

FINANCIAL REPRESSION IN THE XXIST CENTURY

Mundell Fleming Lecture

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POLITICAL SCIENCE ■

Public debt

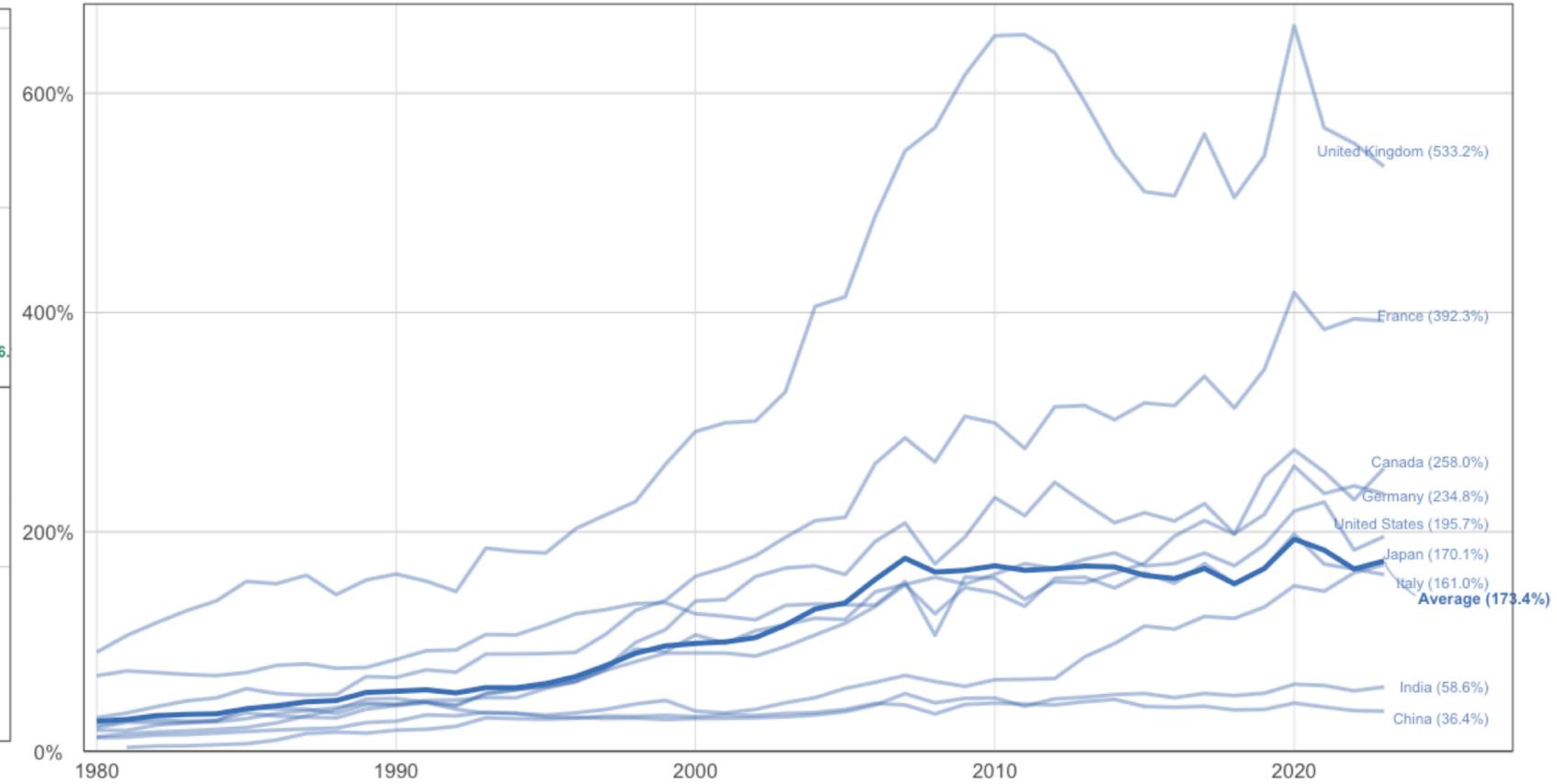
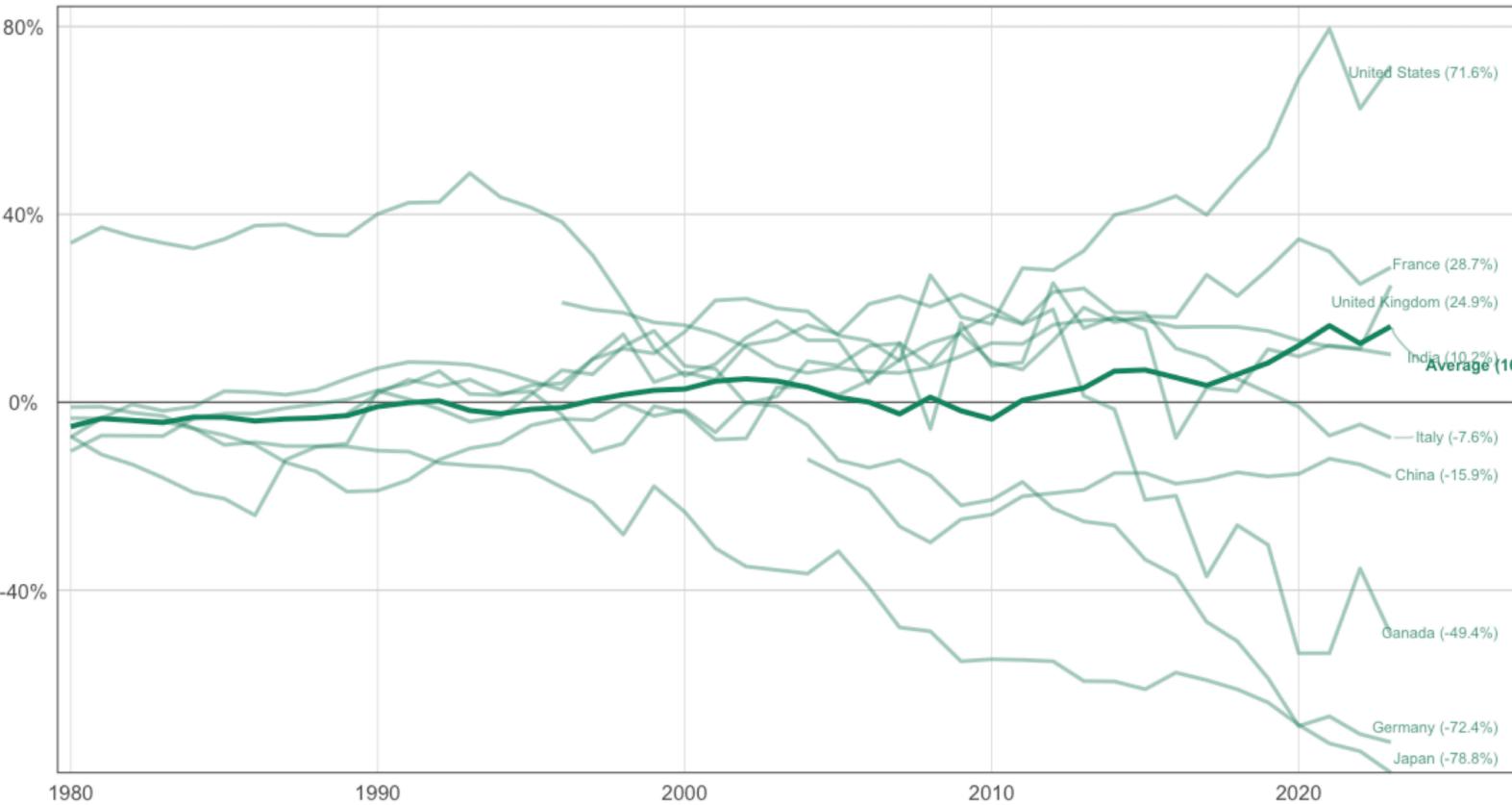
Table 1.2. General Government Debt, 2019-30
(Percent of GDP)

	2019	2020	2021	2022	2023	2024	Projections					
							2025	2026	2027	2028	2029	2030
Gross Debt												
World¹	83.8	98.9	94.0	89.9	91.3	92.3	95.1	96.7	97.5	98.2	98.9	99.6
Advanced Economies	103.6	122.0	115.5	109.3	108.2	108.5	110.1	110.9	111.5	112.0	112.6	113.3
Advanced Economies excl. US	100.4	114.8	109.1	101.7	99.5	98.4	99.7	100.2	100.2	100.4	100.4	100.7
Canada ²	90.2	118.1	112.6	104.2	107.7	110.8	112.5	110.9	109.4	107.9	106.2	104.1
Euro Area	83.6	96.5	93.9	89.5	87.4	87.7	88.7	89.7	90.4	91.1	91.9	92.9
France	98.1	114.8	112.7	111.3	109.7	113.1	116.3	119.1	121.6	123.9	126.1	128.4
Germany	58.7	68.0	68.1	65.0	62.9	63.9	65.4	67.0	68.5	70.4	72.5	74.8
Italy	133.8	154.3	145.7	138.3	134.6	135.3	137.3	138.5	138.6	138.2	137.7	137.7
Spain	97.6	119.2	115.6	109.4	105.0	101.8	100.6	99.0	97.6	96.0	94.5	93.0
Japan	236.4	258.4	253.7	248.3	240.0	236.7	234.9	233.7	232.1	231.2	231.1	231.7
United Kingdom	85.7	105.8	105.1	99.6	100.4	101.2	103.9	105.4	106.1	106.5	106.5	106.1
United States ²	108.2	132.0	124.7	118.8	119.0	120.8	122.5	123.7	124.9	125.9	127.0	128.2
Emerging Market and Developing Economies	54.5	64.1	63.2	63.4	67.4	69.5	73.6	76.7	78.4	79.7	80.9	82.0

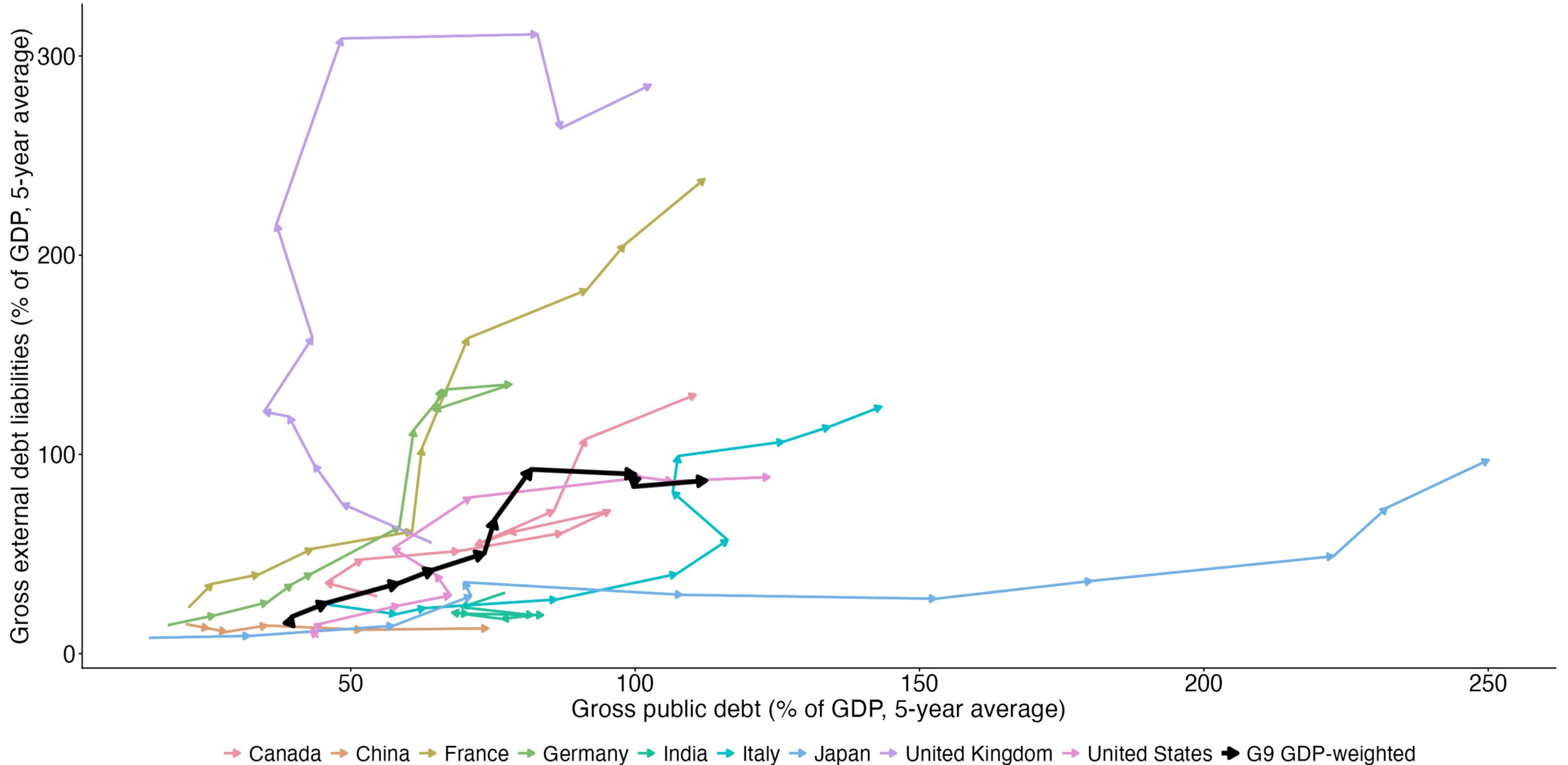
External debt

Net International Liabilities / GDP

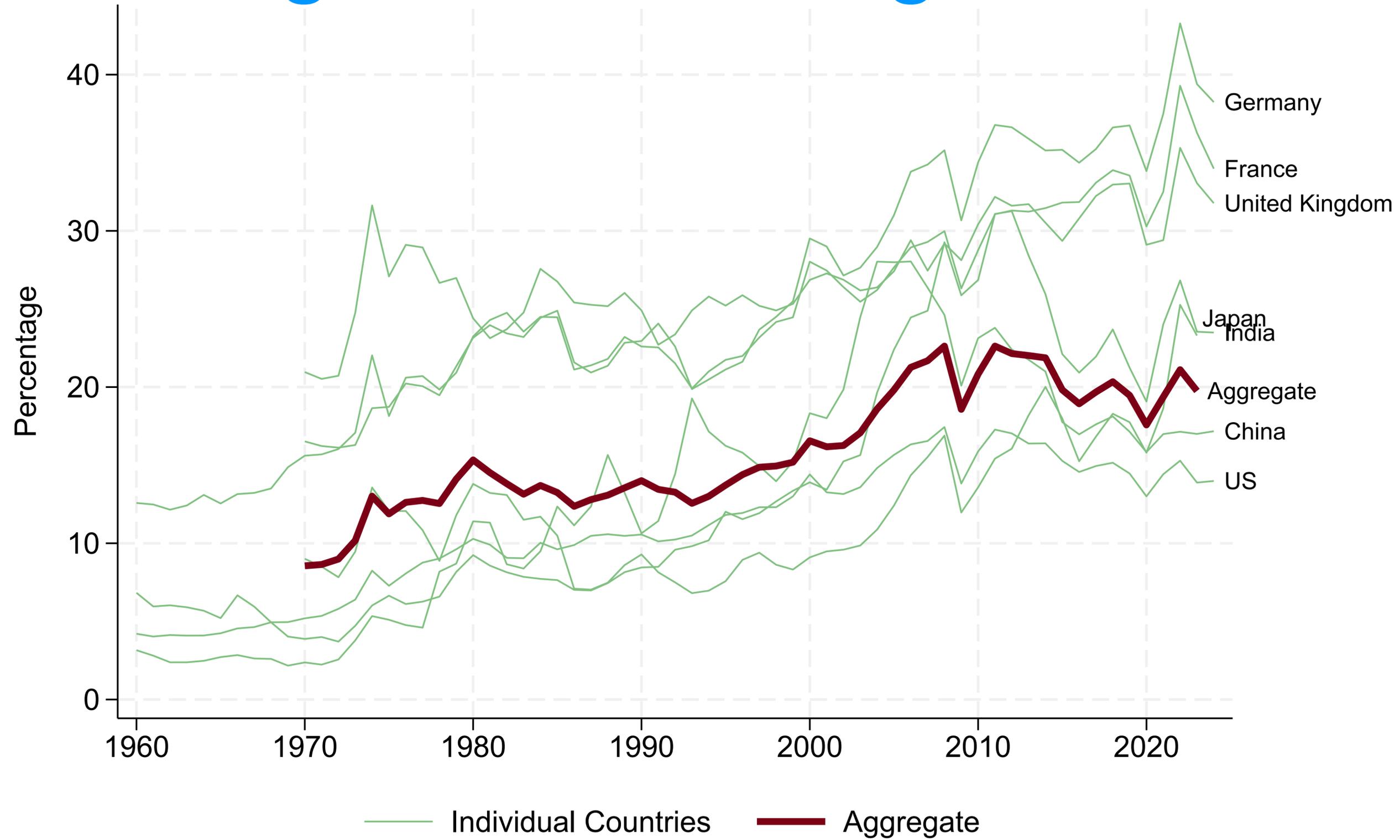
Gross liabilities / GDP



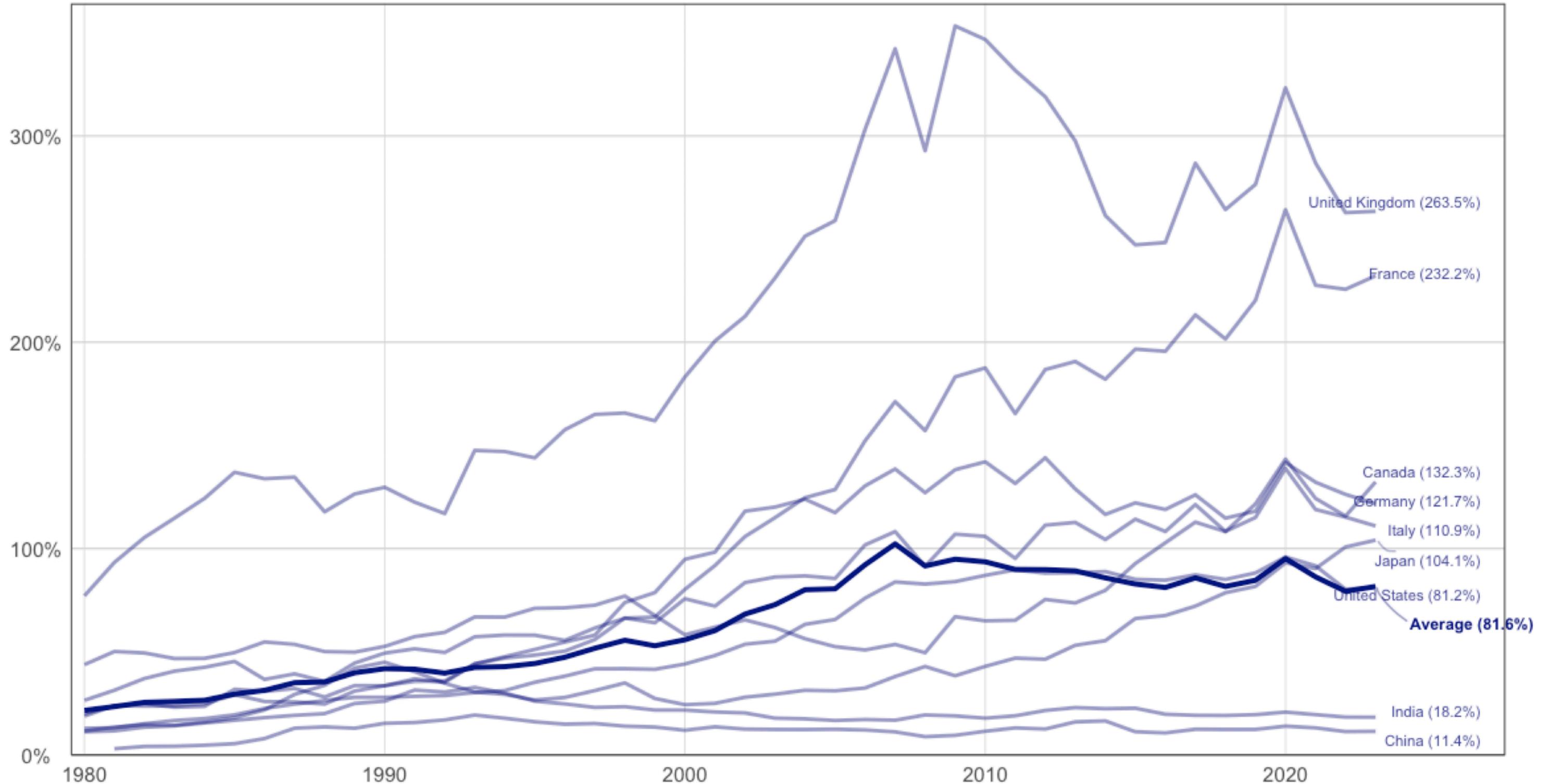
The twin debt problem



Tax the foreigners! Sellers of goods (Imports / GDP)



Tax the foreigners! The creditors (Gross debt liabilities / GDP)



Source: Lane Milesi-Ferretti (2018)

This lecture

- *Financial repression policies:*
 - Policies that reduce the twin debts—they loosen the budget constraints in terms of the required surpluses to service the debt—by transferring resources from holders of public or external debt to the domestic government or economy.
- *Outline:*
 - Perspective: debt sustainability analysis
 - Three types: net income, valuation, debt services
 - Assess their current revenues, potential for more
 - A few recent examples and implications for international monetary system
 - Relative to literature: narrower than McKinnon-Shaw, broader than discounts in Giovannini-de Melo-Reinhart, focus on the outcomes rather than tools (like doom loop), excluding default and no welfare analysis

Conceptually, budget constraints

- Accounting:

$$\Delta \text{ Net liabilities} = \text{Net payouts from liabilities} - \text{Net Income}$$

- Economics:

No Ponzi scheme on the liabilities

- Then:

$$\text{Debt} = \text{EPV (net income)}$$

+ fall in market value of the debt

+ EPV (discounts on debt returns)

Debt =

EPV(of primary surpluses)

+ Market devaluation of the liabilities

+ EPV (discounts on public liabilities)

- Public or External
- Conventional term
 - Primary surplus or trade balance + transfers
- Capital gains and losses
 - Unexpected inflation or depreciations
- Often ignored
 - Discount in returns because of service provided, e.g. seignorage from currency
 - Convenience yield, exorbitant privilege

The three classes of financial repression

Debt = EPV (net income)

– change in market value

+ EPV (discounts)

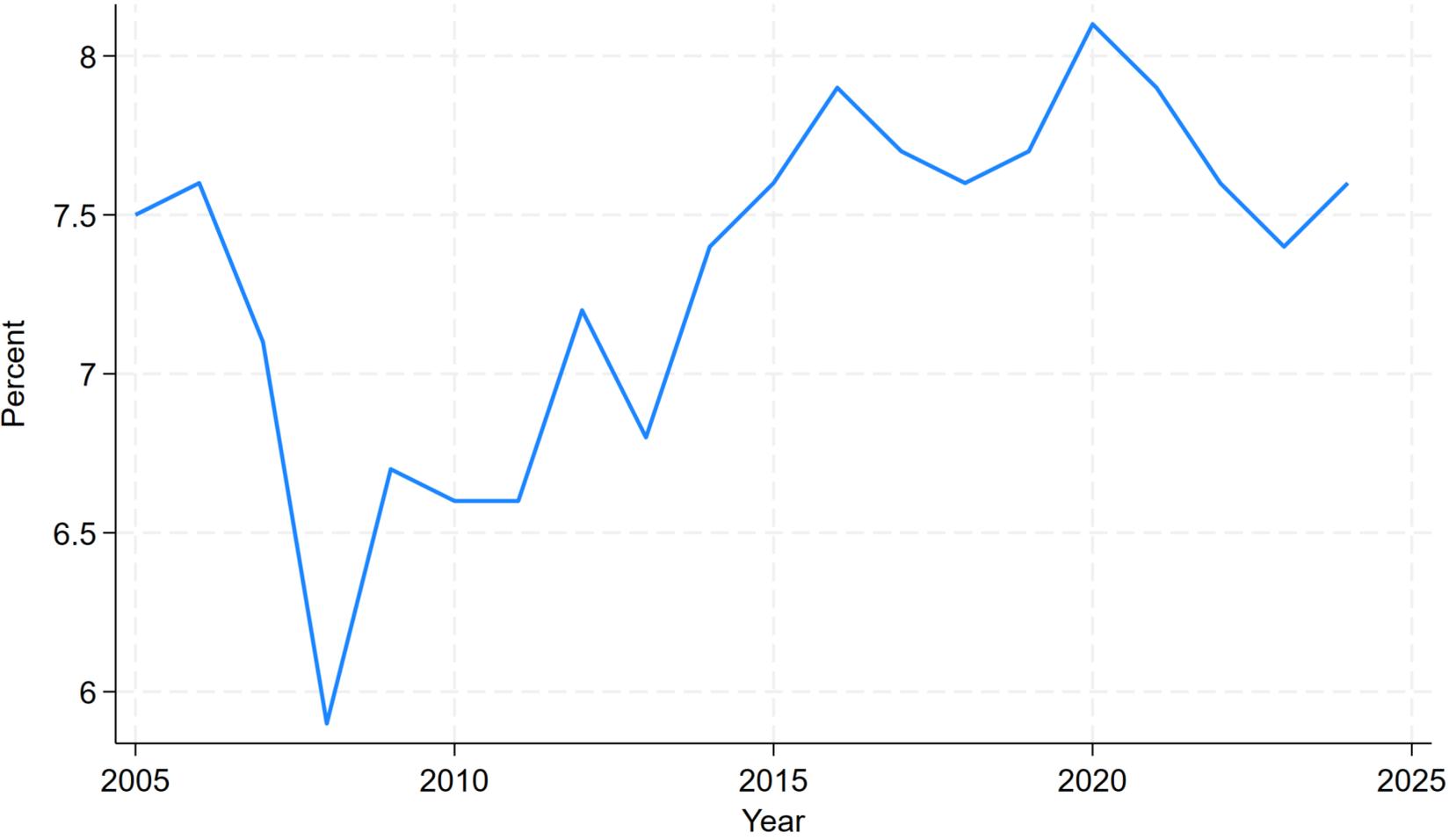
- Taxes that raise resources flow directly from the debt holders
- Surprise devaluation that raises resources proportionately to stock of debt.
- Services flow proportional to stock from regulations that boost demand and scarce supply

• Zero benchmark:

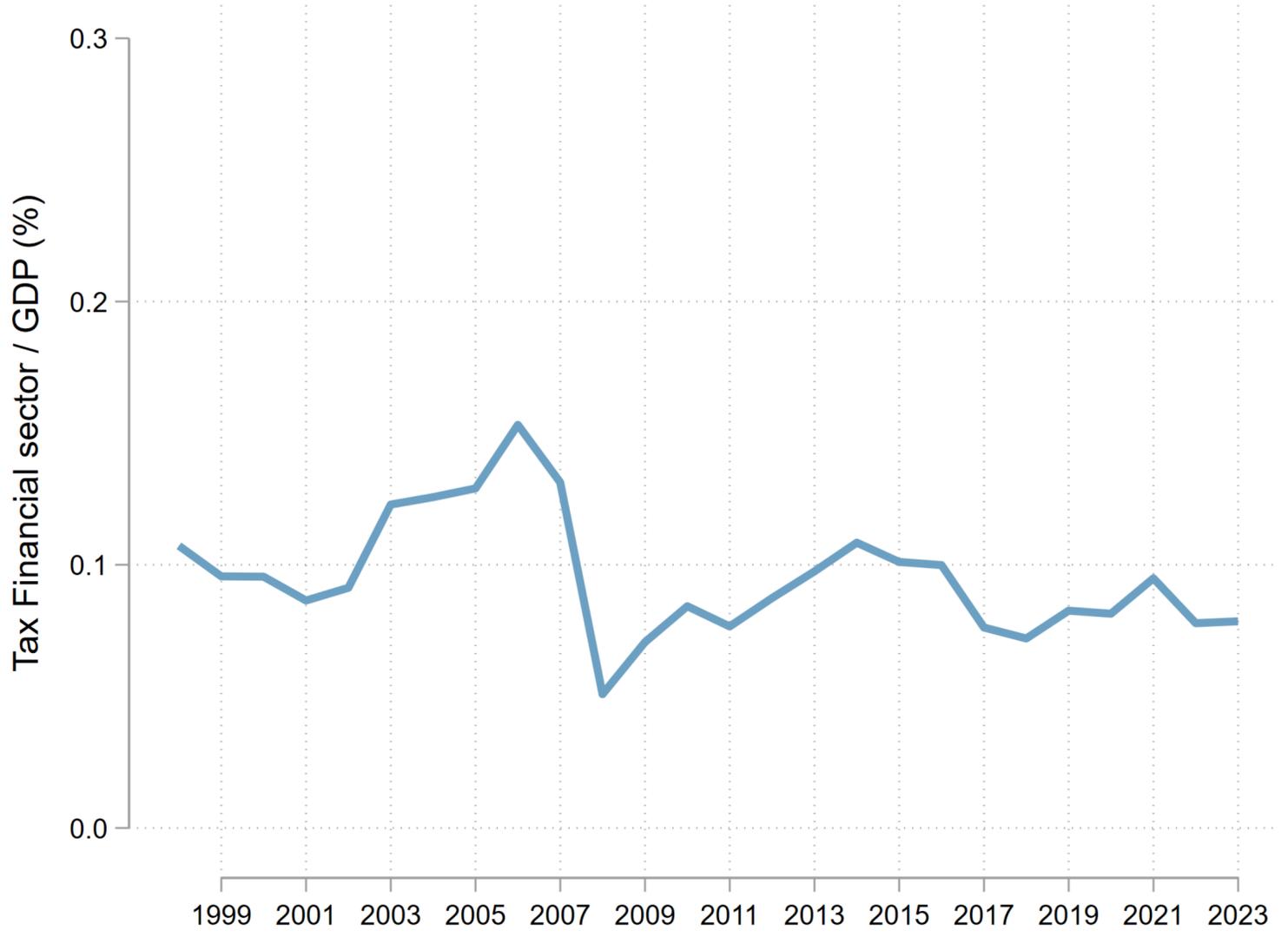
- *ad valorem* tax on returns raises first term, but lowers third term
- Permanent increase in value of flow of service raises third term, lowers second term
- Competitive lenders, no surprises, entry into supply of scarce services

Surpluses: taxing the VA of the financial sector

US financial sector value added / GDP

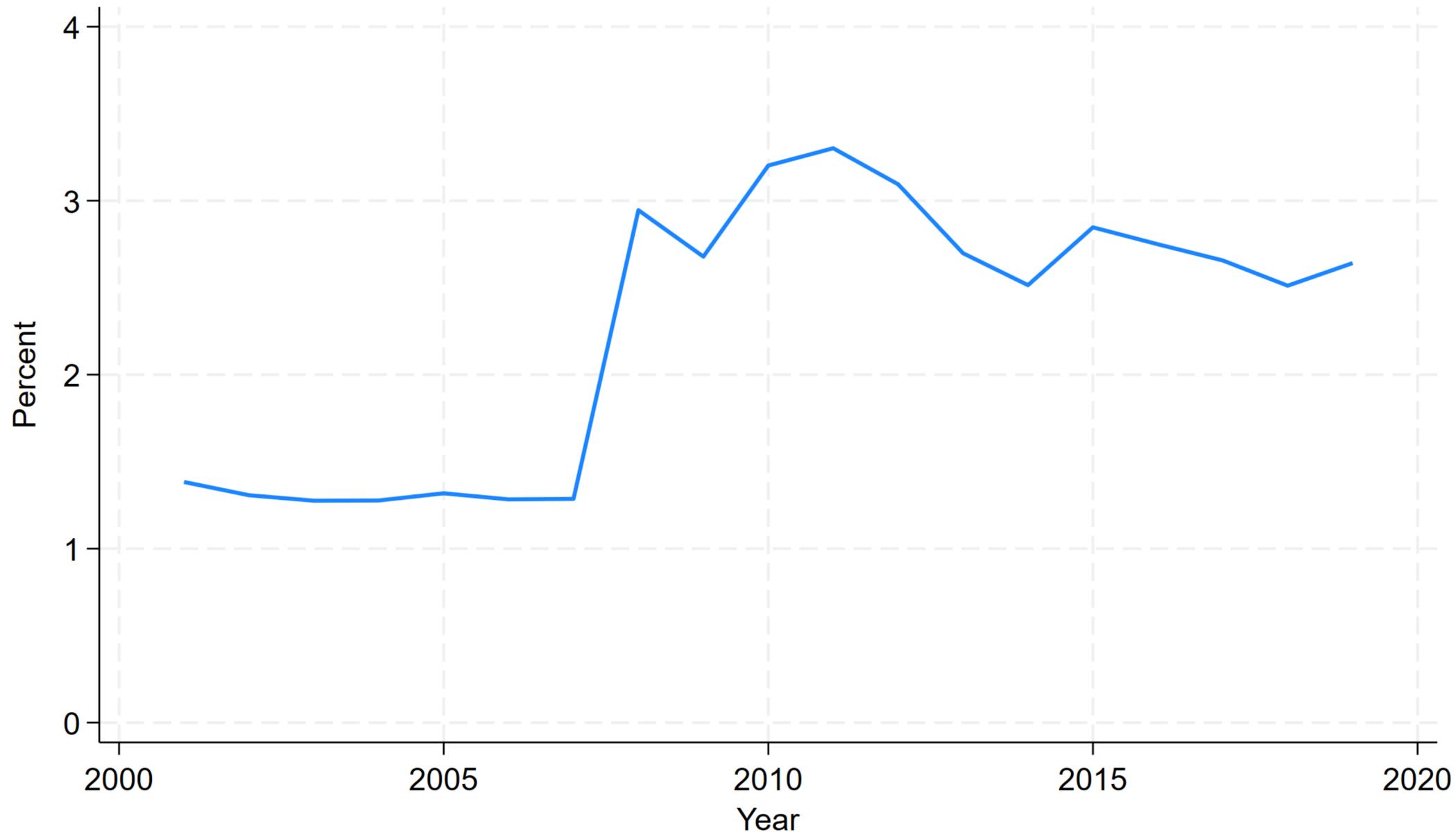


Taxes / GDP



Surpluses: taxing flows in the financial sector

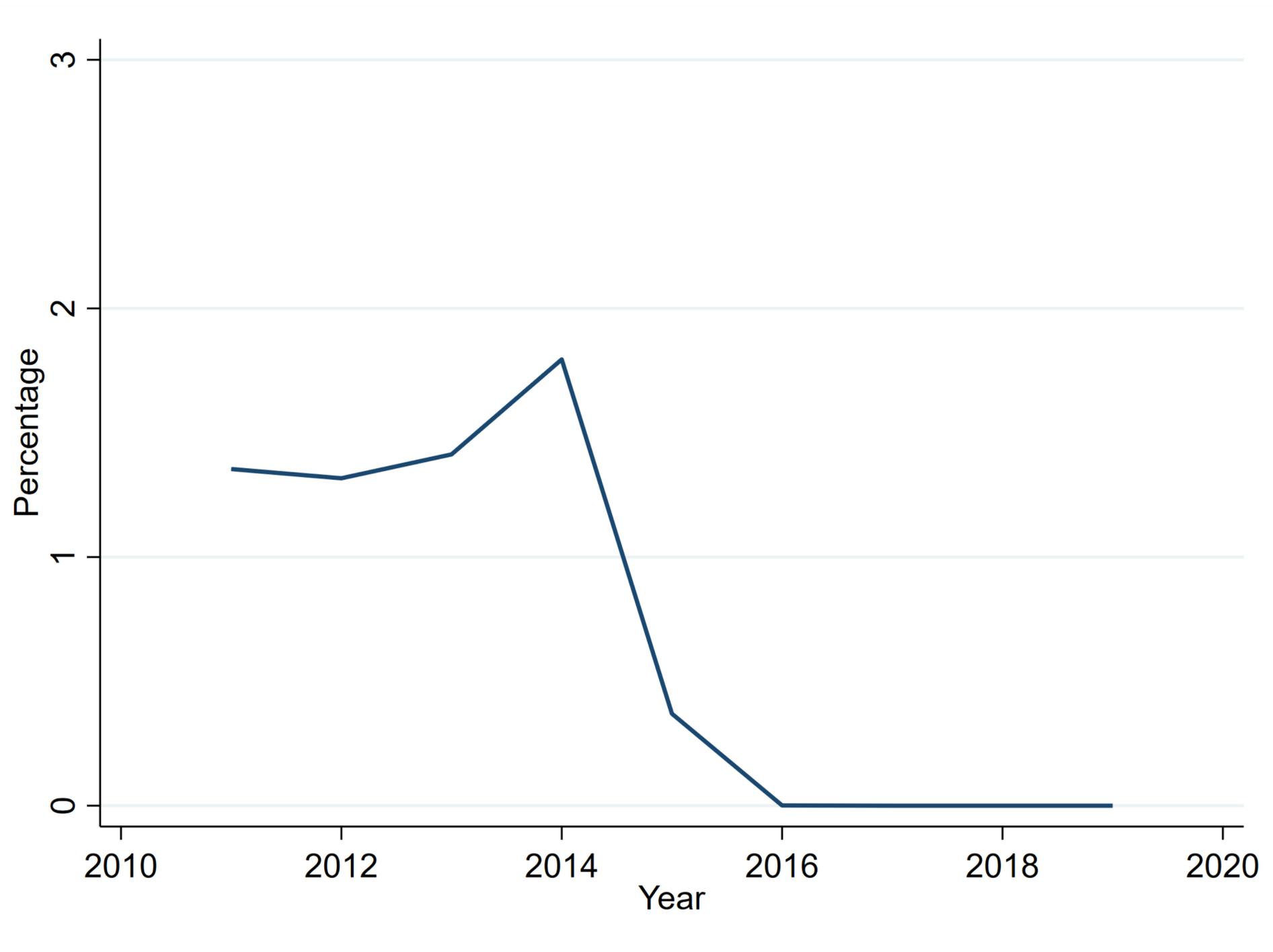
Revenue from all financial taxes / tax revenues



- Brazil, October of 2009
- Transaction tax on equity and fixed income flows, extended to derivatives, peaked at 6% in 2012.
- Revenues: 0.05% of GDP in 2012 (and 0.72% from all)
- Repealed in mid 2013, debatable effectiveness

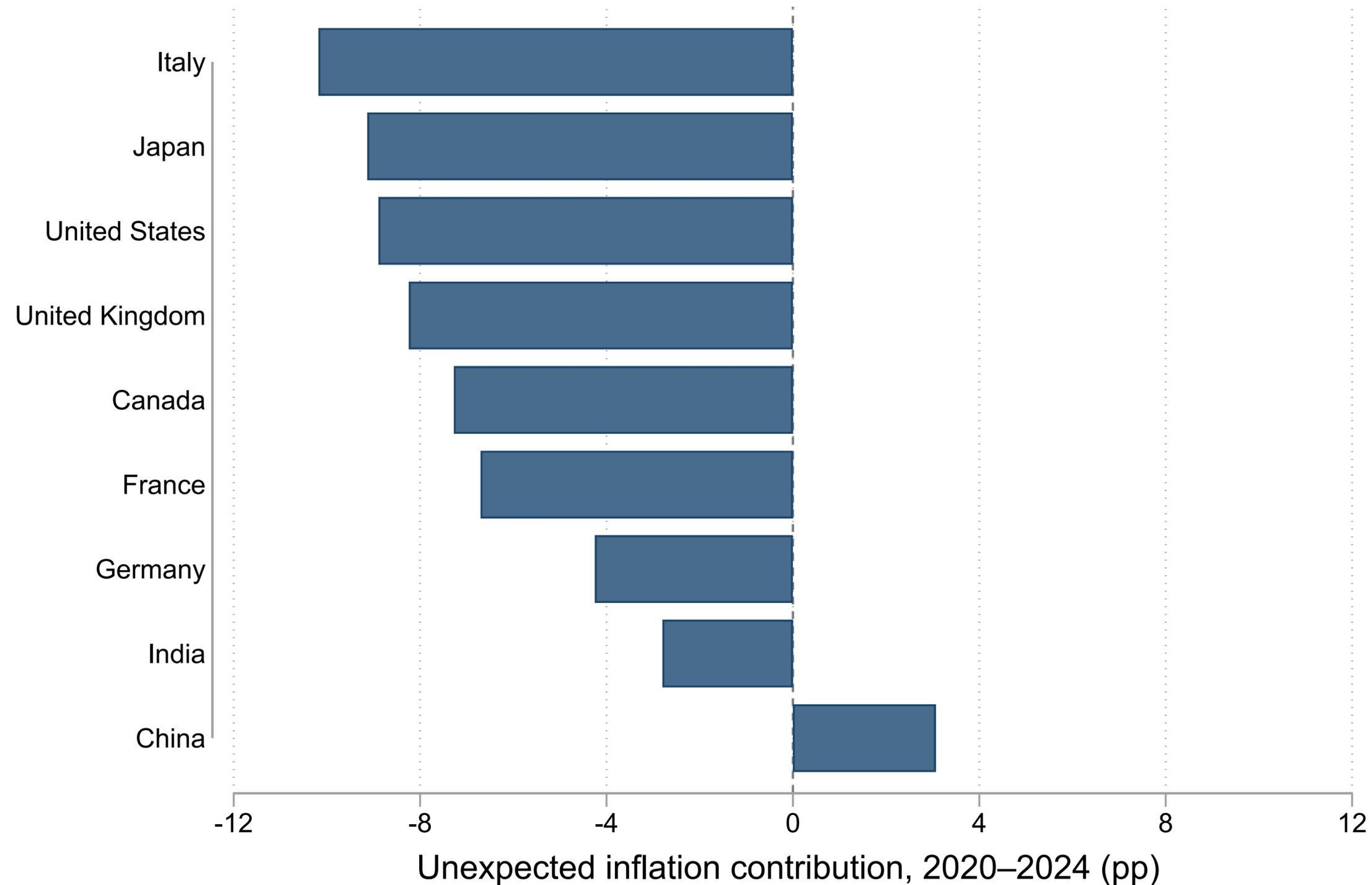
Surpluses: taxing stocks in the financial sector

Tax revenue on pension funds / total



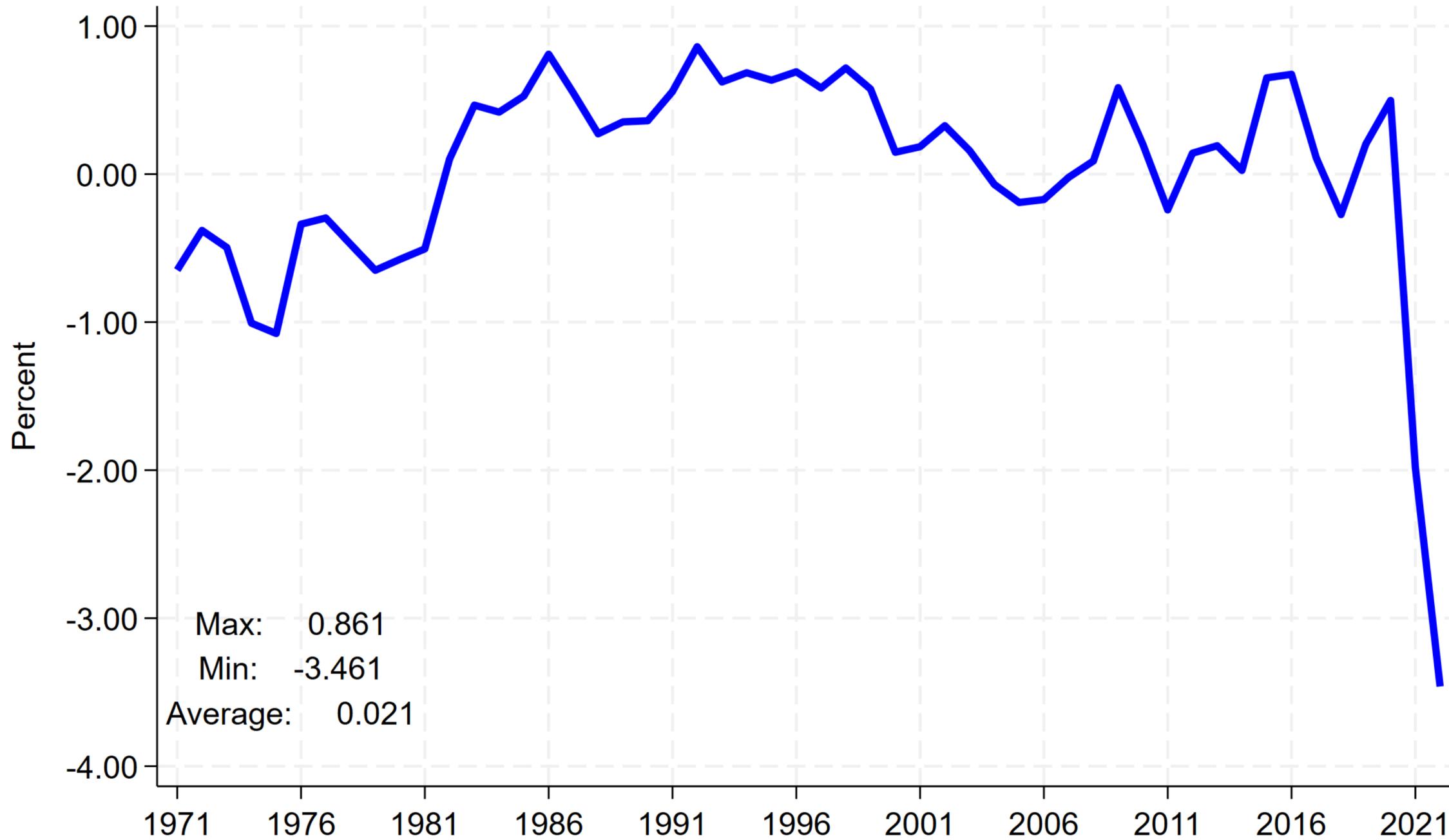
- Ireland, 2011
- 0.6% levy on pension funds' assets for the next three years, rising to 0.75% in 2014 and 0.15% in 2015.
- Revenues: 0.5% of GDP
- Example of one-off-tax on holders of assets. Very impopular

Unexpected inflation: post-pandemic



- Inflation surge across the advanced economics from 2021 onwards
- Exercise: calculate the change in debt due to unexpected inflation, using WEO data on expectations in 2019 and on actual values in 2024
- Significant numbers

Unexpected inflation: post Bretton Woods

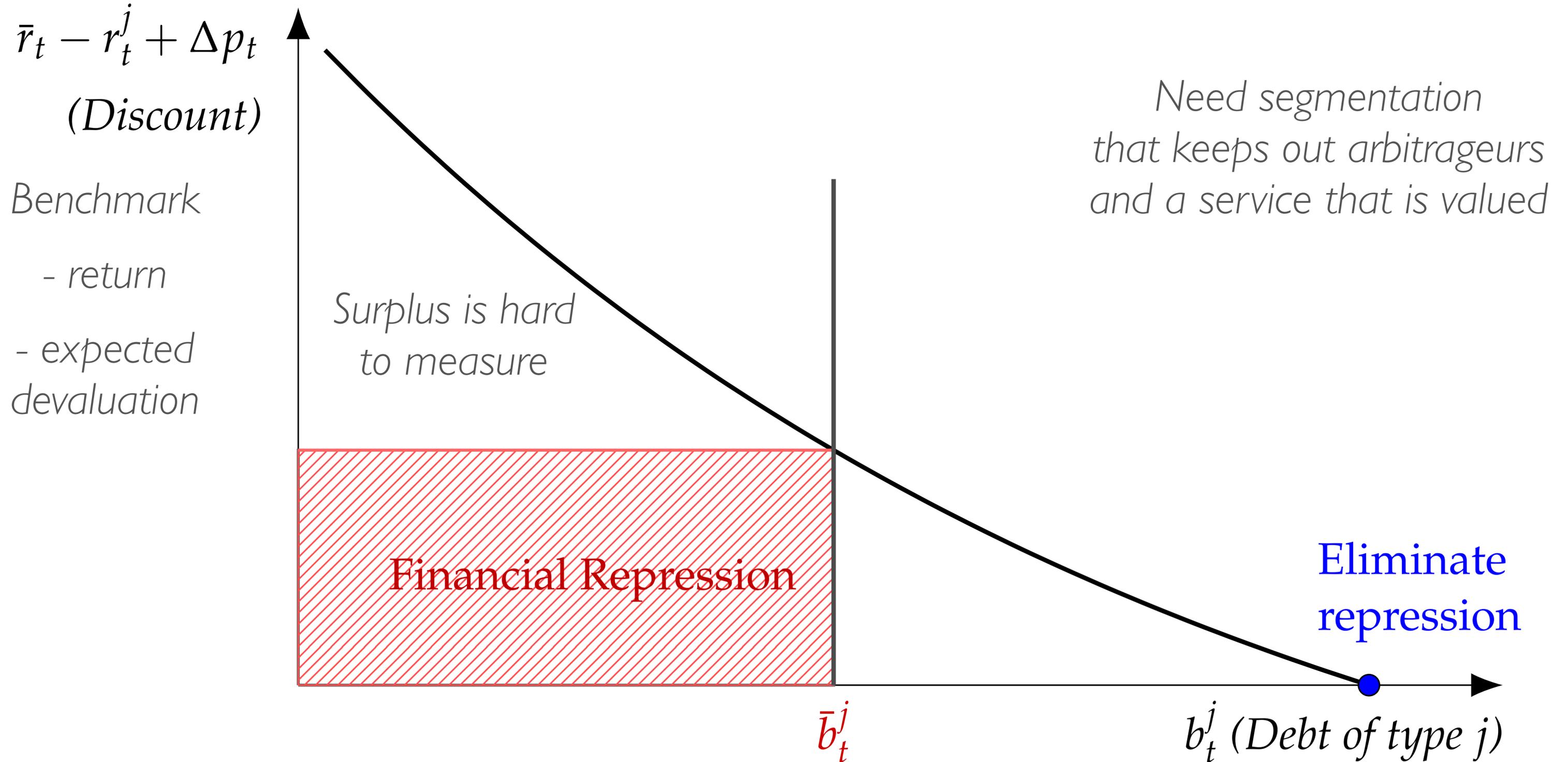


- Using professionals' expectations, same exercise for the US since 1971
- Average is quite close to 0 over 50 years
- Large revenue in 1970s followed by a drag in 1982 - 2003

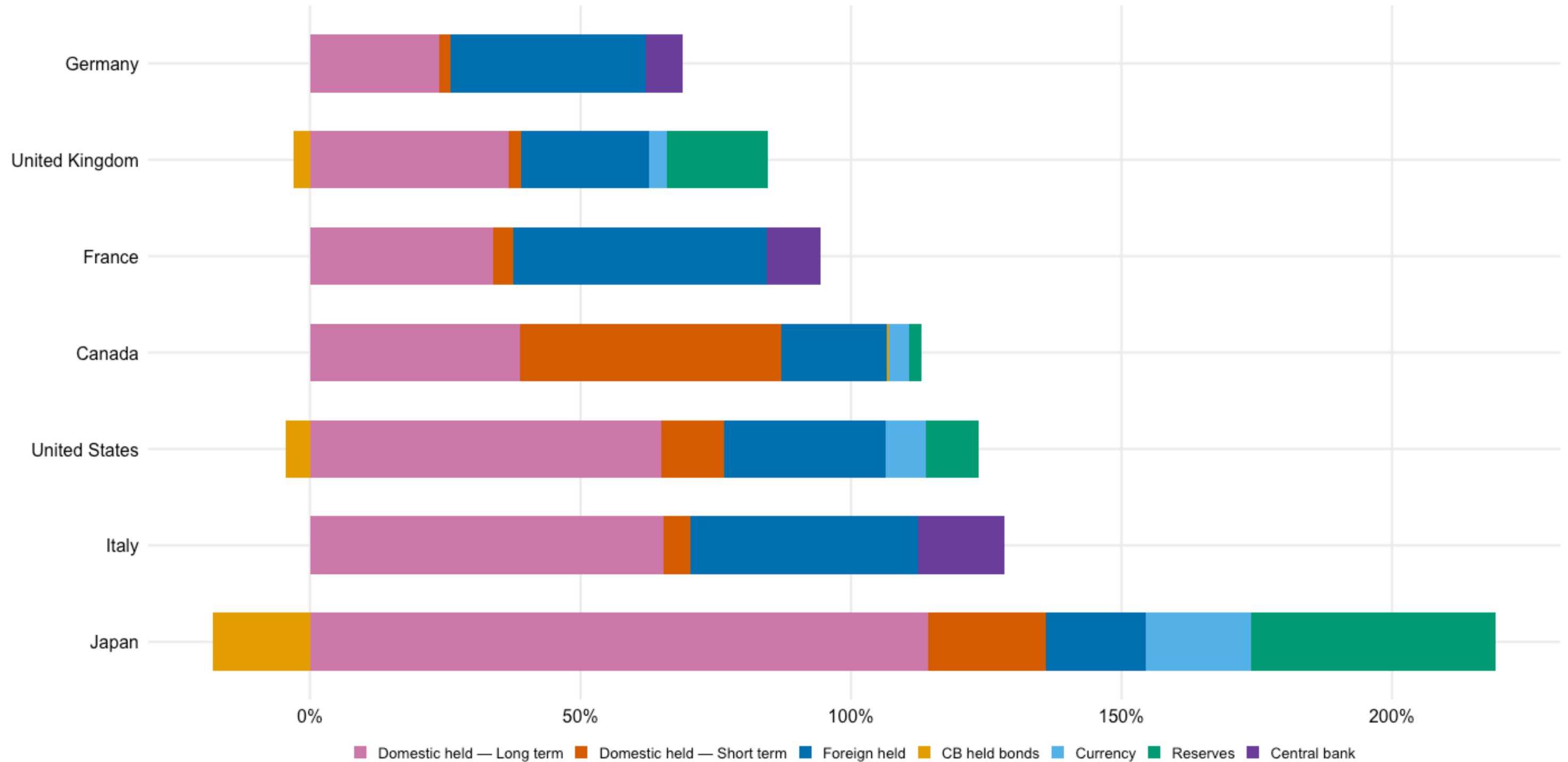
Unexpected inflation: determinants and future

- **Size of the effect depends on**
 - composition of the debt: indexed to inflation, duration of the portfolio
 - extent of the surprise: subdued and slow-to-move expectations
 - inflation dynamics: delay after loose policy, and persistence afterwards
- **Data on expectations right now shows:**
 - In UK data, long-horizon swap prices overreact when the traders' expected inflation rises (Bahaj, Czech, Ding, Reis, 2025)
 - US professionals' survey expectations of US long-run inflation have become more sensitive to short-run inflation shocks (Reis, 2025).
 - Cost of buying insurance against EA inflation tail events at long horizons through swaption contracts has decisively and persistently increased (Hilscher, Raviv, Reis, 2025)

The service flow and discounts



Types of government liabilities and sequencing



Currency

Service:

Anonymous transactions/store of value

Discount:

Zero minus interest rate paid for deposit at the central bank

Optimal:

Friedman rule (but then cannot choose an inflation target)

In principle could be tokenized CBDC

Digital money

Service:

Liquidity for banks

Discount:

Interest on reserves minus interest on overnight government bond (ONRRP)

Optimal:

Abundant / ample reserve system

(Or lending rate close to deposit rate)

Long-term bonds

Service:

Safe stream of income for 20-30 years
Duration for pensions and life insurance

Discount:

30-10yr spread from preferred habitat

Optimal:

Supply more long-term bonds

Currency denomination

Service:

Match imports with store of value
Insurance if appreciate in crisis

Discount:

Cross-currency basis (CIP deviation)

Optimal:

Domestics have advantage in doing it

Three more

Lending of last resort:

Discount window and cross-border liquidity lines from central banks

Capital controls:

Wedges in UIP conditions and the Chinese onshore-offshore currencies

Exchange rate volatility:

Mundell and the desirability of international currency to eliminate the volatility wedge in UIP

Government debt

Service: pledgeability as collateral

- Information-insensitive, deep liquid markets
- Regulation boosts demand: liquidity ratios, risk-weighted capital requirements, exemption from leverage limits, eligibility rules for lending

Two approaches to measuring

- Narrow to minimize segmentation: supra-nationals or AAA corporate bonds
- Broad to avoid MM biases: return on capital, and separate out risk by bond-stock correlations and empirical SDFs from asset pricing

Quantifying US financial repression

Table 1: Assessing the size of US financial repression revenues

			Revenue % GDP	
			2015-19	2021-25
Panel I. Direct taxation term				
Income taxes collected over the financial sector			0.089	0.086
Panel II. Unexpected inflation term				
<i>Expected inflation</i>	<i>Actual inflation</i>	<i>Debt/GDP (%)</i>		
1.560	1.554	61.9	-0.023	
2.016	4.938	84.1		1.955
Panel III. Discounts term				
<i>Convenience service</i>	<i>Discount spread</i>	<i>Relevant liability</i>		
Anonymity	IOR rate minus zero	Currency in circulation	0.094	0.262
Liquidity	ONRRP rate minus IOR	Bank deposits at the Fed	0.024	0.014
Duration	30-10yr spread from preferred habit	Government bonds maturity \geq 10yr	0.014	0.023
USD denomination	Treasury covered interest parity	US gross external liabilities	0.399	-0.062
Pledgeability	3yr AAA corporate minus treasury rate	Government bonds held by the public	0.438	0.508
	Return on capital minus treasury rate	Government bonds held by the public	3.914	0.260

(1) Pledgeability dominates

(2) Pledgeability has fallen

(3) Large recent fall in revenues from USD denomination

(4) Old-fashioned repression from currency and unexpected inflation made a big comeback

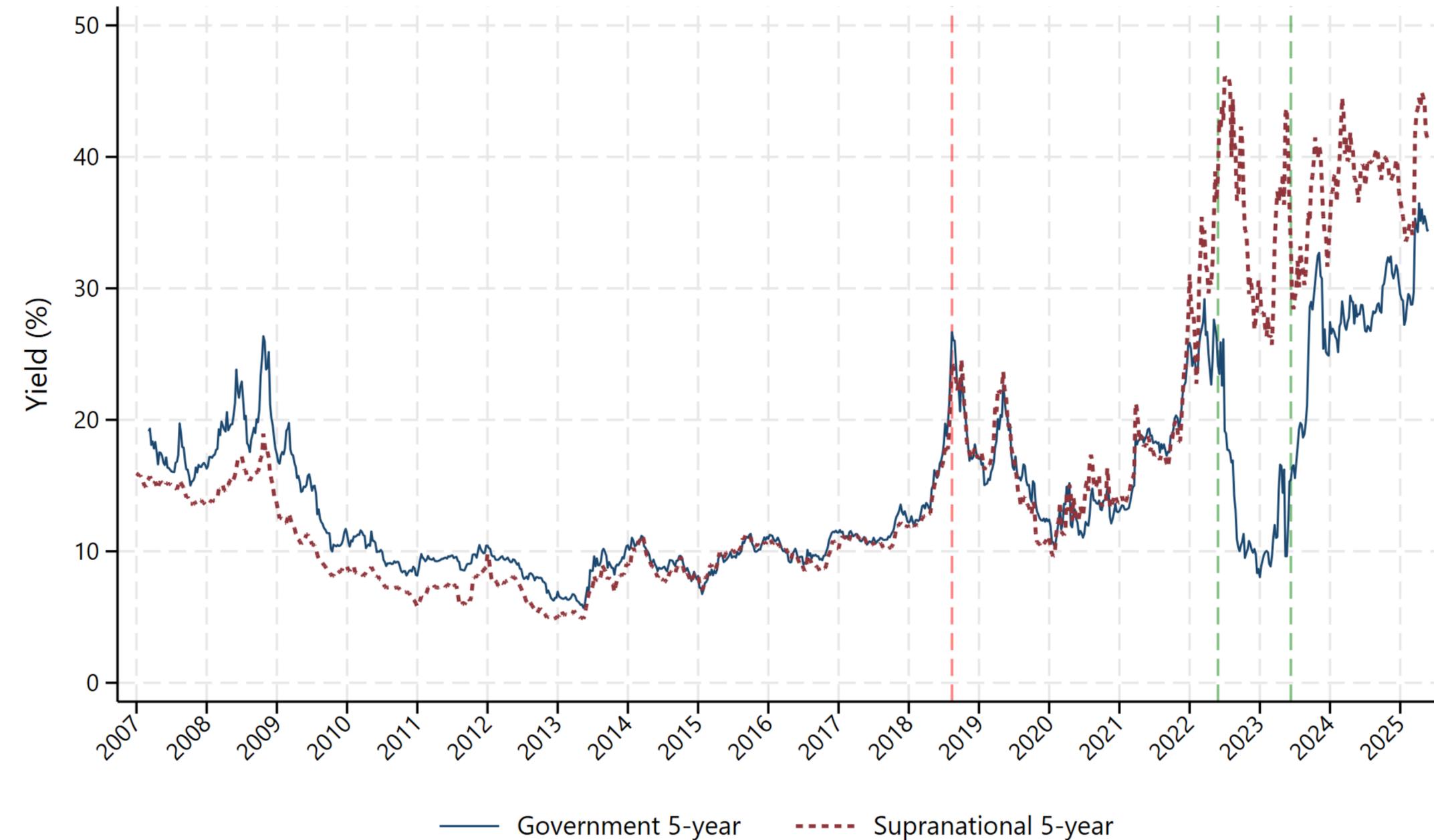
Potential for more revenues?

Table 2: The semi-elasticity of the demand curve for different bond-services

Service	Semi-Elasticity (per 100bp)	References in the literature
Anonymity	0 to 10%	Ball (2001), Lucas (1988), Benati et al. (2021).
Liquidity	50 to ∞ %	Hamilton (1997), Smith and Valcarcel (2023), Afonso et al. (2025), Bahaj and Reis (2024), Lopez-Salido and Vissing-Jorgensen (2025).
Duration	175 to 250%	Greenwood and Vayanos (2014), Greenwood and Vissing-Jorgensen (2018).
USD denomination	1 to 20%	Bahaj et al. (2025a), Liao and Zhang (2024), Kubitza, Sigaux and Vandeweyer (2024).
Pledgeability	20 to 60%	Krishnamurthy and Vissing-Jorgensen (2012), , Jiang, Richmond and Zhang (2025), Fang, Hardy and Lewis (2025), Payne and Szoke (2025).

Note: This table lists bounds for estimates of the semi-elasticity of the service provided by the government liabilities listed in table 1, and the references to the articles that estimated them.

Modern cases: Turkey, June 2022



Source: Onen (2025)

- **Securities Maintenance Practice:** banks must hold long-term government bonds against loans, deposits, FX.
- **This lecture:** measure by supranational spread
- **Further:** interaction between fiscal and macroprudential policies that face fiscal or financial crisis leading to “unpleasant macroprudential arithmetics” (Reis, 2021)

Modern cases: Euro Area, September 2023

ECB adjusts remuneration of minimum reserves

27 July 2023

- > Minimum reserves to be remunerated at 0%
- > Change preserves the effectiveness and improves the efficiency of monetary policy

The Governing Council of the European Central Bank (ECB) today decided to set the remuneration of minimum reserves at 0%. The change will become effective as of the beginning of the reserve maintenance period starting on 20 September 2023.

Minimum reserves are reserve balances that credit institutions are required to hold with their Eurosystem national central bank on average over a maintenance period. Credit institutions are required to hold a minimum amount equivalent to 1% of specific liabilities, mainly customers' deposits. Minimum reserves are currently remunerated at the ECB's deposit facility rate (DFR).

- **Policy decision:** remuneration of required reserves went from the interest on deposits to zero
- **This lecture:** this is financial repression, brings €6 bn per year
- **Further:** is this desirable, since there is a spread between the deposit rate commercial banks earn at the central bank and the deposit rates they pay their costumers? (Reis, 2023, Bahaj, Hosseini, Reis, 2025).

Modern cases: UK 2024-2025 pension reforms?

Reeves looks to include minimum UK shareholding in Isa overhaul

Evolution of abandoned Conservative 'Brit Isa' plan also includes stamp



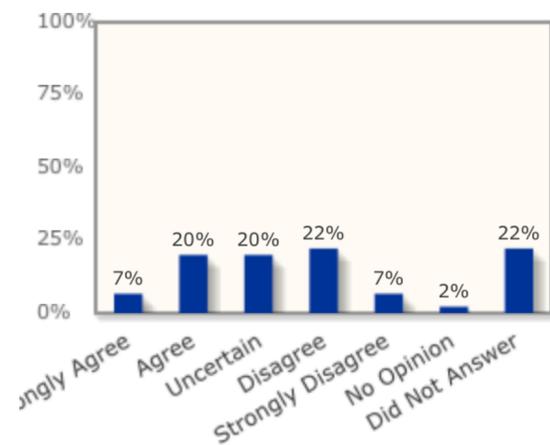
Source: FT and EC

- In UK, 80% of pension funds' assets under management are invested abroad
- Both parties— Hunt in March 2024, Reeves in November 2025?—with proposals to limit tax benefits in ISAs (Roth IRAs) to investments in UK bonds and equity. **Financial repression.**
- **Further:** Draghi report call for domestic capital markets based on pensions funds to invest domestically and recover competitiveness (Reichardt Reis, 2025)

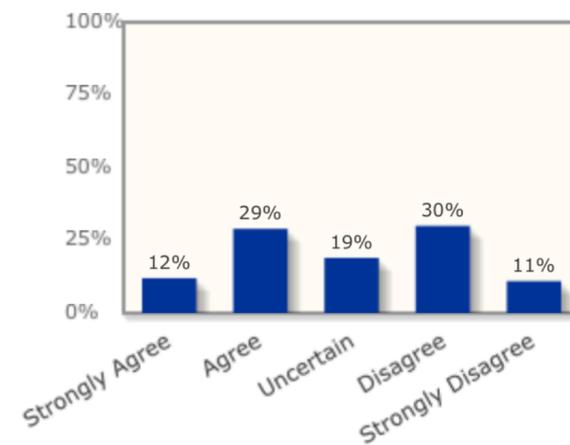
Modern cases: raising the inflation target

If the European Central Bank changed its inflation target from 2% to 3%, the long-run costs of inflation for households would be essentially unchanged.

Responses

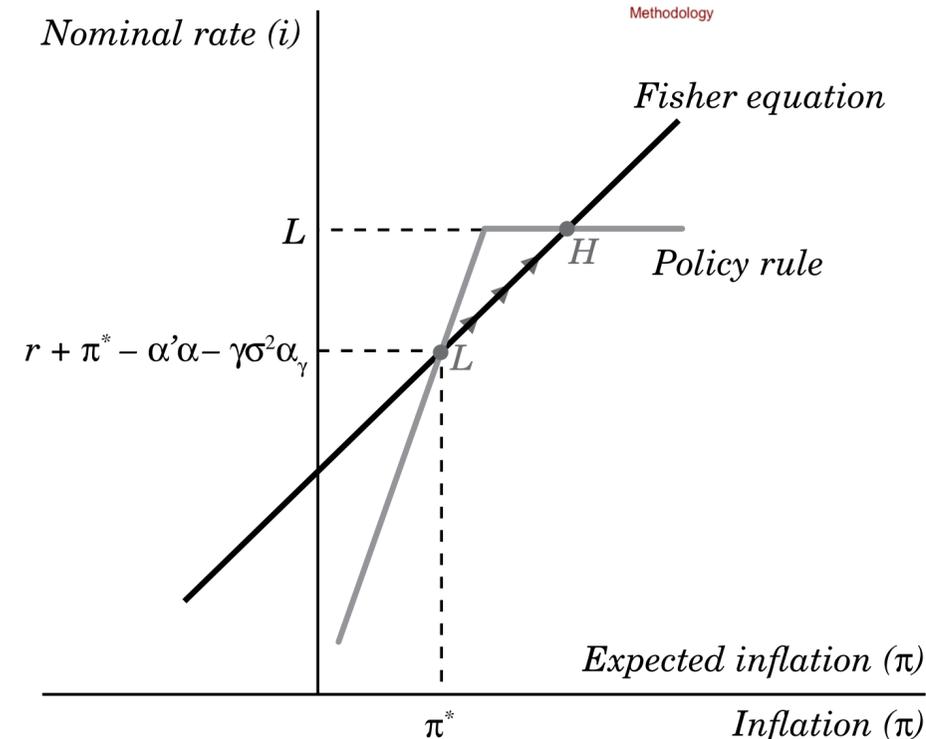


Responses weighted by each expert's confidence



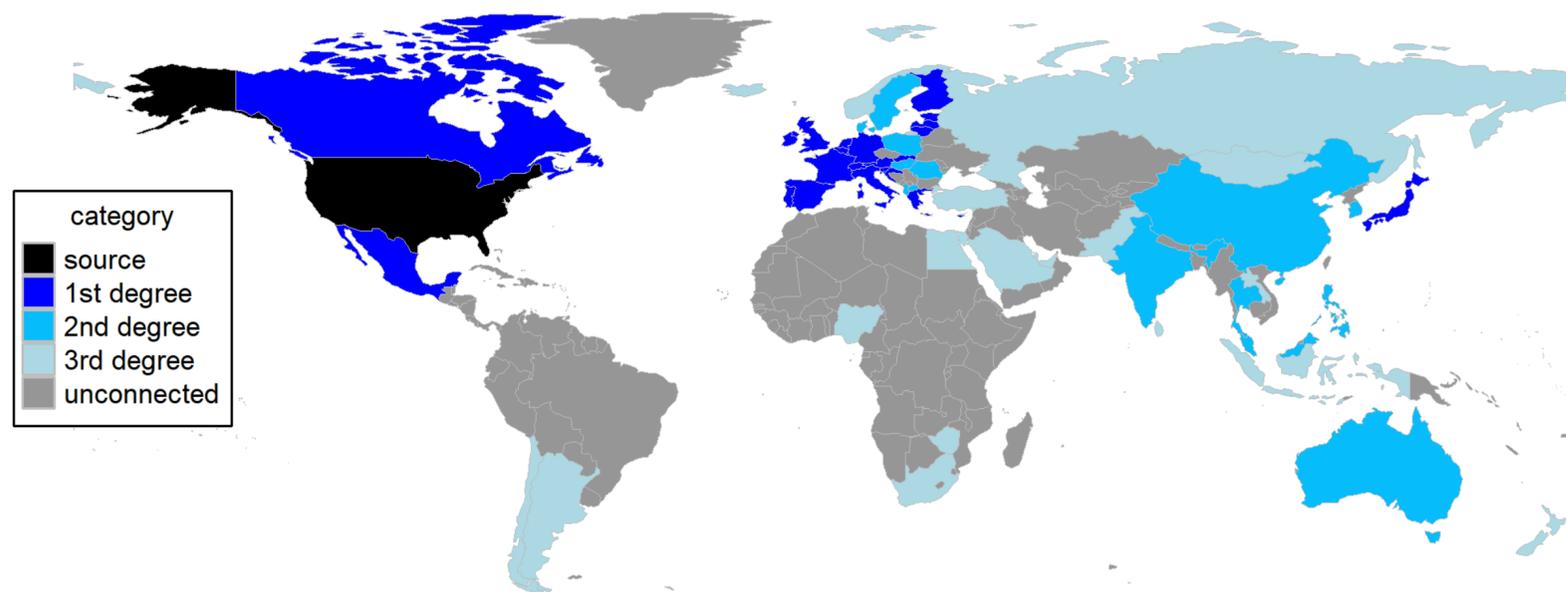
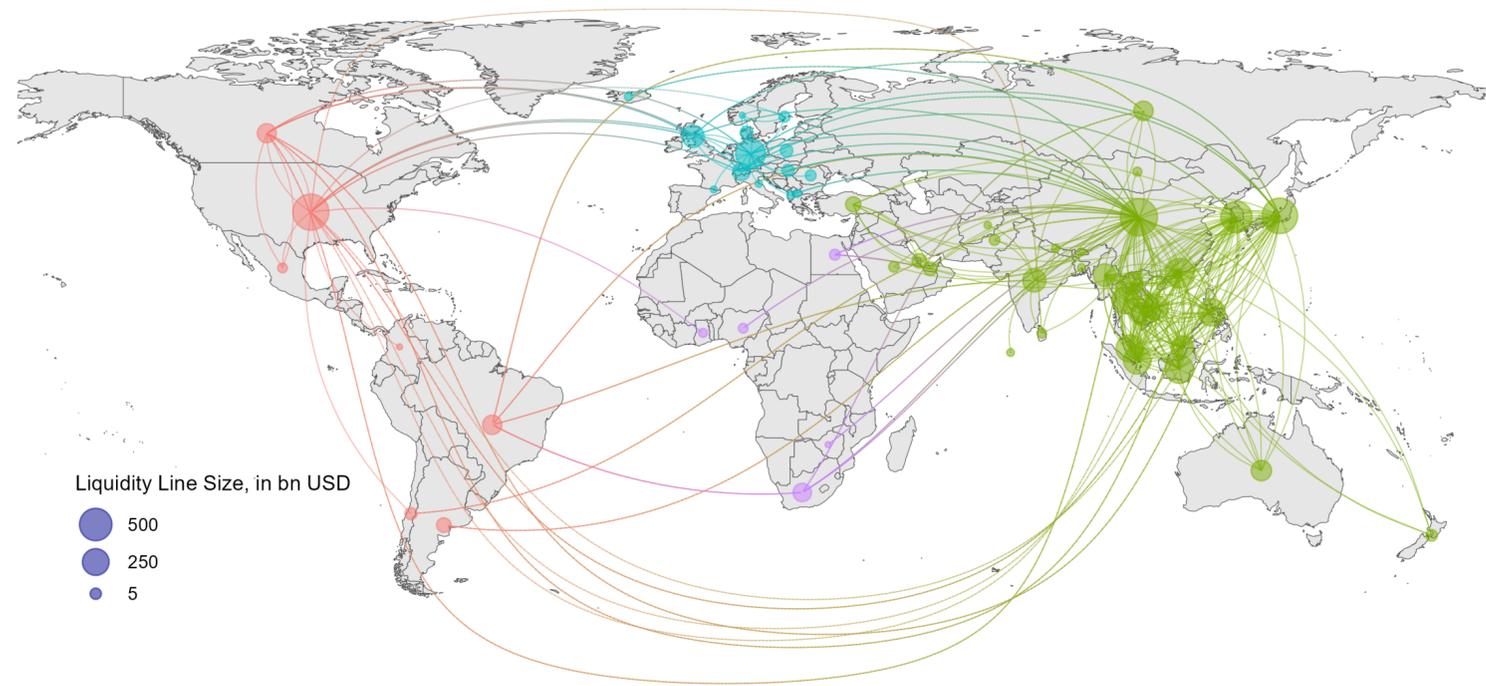
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Source: European Clark Center Economic Experts Panel
Methodology

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Source: European Clark Center Economic Experts Panel
Methodology



- By itself, if fully anticipated increase in inflation, then still **financial repression** through zero-interest-paying currency.
- Using the estimates in **this lecture**: extra 1% in the inflation target raises 0.12% of GDP per year in repression.
- **Further**: if ceilings on on interest rates of long-term government bonds, or with yield curve control (Japan 2016-24), repression can be large but leads to unanchored inflation (Reis, 2019)

Modern cases: international provision of USD



- Fed 2010 **swap lines**: lends USD to a foreign central bank, receiving in return as guarantee that central bank's currency as a guarantee, to be returned when the USD are repaid.
- Fed 2020 Foreign and International Monetary Authorities (**FIMA**) **repo** facility: foreign central banks can borrow USD overnight as long as they can offer US treasuries as collateral.
- Move from first to the second is **financial repression** (Bahaj Reis, 2022, Bahaj, Fuchs, Reis, 2024)

Modern cases: stablecoins and currency



- Can reduce the repression in two ways: digital form of payment with some anonymity that can pass interest rate earned at central bank; and allow foreigners to have access to international currency eliminating exchange rate volatility risk
- But, transfer repression revenues from States to private issuers
- And if domestic regulations stop them from paying interest, and foreign regulations stop them from being adopted, then benefits are voided

Conclusions

- **An economic principle:** the budget constraint of the government and/or nation, with three additional financial repression terms
- **Applied policy question:** size and potential. They were popular 1945 -1985, resurgent temptation now given twin debt problem and scope for using them.
- **Should it come back?** Illusory temptation, upper bound on revenues, like high distortions. Parallelism to printing money to solve problems
- If they are actively used, **two open questions**
 - How much will elasticities adjust from short run to long run: **offshore markets**
 - **Role of the IMF**, from 1970-80s liberalization, to capital flow management, to ...