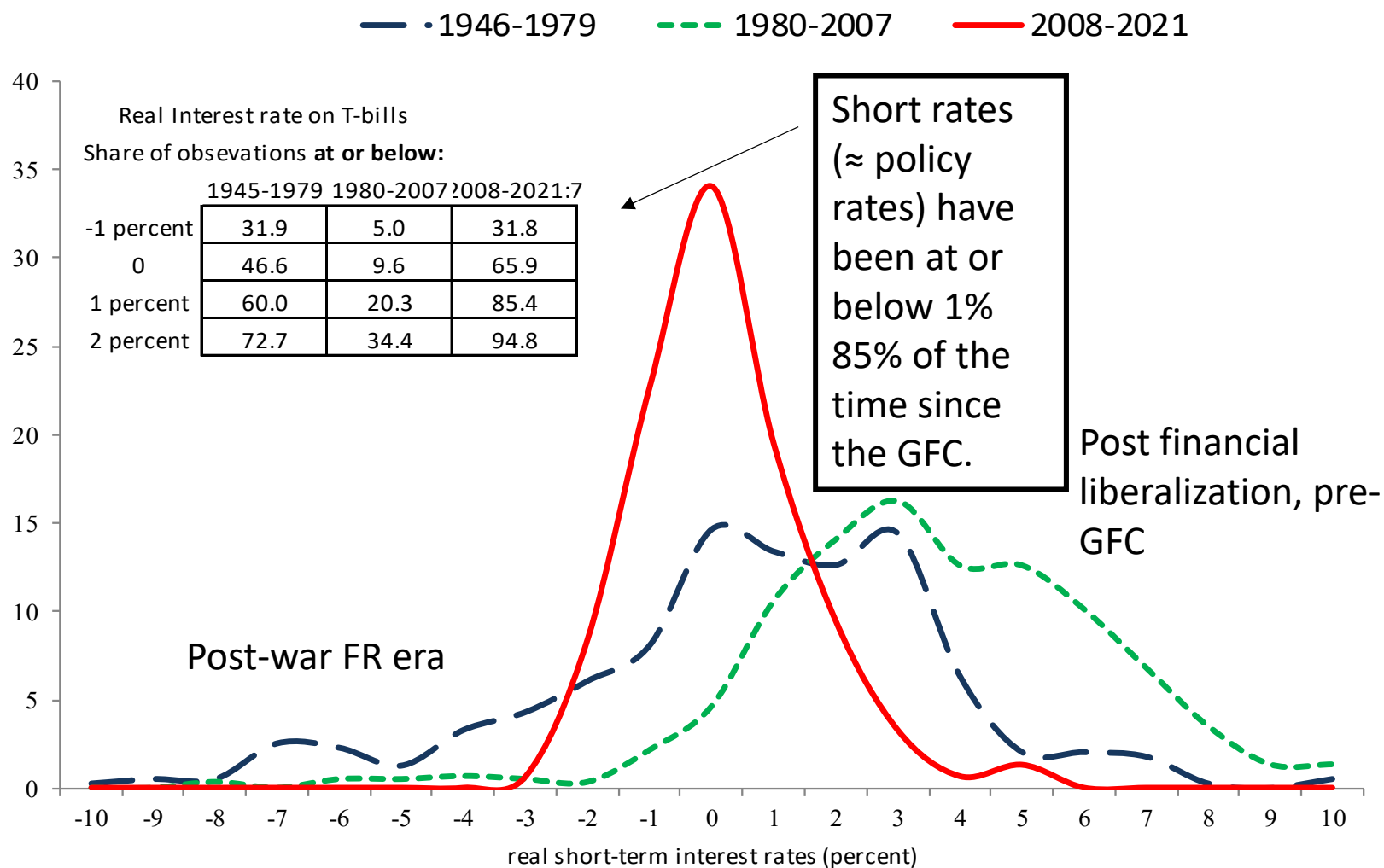


# Frequency distribution of long-term bond yields across three eras: Advanced Economies, 1945-2021



Sources: OECD, Reinhart and Sbrancia (2015) and sources cited therein.

# Frequency distribution of short-term interest rates across three eras: Advanced Economies, 1945-2021

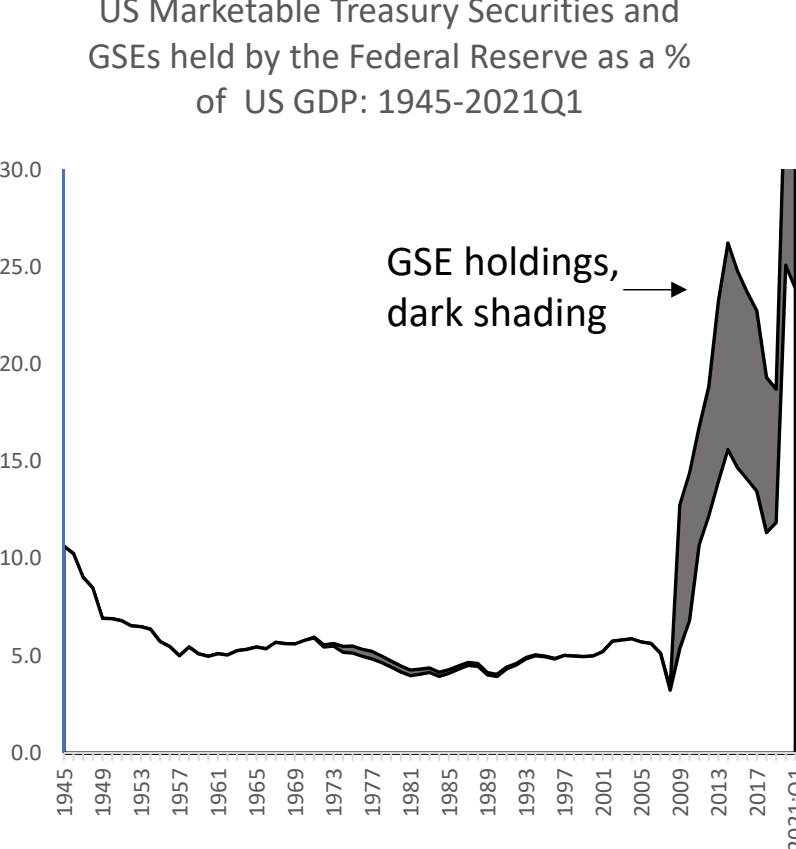
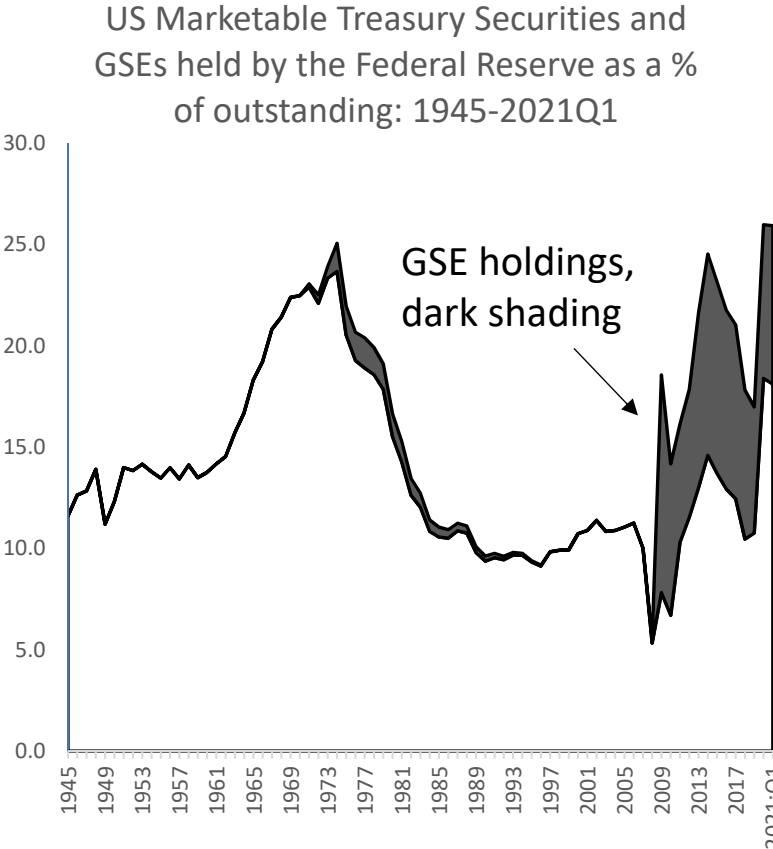


Sources: OECD, Reinhart and Sbrancia (2015) and sources cited therein.

# Some trends in central banking and government debt after the GFC and COVID-19

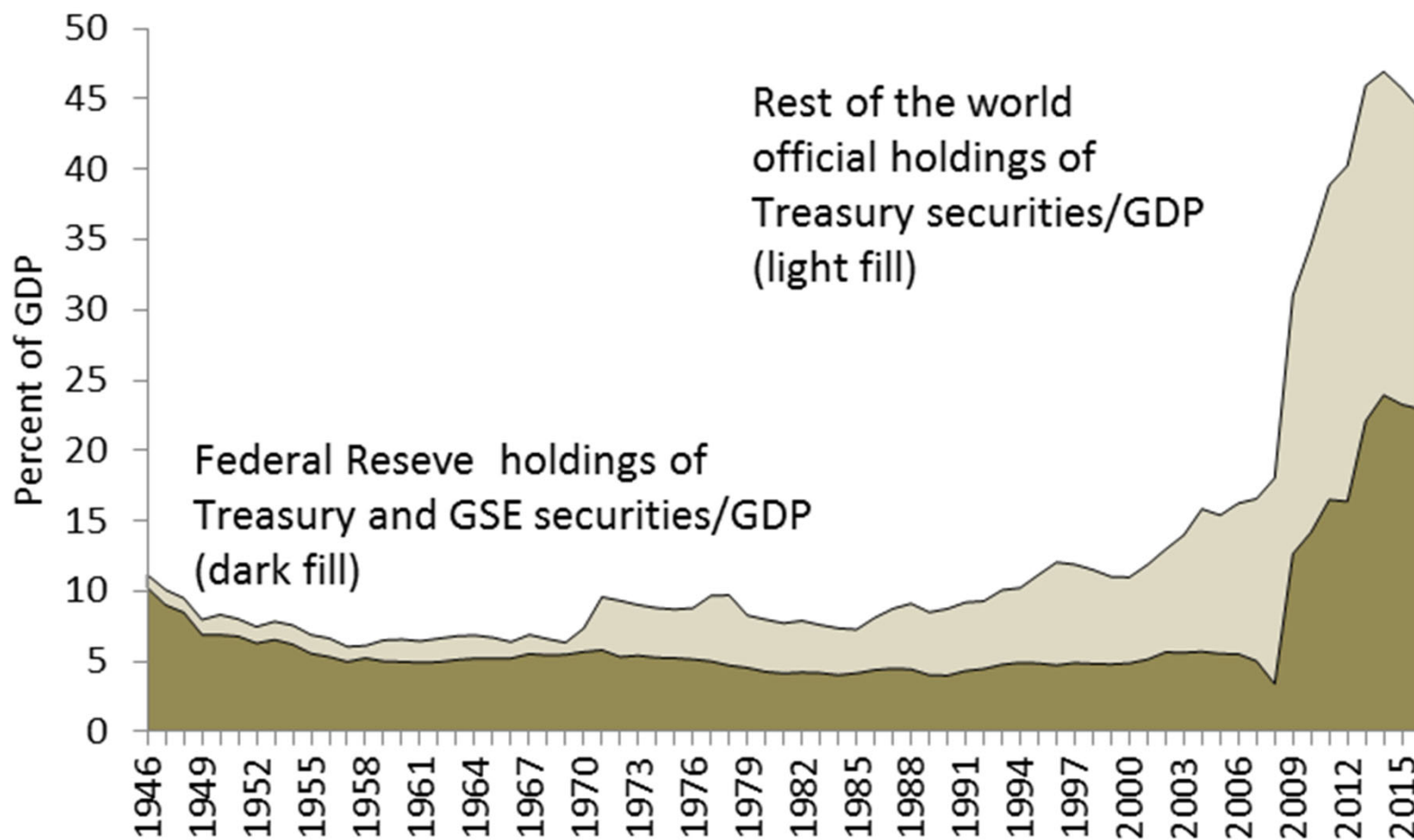
Focus on the CB footprint in financial markets and the sovereign-central bank nexus.

# Measures of the footprint of the Federal Reserve, 1945-2021Q1



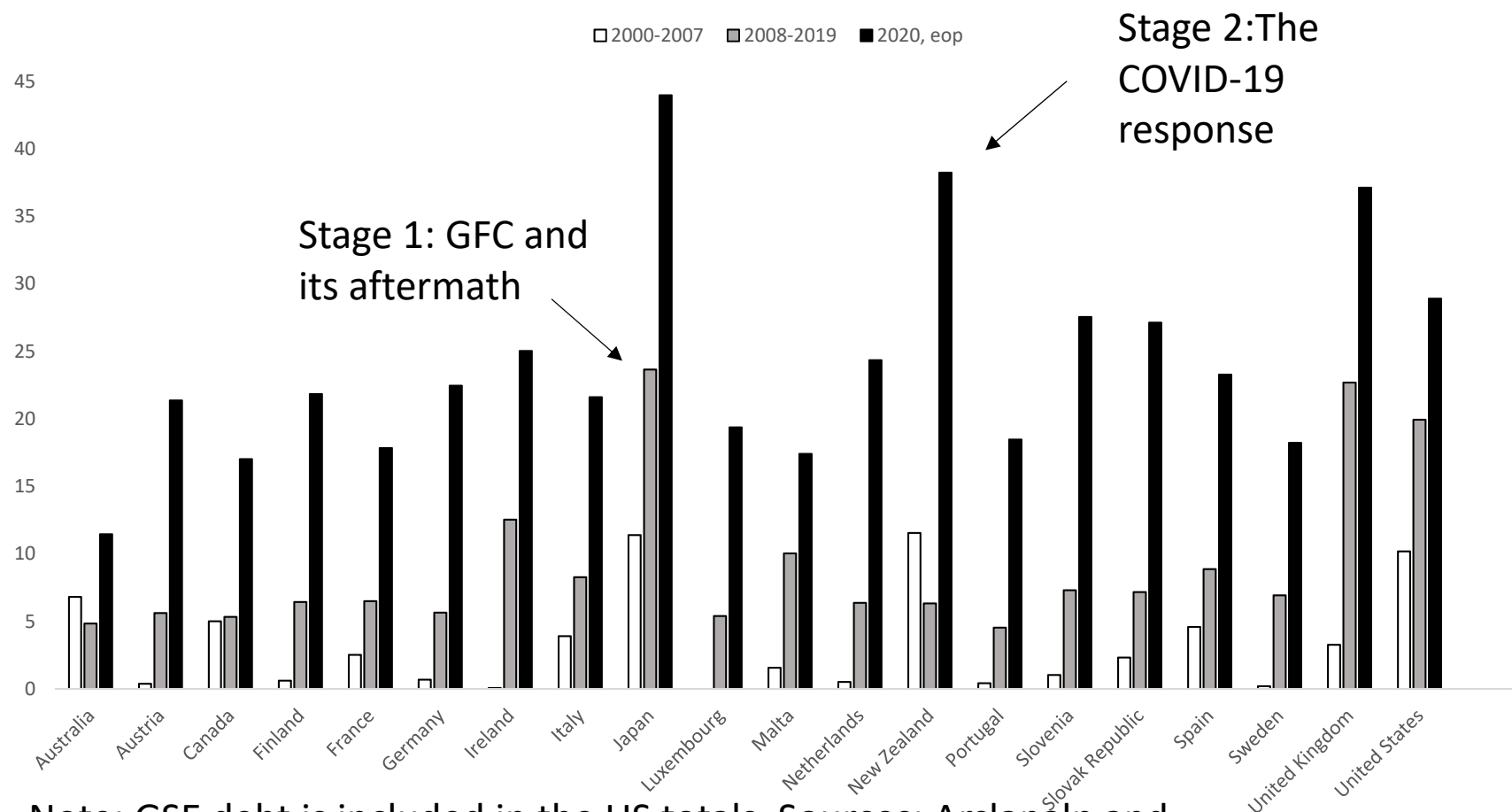
Sources: Board of Governors of the Federal Reserve and author's calculations.

Foreign CBs are also major. The combined effect of domestic and official players calls into question to what extent interest rates remain “market-determined”



# The two-step ratchet: the expanding role of central banks in Advanced economies (AEs), 2000-2020

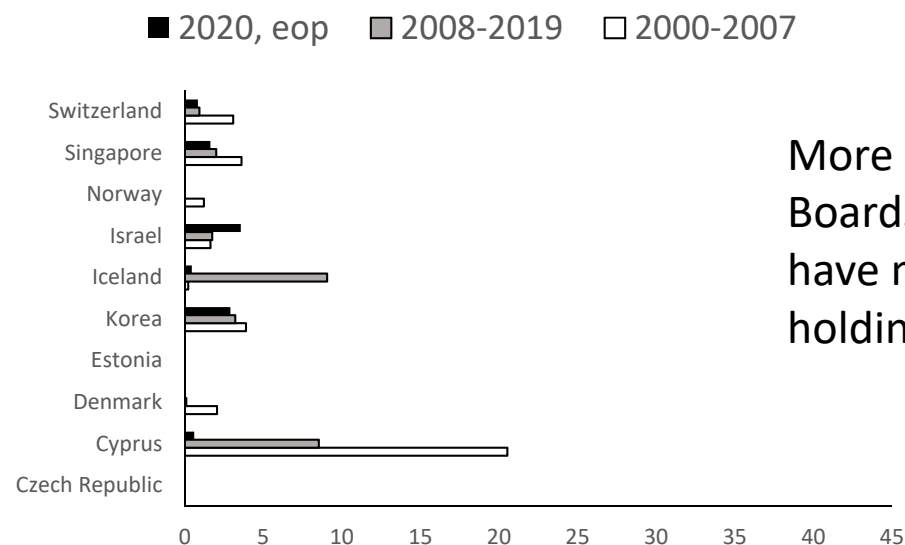
Central bank holdings of government debt as a % of outstanding debt stock



Note: GSE debt is included in the US totals. Sources: Arslanalp and Tsuda (2014a), Board of Governors of the Federal Reserve, and authors' calculations.

# The surge in government debt held by CBs is a dominant but not universal trend across AEs

Central bank holdings of government debt as a % of outstanding debt stock

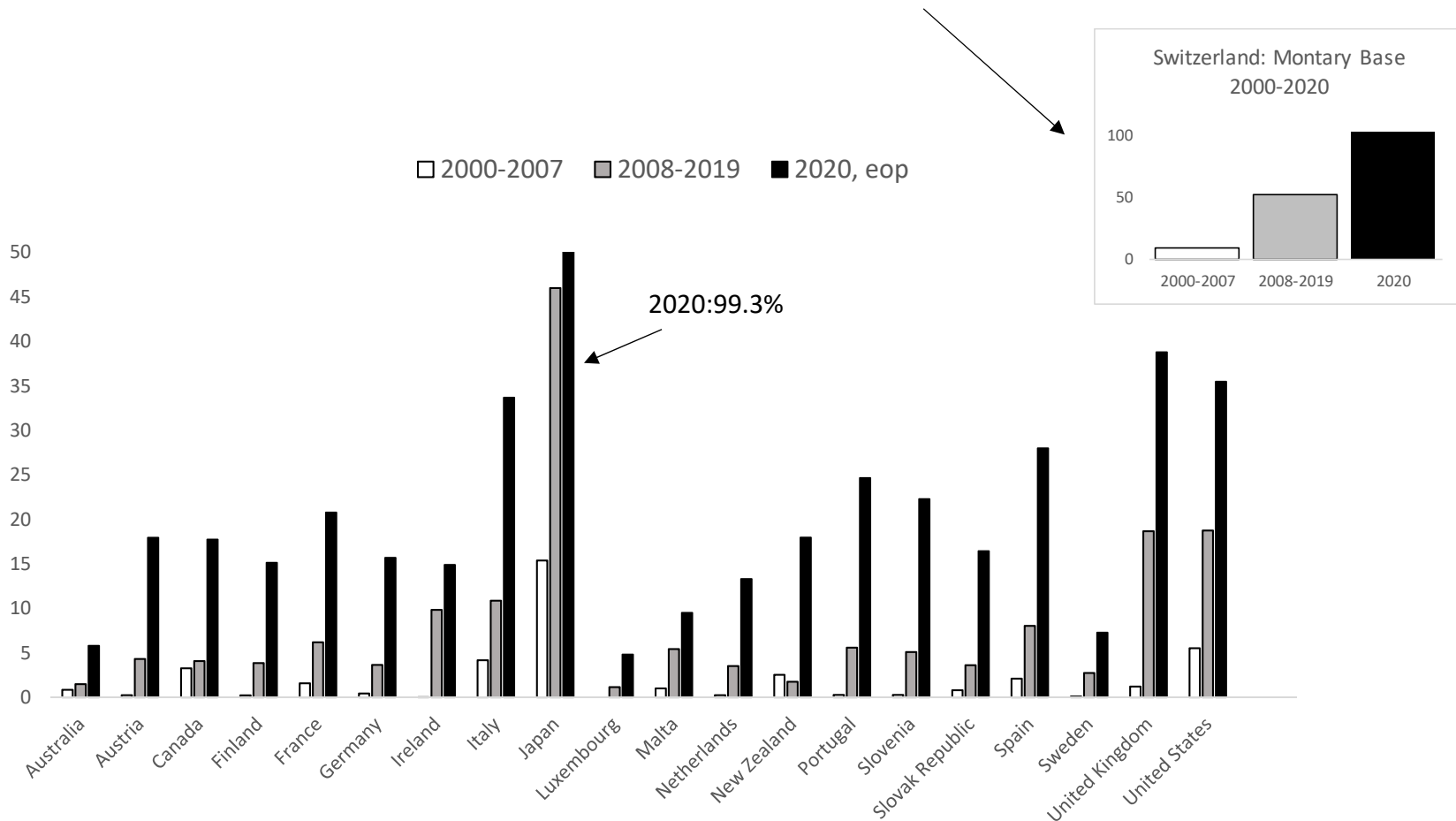


More akin to “classic” currency Boards, some central banks have maintained very low holdings of government debt.

The scale is the same as in the prior chart

Sources: Arslanalp and Tsuda ( 2014a) and authors’ calculations.

CB holdings of government debt as a % of GDP, 2000-2020 displays the same **two-step upward ratchet**. In Switzerland, the CB's expanding footprint is evident in base money (% GDP); which has gone from an average of  $\approx 8\%$  over 2000-2007 to over 100% in 2020

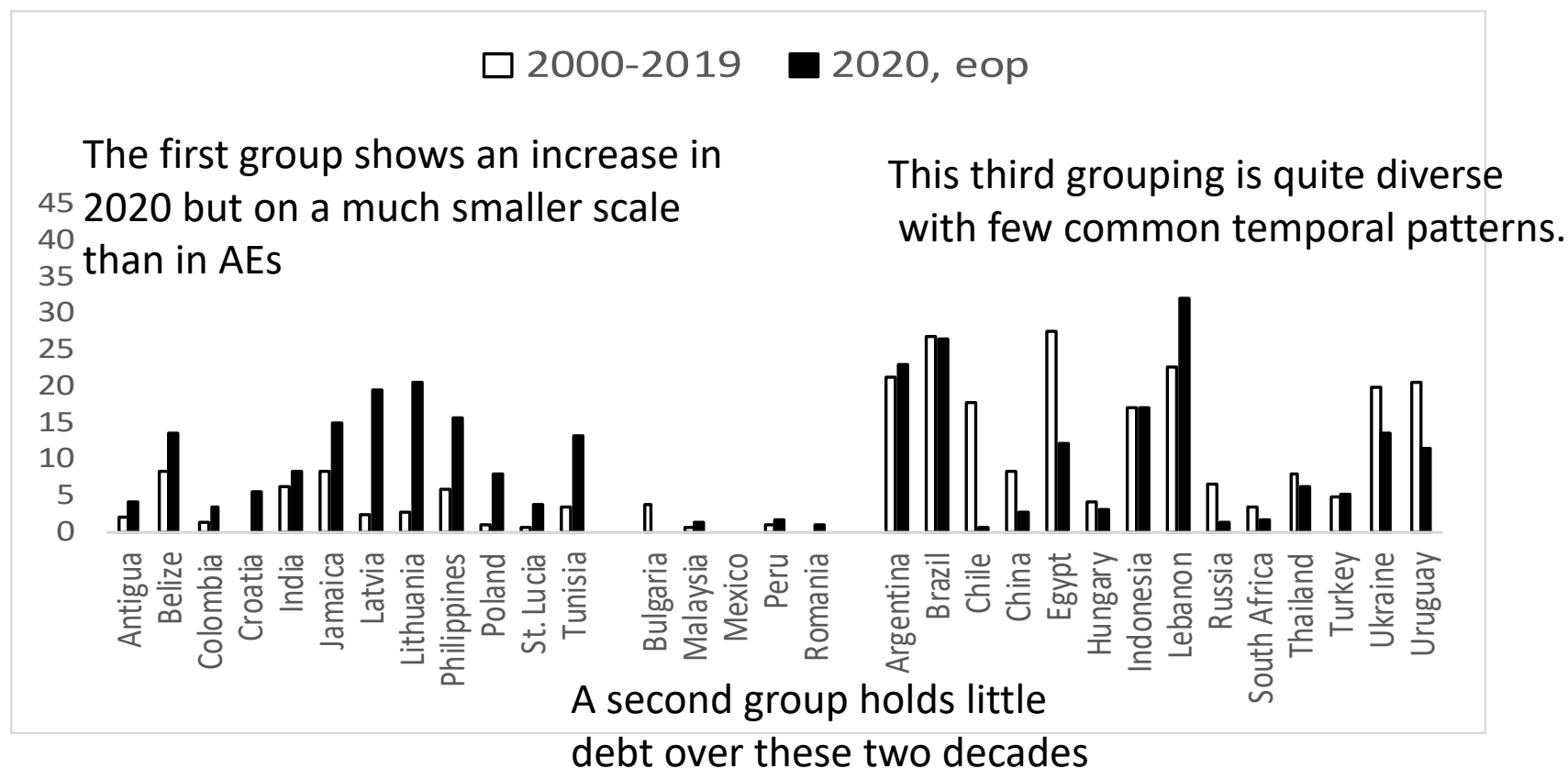


Sources: Arslanalp and Tsuda (2014a), Board of Governors of the Federal Reserve, and authors' calculations.



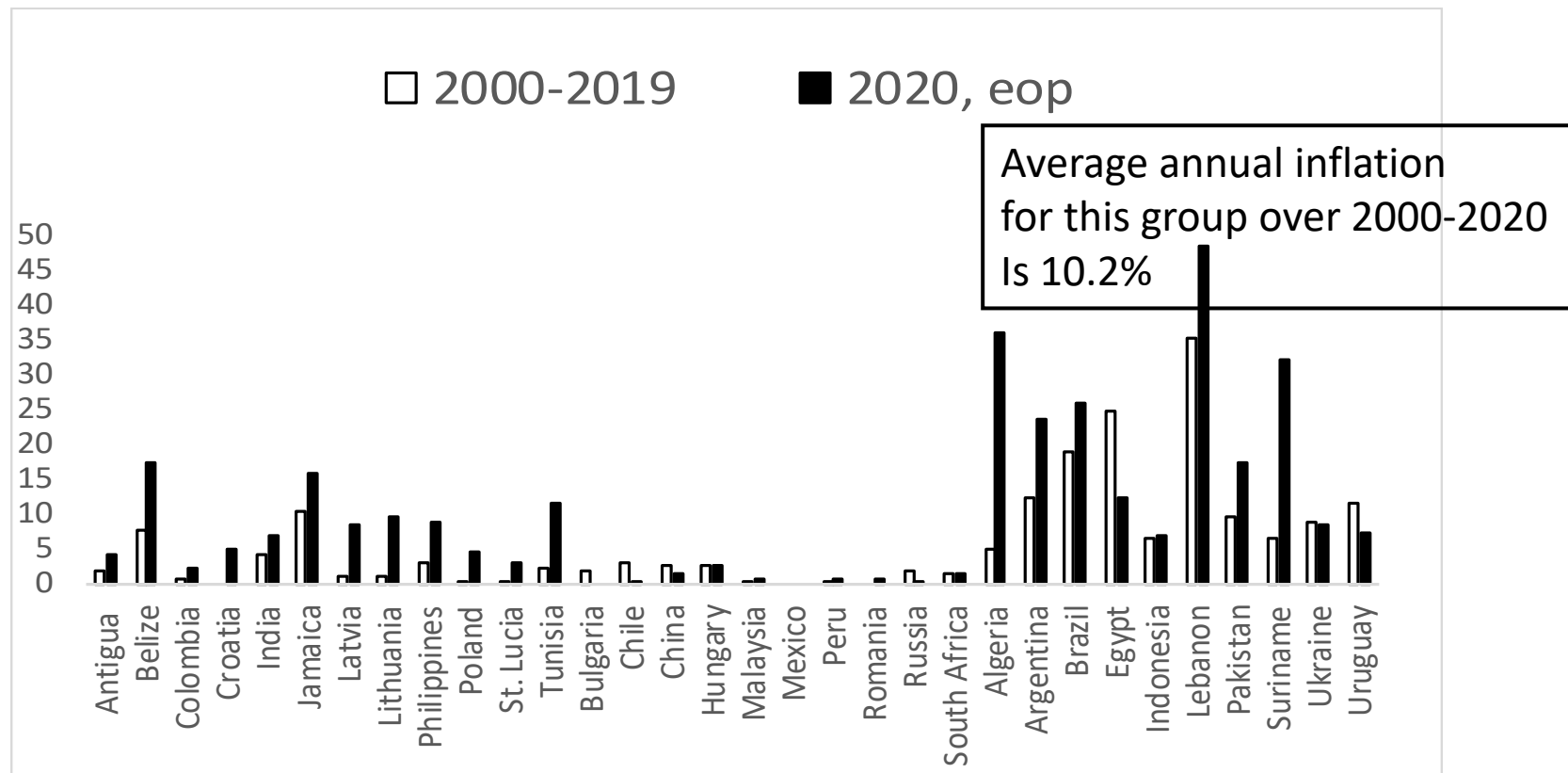
Among EM central banks, there is no generalized upward trend (or **ratchet effect**) in government debt holdings since the GFC and only selectively since the onset of COVID-19

CB holdings of government debt as % of outstanding debt stock



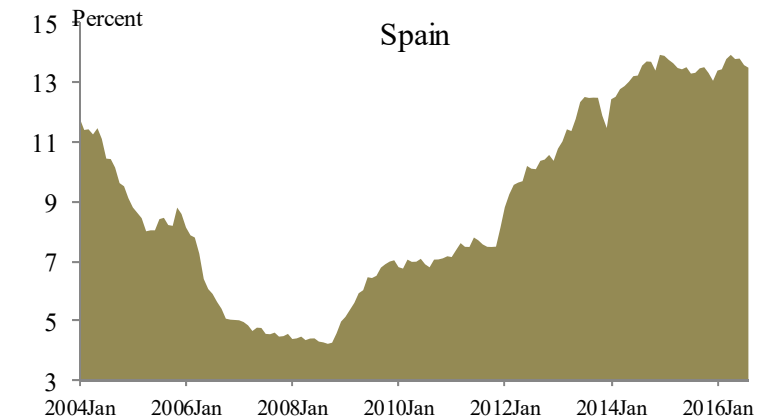
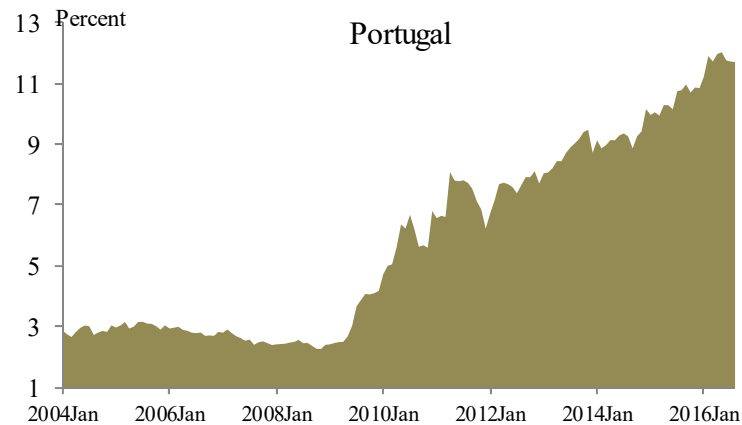
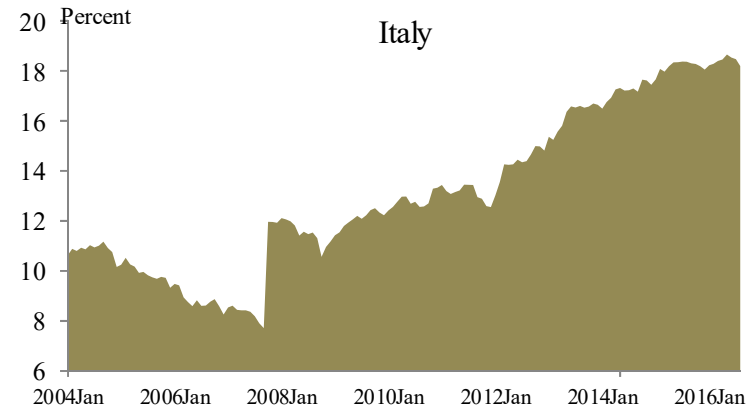
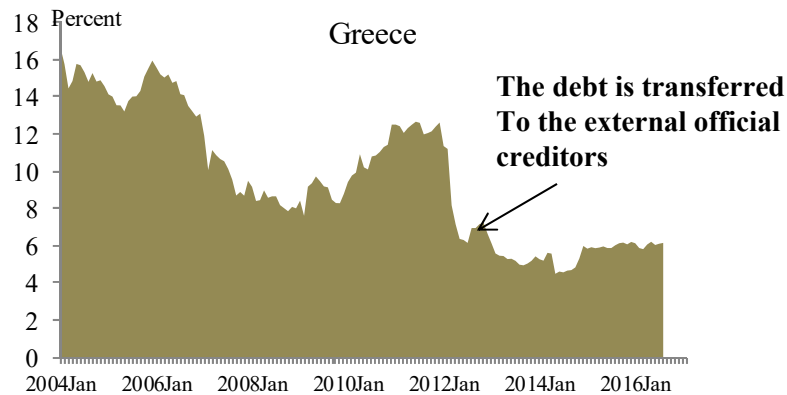
Sources: Arslanalp and Tsuda ( 2014b) and authors' calculations.

When scaled by GDP (rather than the stock of debt), the list of EM CBs with a small footprint is longer.



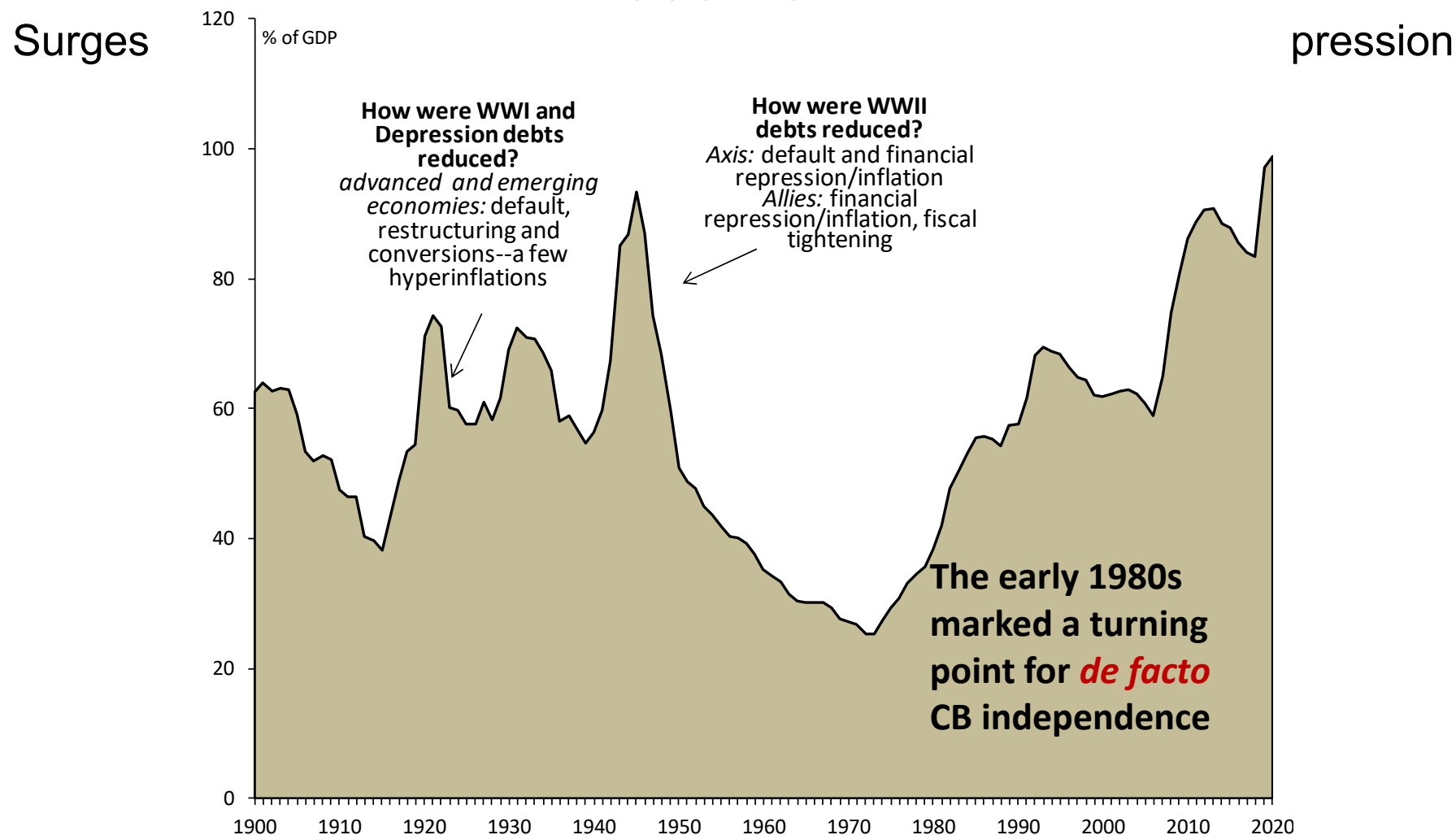
Sources: Arslanalp and Tsuda (2014b) and authors' calculations.

In the aftermath of the GFC in countries with limited capital market access, the reliance on domestic banks for funding the government rose significantly.\* It facilitates short-term funding but sets the stage for a “doom loop”



Source: European Central Bank, Statistical Data Warehouse. \*See Kirkegaard, Reinhart, and Sbrancia (2011).

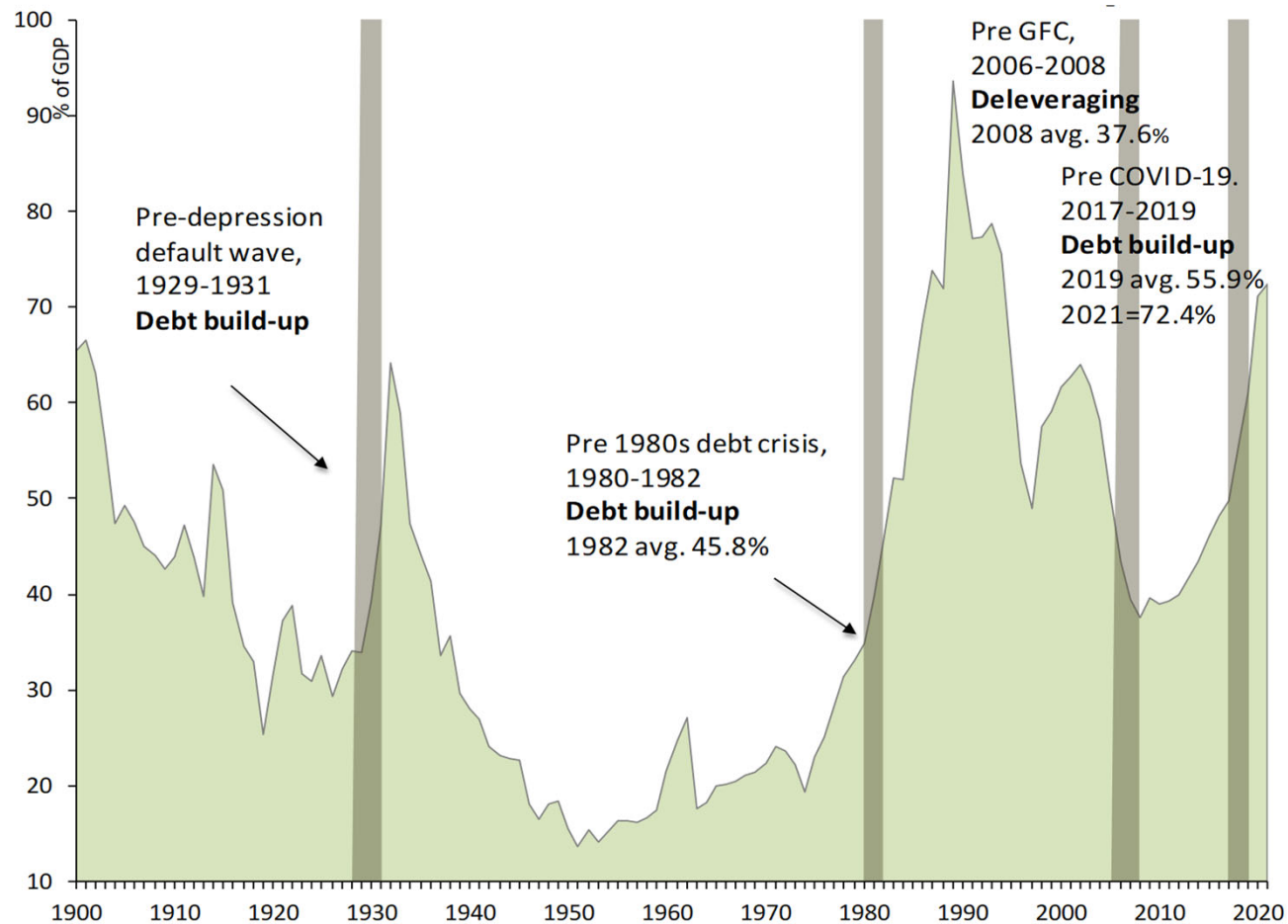
# Public debt as a % of GDP: Advanced Economies, 1900-2021



Sources: IMF, World Economic Outlook and Reinhart and Rogoff (2009, 2011) and sources cited therein.

While **EMDE debt levels** are well below AEs, many of these countries are *debt intolerant* and have encountered debt crises at lower levels than those in prevailing in 2021.

Unweighted average, 46 EMDEs 1900-2021



Sources: IMF, World Economic Outlook and Reinhart and Rogoff (2009, 2011) and sources cited therein

## Alternative approaches to debt reduction

*Throughout history, debt/GDP has been reduced by:*

- (i) economic growth;
- (ii) fiscal adjustment/austerity;
- (iii) explicit default or restructuring;
- (iv) a sudden surprise burst in inflation; and
- (v) a steady dosage of financial repression.

*Options (iv) and (v) are only viable for domestic-currency debts  
and have a great deal to do with the conduct of CBs.*

# **Financial Repression (FR) and *Financial Repression Noveau* (FRN), 2008-present**

Defining features of FR; regulation and  
macroprudential policies with a FR character

# Financial Repression

The term financial repression (FR) was introduced by Edward Shaw (1973) and Ronald McKinnon (1973). FR became a way of describing emerging market financial systems prior to the widespread financial liberalization that began in the 1980s (see Agenor and Montiel, 2008, Giovannini and de Melo, 1993, and Easterly, 1989).

Financial repression was also the norm for advanced economies during the post-World War II Bretton Woods era and, in varying degrees, up through the 1980s.



## **Financial repression usually involves a combination of:**

- (i) a large footprint of the official sector in financial markets;
- (ii) closer links between the government and the central bank (CB) ;
- (iii) heavier regulation of the financial sector;
- (iv) sustained low or negative real interest rates;
- (v) capital/foreign exchange controls.

# FR is an opaque tax

- **FR is a tax on bondholders and, more generally savers**
- **No legislation or public vote is required**
- **The tax on financial intermediaries is usually passed on to depositors and borrowers**
- **As such, FR has distributional consequences (not addressed here)**
- **Much of the literature FR has focused on concerns about the misallocation of resources.**

# Other features of FR

Directed credit has often accompanied FR. This includes directed lending to the government sometimes accompanied by:

Regulation to create or broaden captive domestic audiences (such as pension funds or domestic banks)

Explicit or implicit caps on interest rates,

Regulation of cross-border capital movements,

FR is characterized by a tighter connection between government and banks, either explicitly through public ownership of some of the banks, balance sheet exposure, or heavy “moral suasion”.

Financial repression was historically 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.

In the modern context, there is substantive overlap between FR and “macro prudential regulation.”

## More on the past role of regulation in FR

**Ceilings on interest rates**, including on government debt. Ceilings were implemented through:

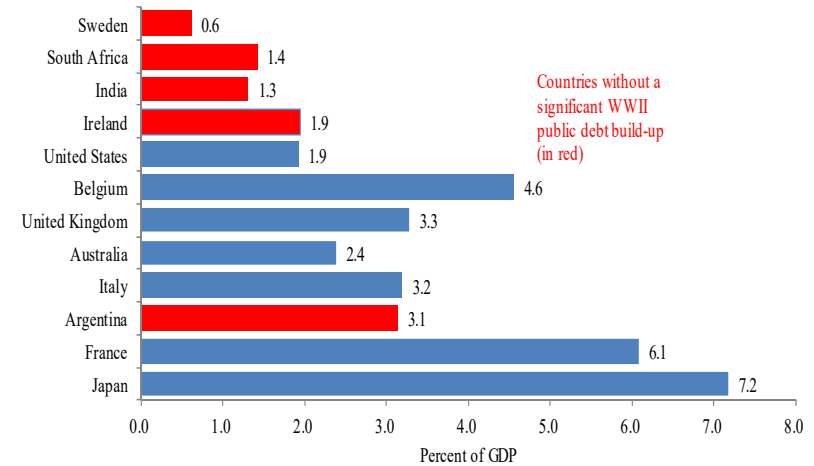
- (a) government regulation (i.e., Regulation Q in the US);
- (b) caps on banks' lending rates, a direct subsidy to the government in cases where it borrowed directly from the banks (loans versus securitized debt); and
- (c) interest rate cap via a fixed coupon rate on nonmarketable debt or
- (d) maintained through central bank interest rate targets (often at the directive of the Ministry of Finance).

*The BoJ's ceiling on the long bond is not "new."*

# The Liquidation of government debt: Reinhart and Sbrancia (RS), 2011 and 2015, in a nutshell

## Methodology

RS construct a “synthetic debt portfolio” for the government’s total debt. The “contractual interest rate (CIR) for a given year is the coupon rate on a debt instrument weighted by its share in the total stock of debt, aggregating across all debt instruments. **Main challenge:** Lack of a comparator “market or free” interest rate during the FR era. **Two approaches:** (1) compare the ex-post “real CIR” to hypothetical feasible scenarios of *real interest rates of 1-3%* over 1945-1980. Interest savings are the difference between the hypothetical “market” rate and the observed ex-post real rate on the debt for all years. The tax base is the level of domestic debt outstanding. (2) lower bound estimate: The ex-post debt-reduction for the government or *“liquidation effect”* is the real (negative) interest rate times the tax base. The estimated savings under the three simulation scenarios and the outright liquidation are expressed as a % of nominal GDP and total receipts (or total government revenues).



## Main findings

For the AEs in the RS sample, real interest rates were negative  $\approx \frac{1}{2}$  of the time during 1945-1980.

FR was most successful in liquidating debts when coupled with a steady dose of inflation.

Average annual interest expense savings as a % of GDP (FR tax) are clustered in the range of 1 to 5% of GDP for 1945-1980.

# Key takeaways from RS

In the heavily regulated financial markets of the Bretton Woods, low or negative real rates in conjunction with a plethora of financial restrictions facilitated (along with fiscal measures and growth) a sharp and rapid reduction in public debt/GDP ratios from the late 1940s to the 1970s.

Low nominal interest rates reduced debt servicing costs while a high incidence of negative real interest rates liquidated the real value of government debt.

## Is FR a viable option for AEs?

**Stocktaking:** Based on the preceding review of 2000-2021 trends, FR (not a replica of the Bretton Woods version but FRN) is well underway and intensifying post COVID-19...

Perhaps the previous question was rhetorical.

	FR checklist	
i	a larger footprint of the official sector (government, CB or both) in financial markets	✓
ii	closer links between the government and the CB	✓
iii	heavier regulation of the financial sector*	✓
iv	Sustained low or negative interest rates (Noveau version of FR includes negative nominal interest rates)	✓
v	Tighter capital/foreign exchange controls	X

\* See Reinhart (2011).

# An FR discussion

- FR can deliver gradual debt erosion (1-2 percent of GDP a year was commonplace during 1945-1980) provided inflation is positive. Importantly, provided ongoing deficits are not bigger than the FR tax.
- Higher levels of debt erosion usually occur in conjunction with inflation spikes.
- Impacts of distributional effects from savers to borrowers need to be examined (including intergenerational transfers). FR is a tax.
- FR may be helpful in reducing rollover risks in an era of high debt—as expanding captive audiences is a key part of the strategy.
- While FR (other things equal) improves the government's balance sheet, it creates or aggravates existing off-balance sheet losses. Pension fund solvency (including those of local governments) benefit from high rates of return.
- A similar statement applies to contingent liabilities associated with financial intermediaries. These are far larger than in post-war era.
- FR is not a substitute for fiscal discipline or reforms if these are needed. FR, in effect may facilitate delay.
- FR may delay adjustment encourage over-borrowing by both government and the private sector, and fuel risk taking in the search for yield.
- For very high debt cases, it is not a substitute for debt restructuring, which can (at least in principle) deliver faster and larger debt reduction.



# FR and central banks

Does FR erode CB independence? Not necessarily *de jure* but very possibly *de facto*

If a protracted period of low (negative) interest rates encourages risk taking and leverage (public and private), do financial stability/balance sheet concerns tilt policy toward continued accommodation?

If a protracted period of low (negative) interest rates fuels asset price bubbles, do “market crash” fears tilt policy toward continued accommodation?

At high levels of government debt, are CBs under greater political pressure to maintain an accommodative stance (as was the case during the aftermath of WWII)?

If there are concerns about potential sovereign insolvencies (an issue for the ECB) do such concerns tilt the bias of toward accommodation?

If large neighbors engage in FRN, is fear of floating or fear of appreciation (a la Calvo-Reinhart) bias toward policy accommodation?

Does not some combination of the above introduce (re-enforce) an asymmetry between easing and tightening?

**It is easier to ratchet-up financial repression (or its *nouveau* incarnation) than it is to exit from it. It took some years of sustained high inflation last time.**

# References

- Agenor, Pierre-Richard and Peter J. Montiel (2008). *Development Macroeconomics*, 3rd edition, Princeton University Press, Princeton.
- Arslanalp, Serkan and Takahiro Tsuda (2014a). "Tracking Global Demand for Advanced Economy Sovereign Debt" *IMF Economic Review*, Volume 62, Number 3, Washington DC.
- Arslanalp, Serkan and Takahiro Tsuda a (2014b) "Tracking Global Demand for Emerging Market Sovereign Debt", IMF Working Paper WP/14/39, Washington, DC.
- Board of Governors of the Federal Reserve, (2021) *Flow of Funds*, June.
- Brunner, Karl and Alan Meltzer (1972). "Money, Debt, and Economic Activity," *Journal of Political Economy*, Vol. 80 (5), September, 951-977.
- Calvo, Guillermo A. and Carmen M. Reinhart, (2002). "Fear of Floating," *Quarterly Journal of Economics*, Vol. CXVII(2), May, 379-408,
- Easterly, W. R. (1989). 'Fiscal adjustment and deficit financing during the debt crisis', in I. Husain and I. Diwan (eds), *Dealing with the Debt Crisis*, The World Bank, Washington, DC, 91–113.
- European Central Bank, Statistical Data Warehouse.
- Giovannini, Alberto and M. de Melo (1993). 'Government revenue from financial repression', *American Economic Review*, 83, 953–63.
- International Monetary Fund, *World Economic Outlook*, April 2021.
- Kirkegaard, Jacob, Carmen M. Reinhart and Belen Sbrancia (2011). "Financial Repression Redux", *Finance and Development* Vol. 48(2), June.
- McKinnon, R. I. (1973). *Money and Capital in Economic Development*, Brookings Institute, Washington, DC.

# References

OECD, (2021). [https://www.oecd-ilibrary.org/finance-and-investment/interest-rates/indicator-group/english\\_86b91cb3-en](https://www.oecd-ilibrary.org/finance-and-investment/interest-rates/indicator-group/english_86b91cb3-en)

Reinhart, Carmen M. (2012) “The Return of Financial Repression”, *Banque de France Financial Stability Review*, No. 16, April, 37-48.

Reinhart, Carmen M., Vincent R. Reinhart, and Christoph Trebesch (2016). “Global Cycles: Capital Flows, Commodities, and Sovereign Defaults, 1815-2015,” *American Economic Review*, Vol. 106(5), May, 574-580.

Reinhart, Carmen M. and Belen Sbrancia, (2011 and 2015) “The Liquidation of Government Debt,” Sbrancia), NBER Working Paper 16893, March 2011. *Economic Policy*, Vol. 30(82), March 2015, 291-333.

Reinhart, Carmen M., Vincent R. Reinhart, and Kenneth Rogoff (2015). “Dealing with Debt,” *Journal of International Economics*, Vol. 86(1), April, 543-555.

Reinhart, Carmen M. and Kenneth Rogoff (2009). *This Time Is Different: Eight Centuries of Financial Folly* . (Princeton: Princeton University Press, September).

Reinhart, Carmen M. and Kenneth Rogoff (2011) “From Financial Crash to Debt Crisis,” *American Economic Review*, Vol. 101(5), August, 1676-1706.

Shaw, Edward S. (1973) *Financial Deepening in Economic Development*, Oxford University Press, New York.