

# **CENTRAL BANK BALANCE SHEETS: EXPANSION AND REDUCTION SINCE 1900**

Ferguson, Schaab and Schularick

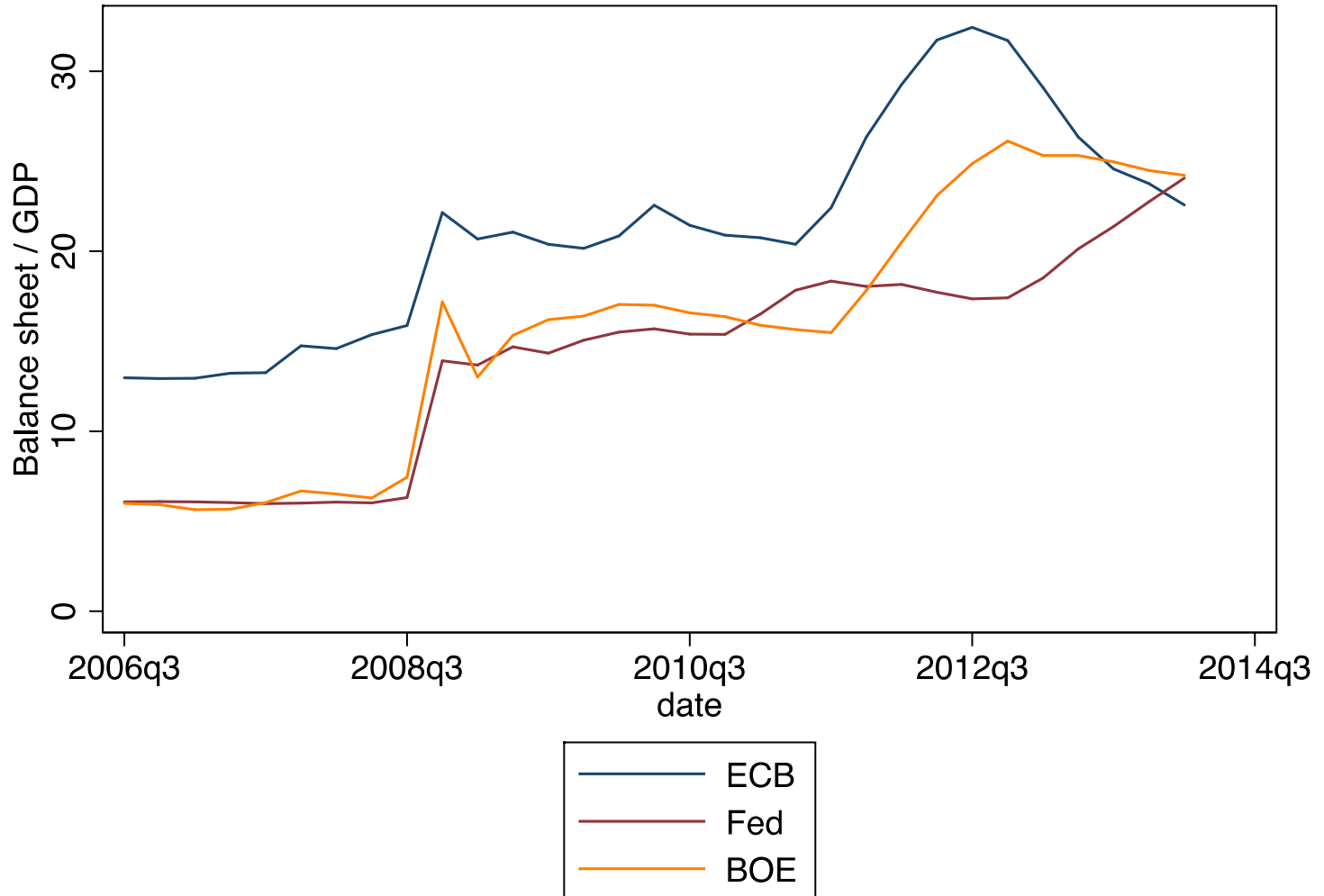
ECB Forum, Sintra, May 27, 2014

## Making financial history

“You have peacetime and then you have wartime. In peacetime, I’m on the Bundesbank line, but the situation [in 2012] was very different.” – Jörg Asmussen



# Wartime monetary policy in a time of peace



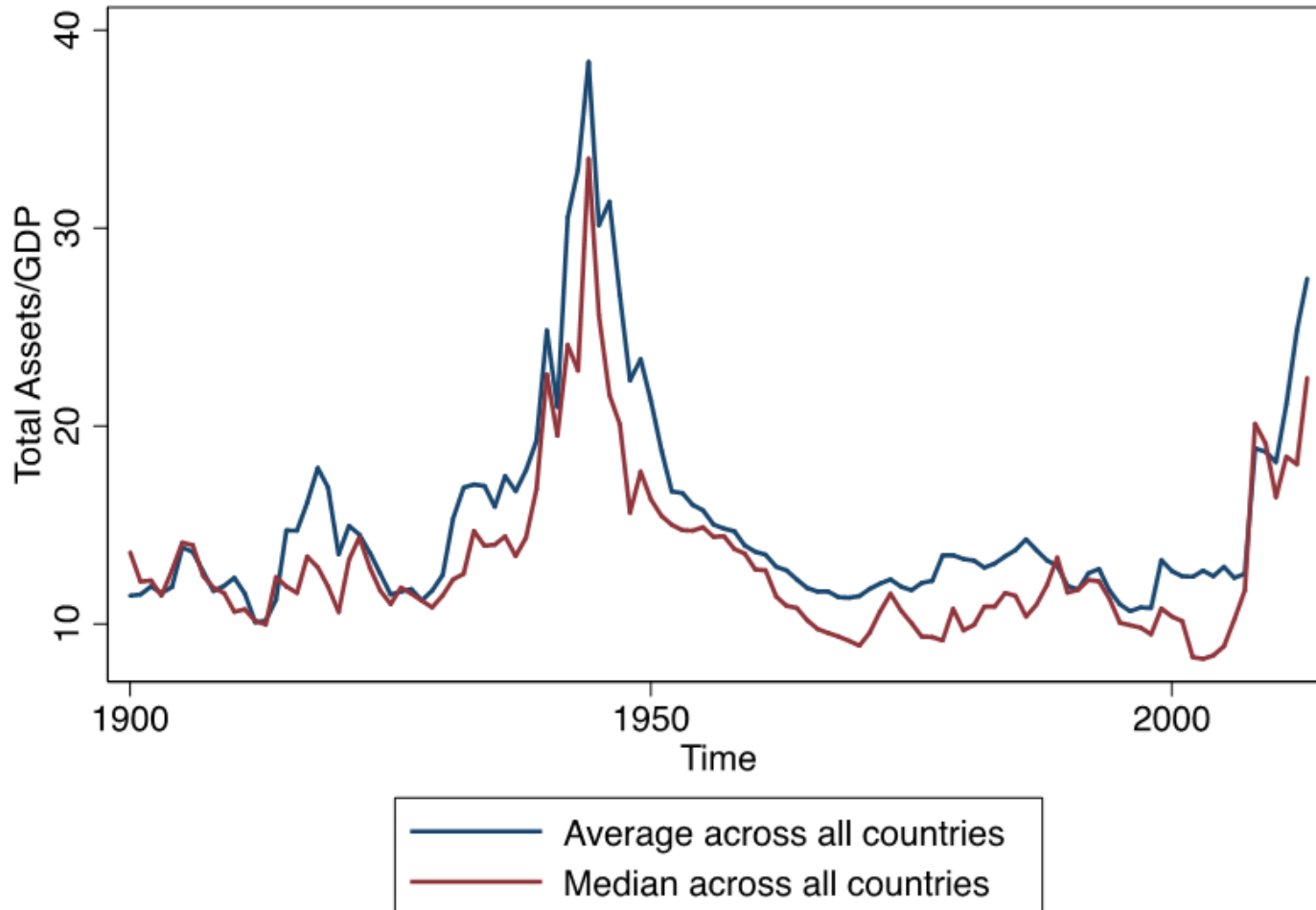
# The dataset

- A new dataset of central banks' balance sheets in twelve advanced economies 1900-2013.
- Australia, Canada, Finland, France, Germany, Italy, Japan, Norway, Sweden, Switzerland, UK and US.
  - After 1999, aggregated balance sheet data for the European System of Central Banks (ESCB) in lieu of the 4 euro area countries.
- Mostly hitherto unpublished data from country CBs.
- Includes composition of assets and liabilities by type, not maturity.
- Plus updated macro dataset from Schularick and Taylor (2012).

# A brief summary of our argument

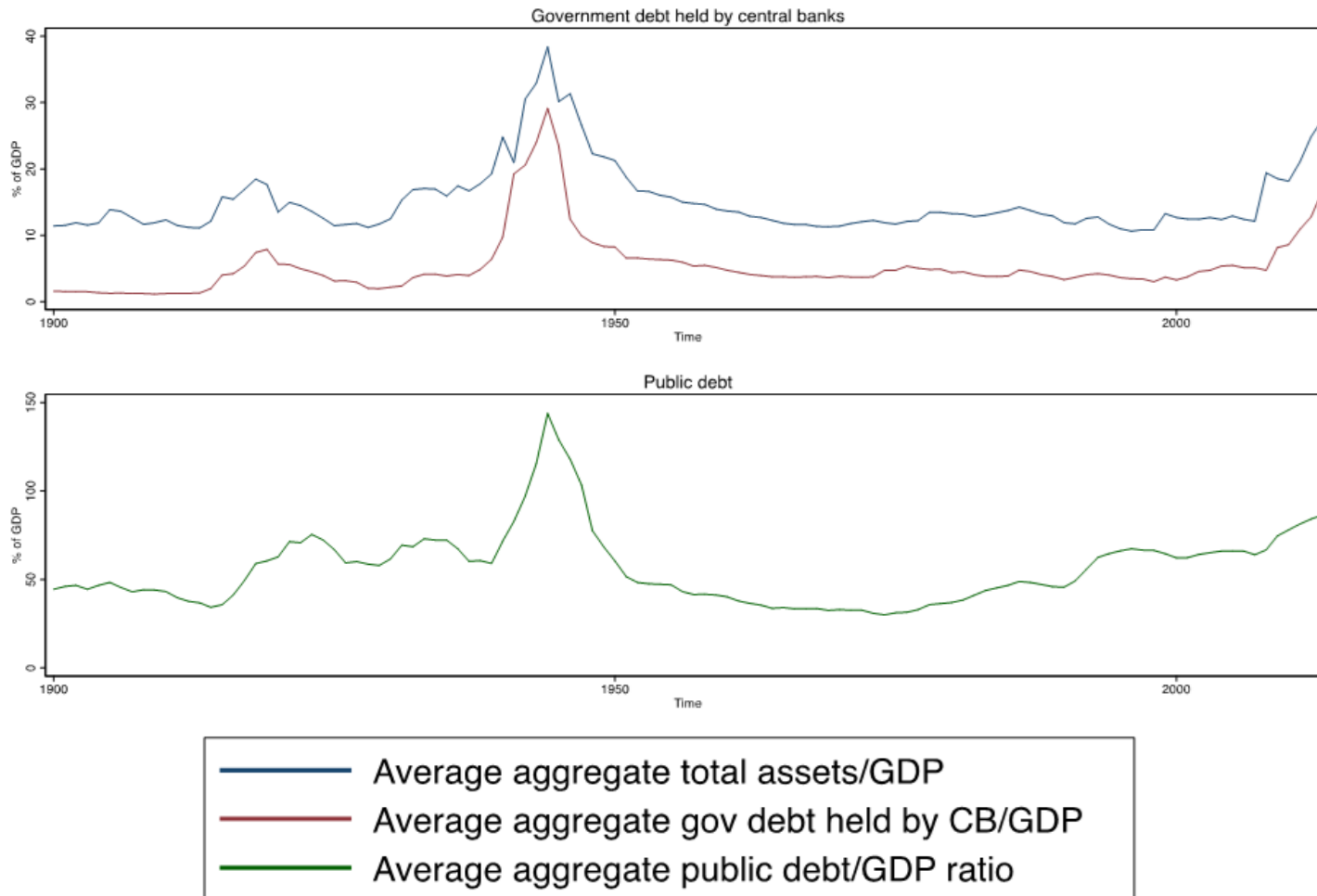
- Big balance sheet expansions have been associated with periods of geopolitical or financial crisis.
- Over the long run, CB balance sheets and government debt show a high degree of co-movement.
- CBs have rarely reduced the size of their balance sheets in nominal terms; usually relative to GDP.
- Relative to the size of the financial sector, CB balance sheets had shrunk dramatically before the global financial crisis, so recent increase represents a return to previous levels.
- Link between central bank balance sheet growth and inflation has loosened since 1980, so the inflation risks look limited in the near term.
- But history suggests that the threat to long run price stability is real when fiscal deficits persist and central bank independence is compromised.

Relative to GDP, CB balance sheets have experienced only one increase comparable to our time



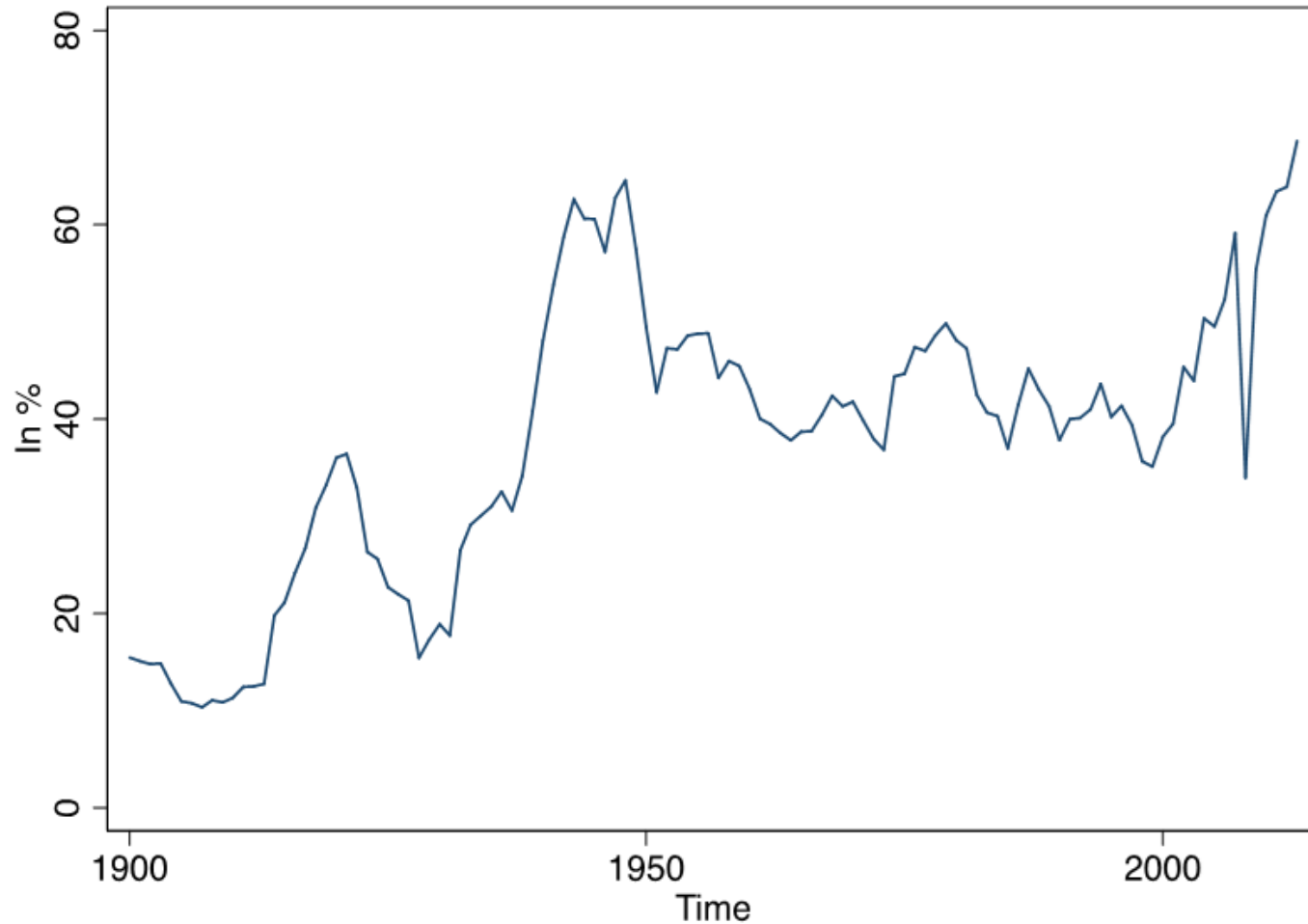
Source: see text.

In most cases of major balance sheet expansions,  
public debt also rose off and on CB balance sheets



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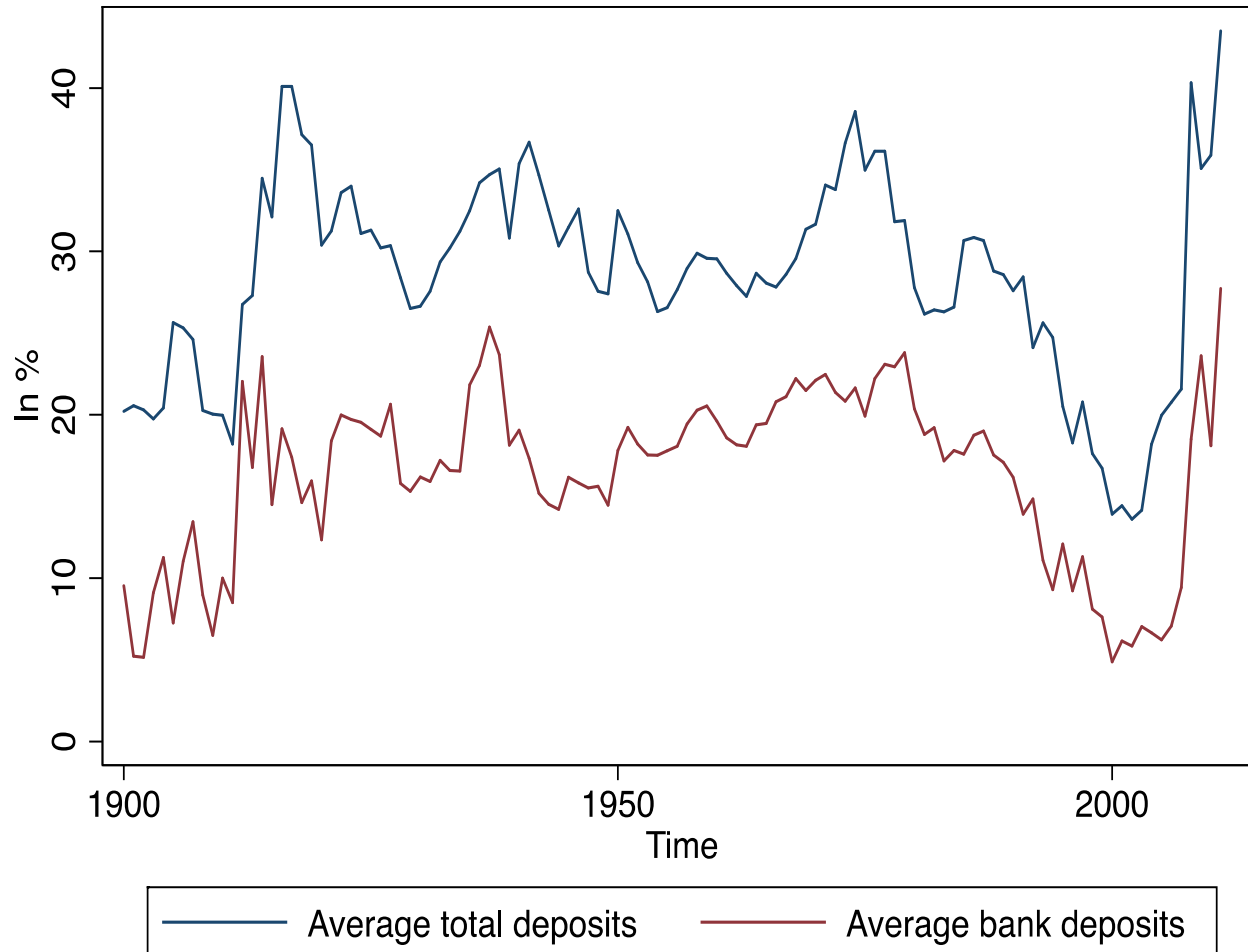
As a share of CB assets, public debt is now back where it was at the end of World War II



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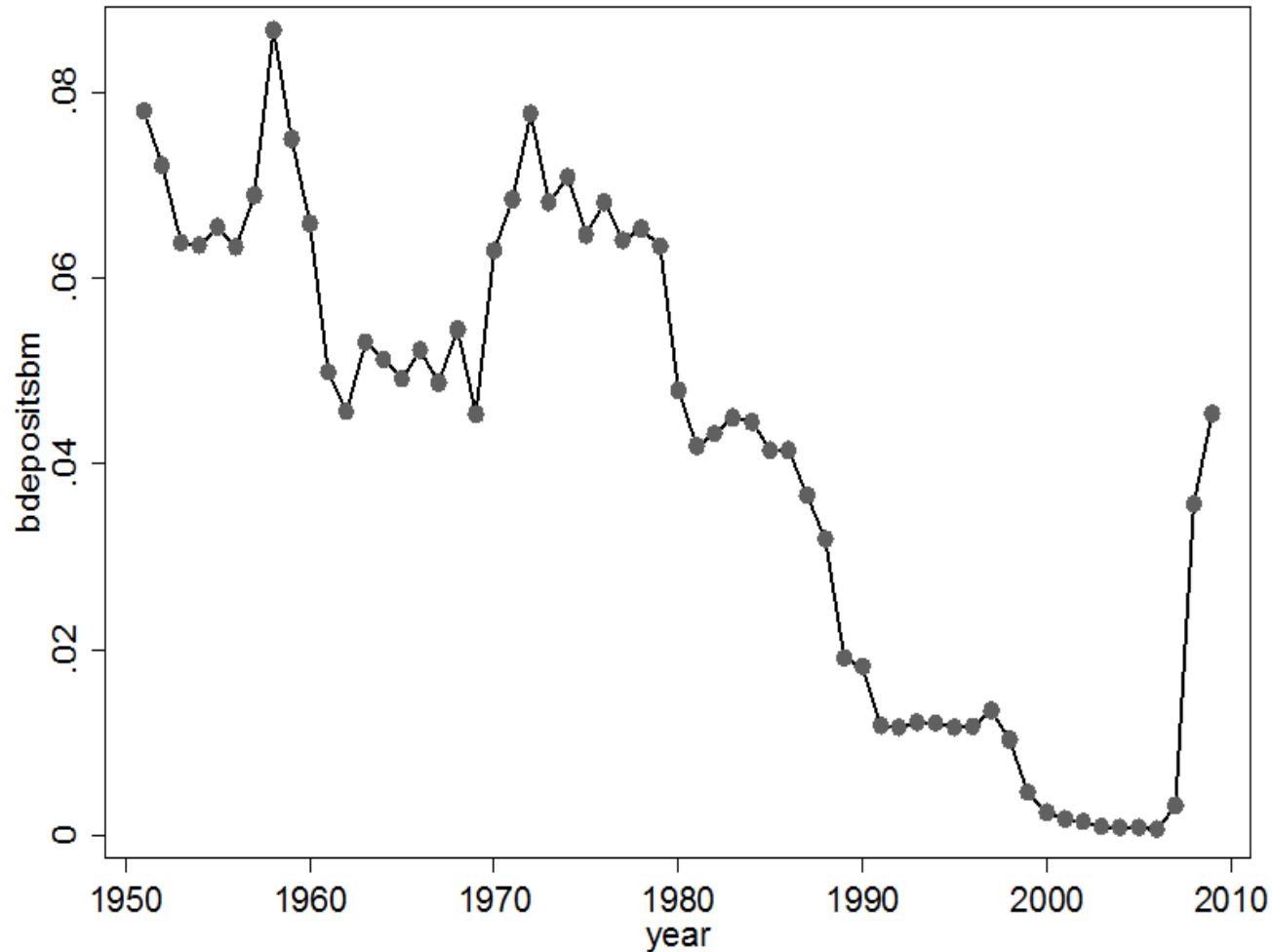


# As a share of CB liabilities, bank reserves are back to where they were in 1980

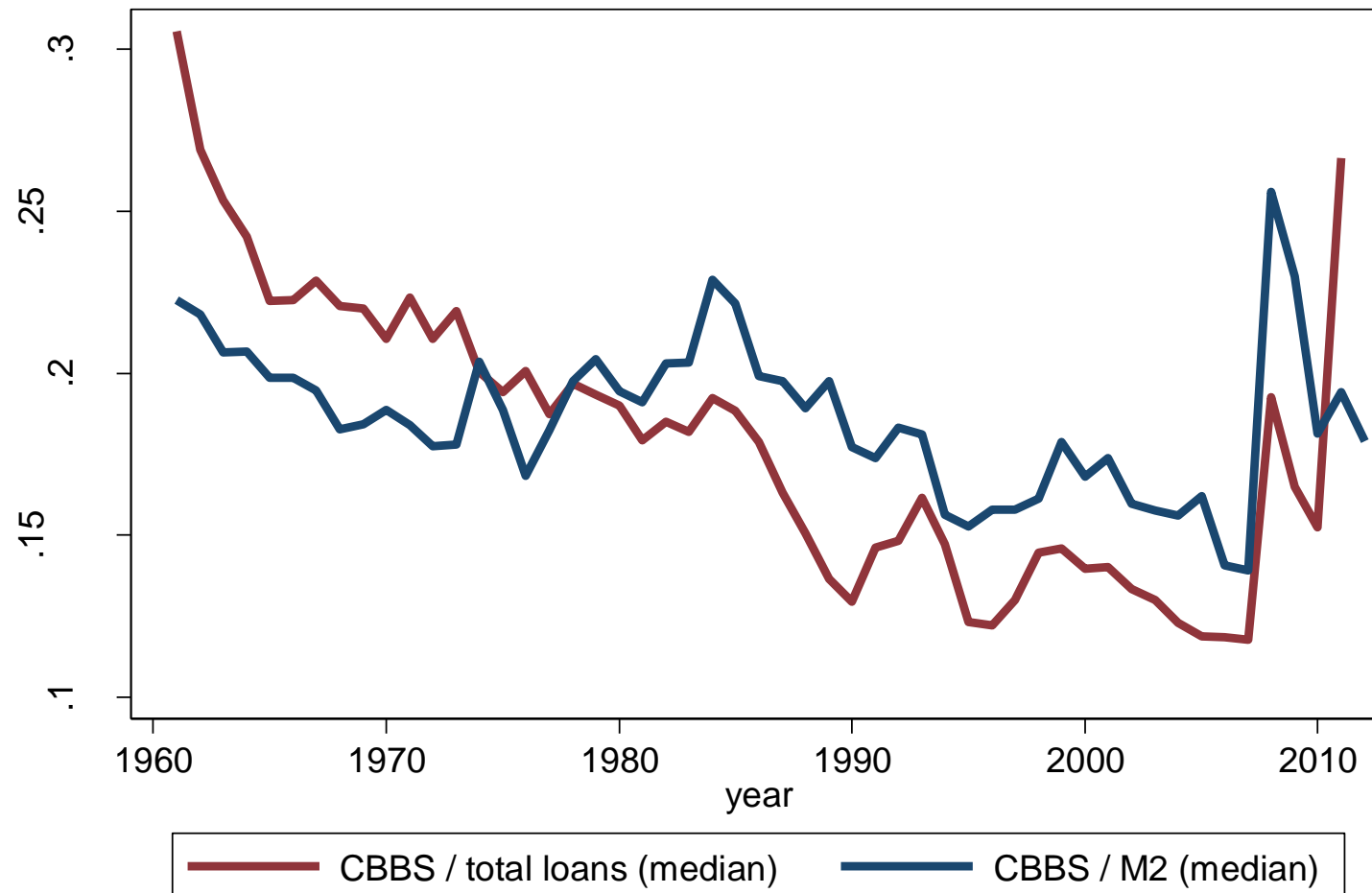


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Relative to total bank lending, bank reserves at CBs are still below their peaks in the 1950s and 1970s

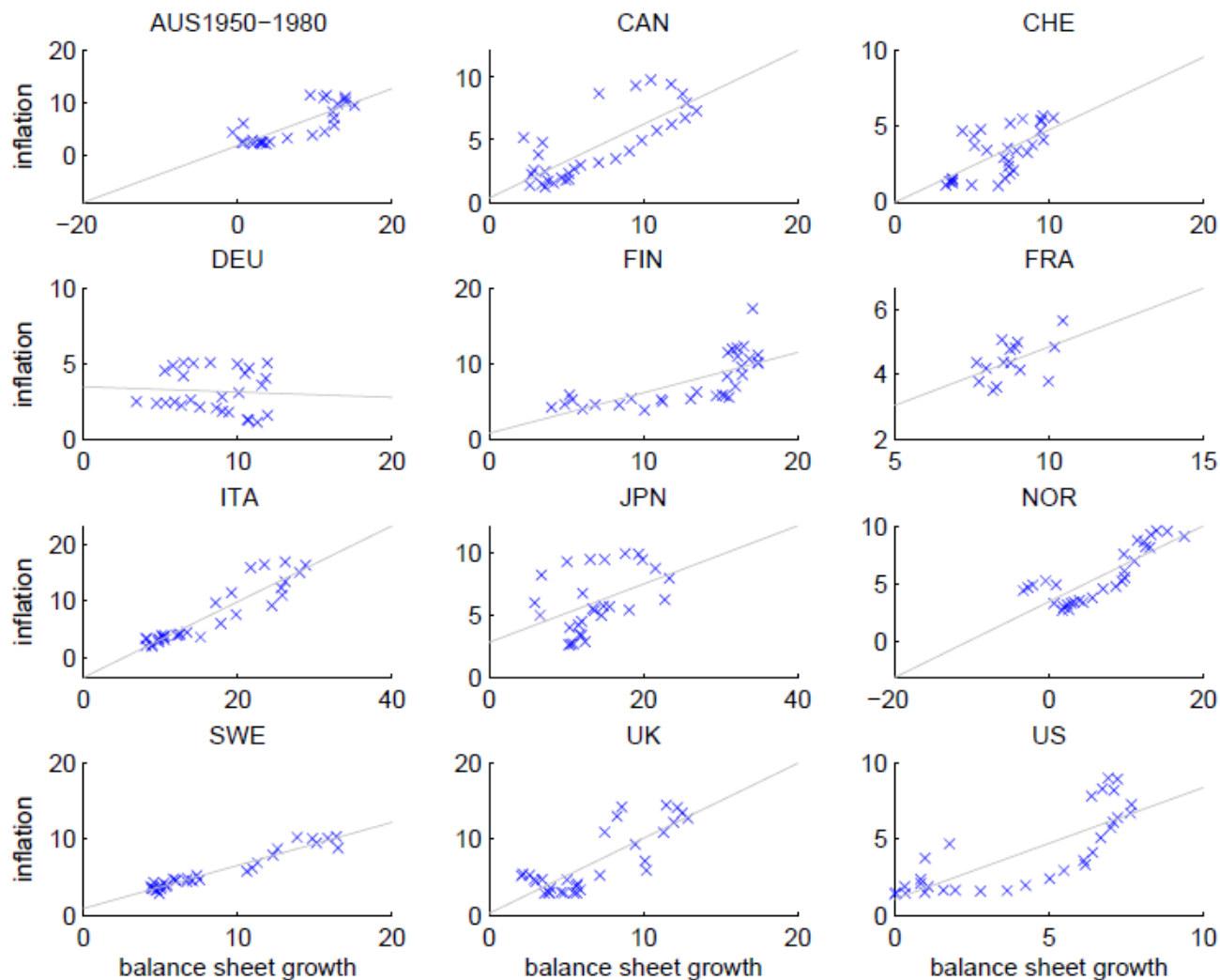


Relative to total credit and money, CB balance sheets have simply recovered to pre- “financialization” era levels

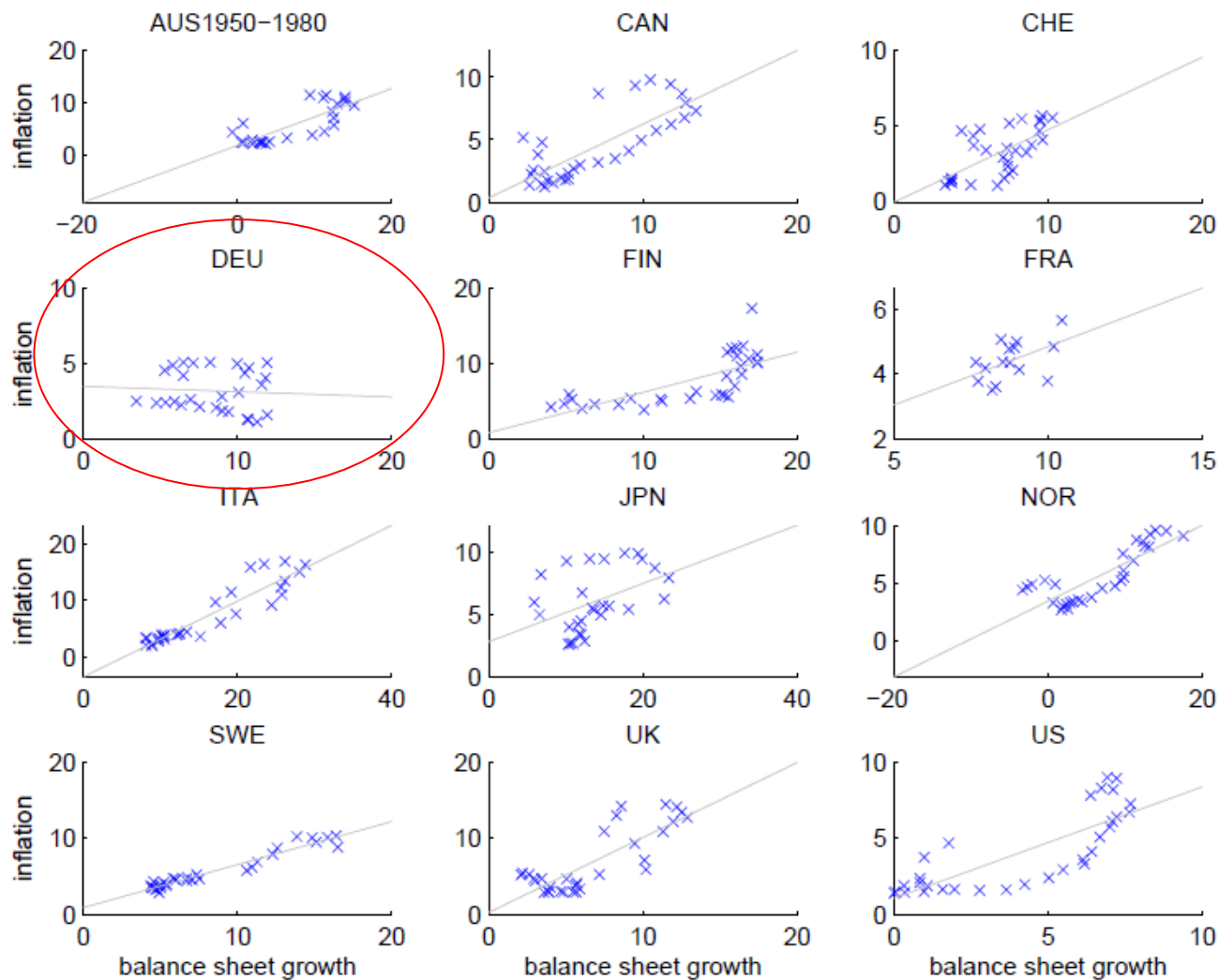


Sources: see text.

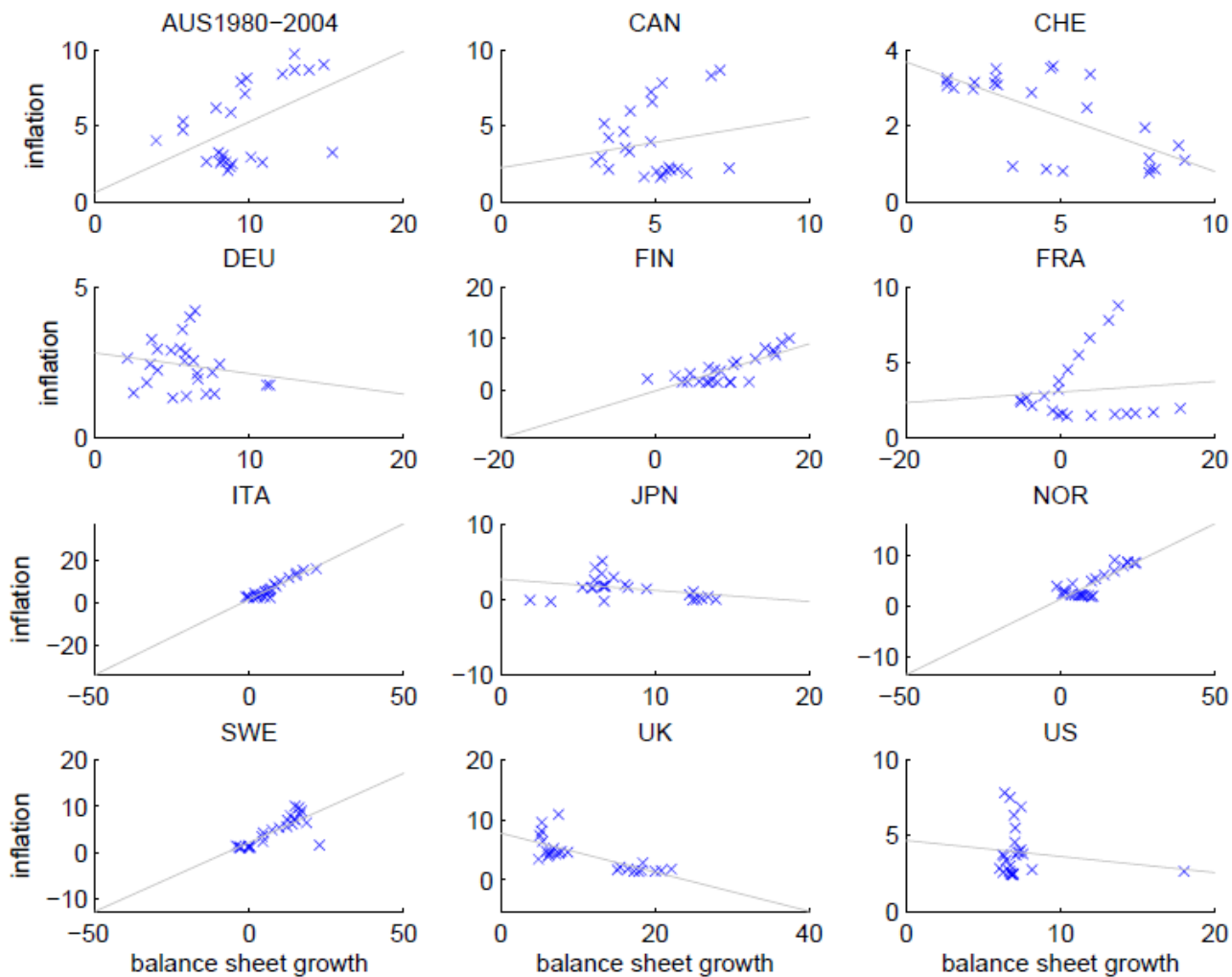
# CB balance sheet expansion was associated with inflation 1950-1980



# CB balance sheet expansion was associated with inflation 1950-1980, with 1 exception



But the relationship with inflation broke down after 1980 (maybe because of rising CB credibility)



## Reconstructing the history of CB balance sheet expansions and contractions

- We coded any country-year as a major balance sheet expansion (contraction) year if balance sheet size relative to GDP expanded (contracted) by more than 10 percentage points, relative to any previous year in a five-year window.
- We determined start and end dates based on historical sources.
- We included the Federal Reserve's balance sheet reduction between 1947 and 1966, even though it took unusually long to achieve the 10 percentage point reduction.

Of the 23 largest expansions, nearly all were associated with war or financial crisis

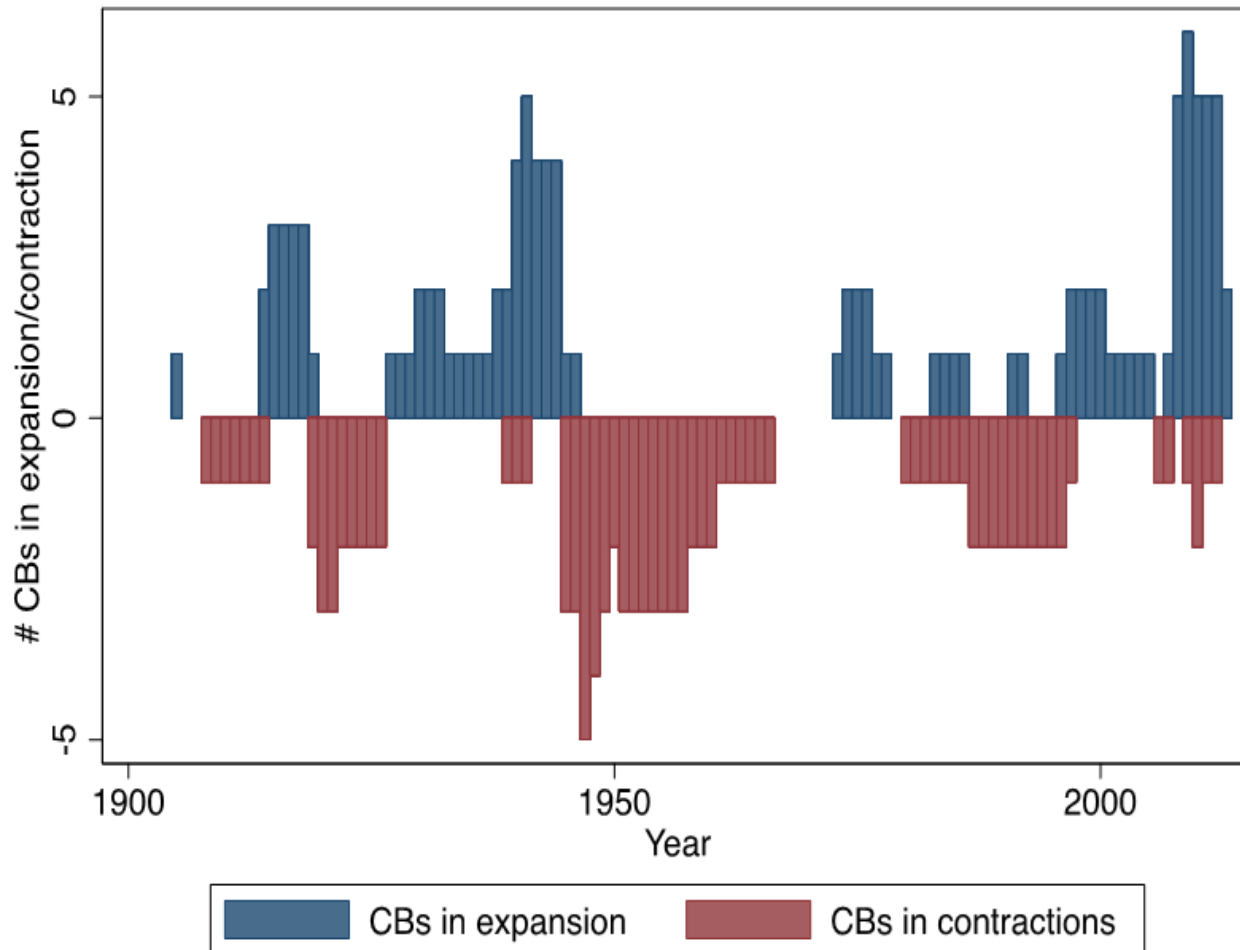
Expansions	Amplitude	Duration	Contractions	Amplitude	Duration
CHE 1930	31.71	9	AUS 1951	-22.63	10
CHE 1996	11.36	5	CHE 1939	-11.24	3
CHE 2008	60.91	5	FIN 1919	-19.01	3
ESCB 2007	17.90	6	FIN 1945	-18.77	4
FIN 1915	16.60	4	FRA 1919	-17.92	8
FIN 1938	10.55	4	FRA 1945	-44.88	5
FRA 1914	23.55	5	FRA 1980	-18.65	17
FRA 1927	19.55	6	ITA 1920	-14.80	7
FRA 1940	75.43	5	ITA 1945	-24.18	3
FRA 1973	16.54	6	JPN 1908	-12.51	7
ITA 1914	14.62	6	JPN 2006	-11.60	2
ITA 1941	16.96	4	NOR 1947	-65.50	11
ITA 1974	10.57	3	NOR 1987	-18.23	6
JPN 1905	13.49	1	NOR 2009	-10.64	4
JPN 1939	20.45	6	SWE 1993	-14.08	5
JPN 1997	20.16	9	SWE 2010	-13.01	1
JPN 2009	14.00	5	USA 1947	-13.22	20
NOR 1940	75.40	7			
NOR 1983	23.39	4			
SWE 1991	11.80	2			
SWE 2008	16.04	2			
GBR 2008	22.97	5			
USA 2008	14.36	6			



Note that the biggest expansions and contractions were associated with World War II

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# Expansions and contractions are clustered around major geopolitical and financial crises



Source: see text.

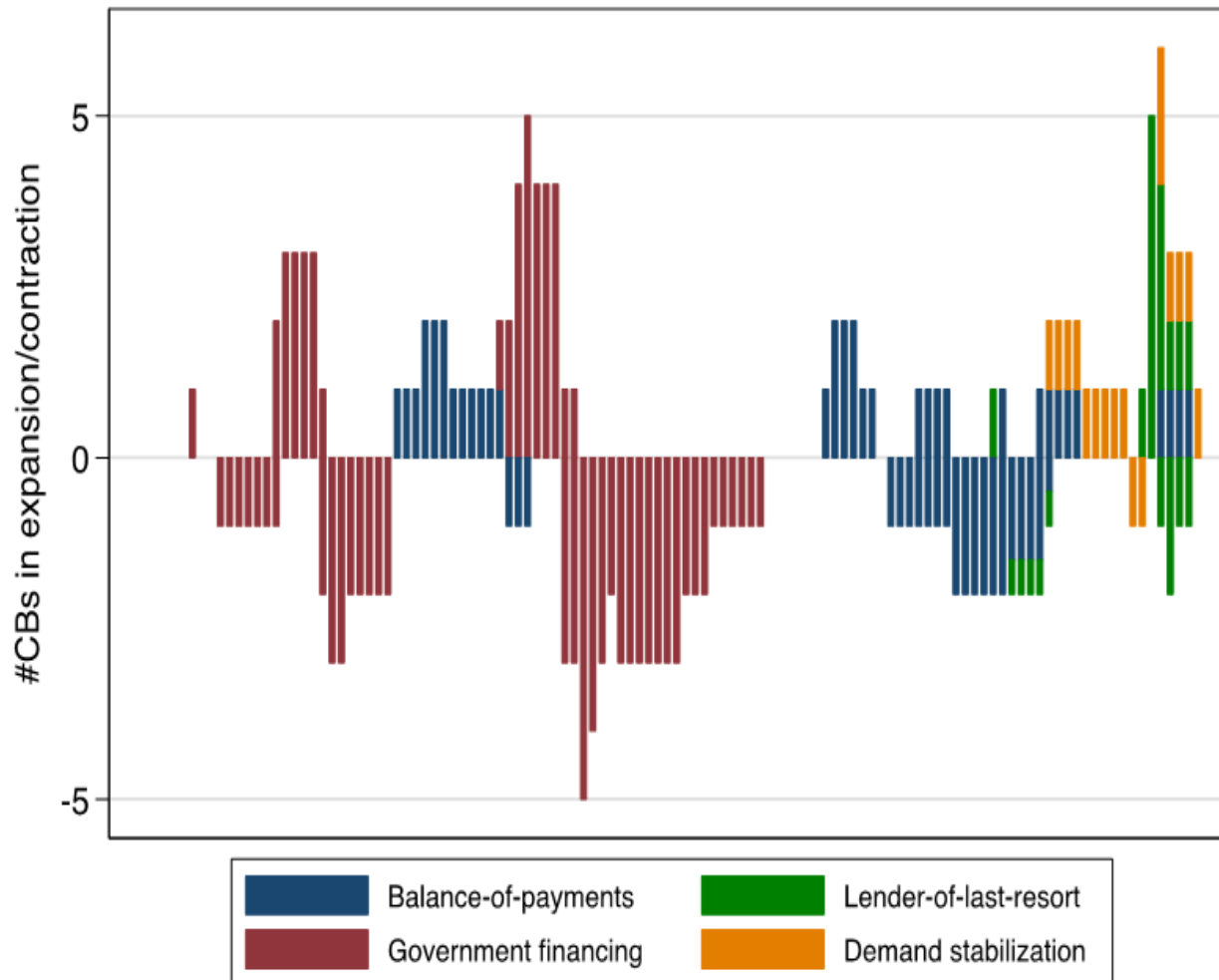
## An attempt at classification: Types of CB balance sheet expansion

1. Foreign exchange and balance of payments (FX) e.g. under gold standard, when CBBS is a function of balance of payments and FX target.
2. Government financing (GF) e.g., in wartime or under conditions of CB “nationalization”.
3. Lender-of-last-resort and market-functioning (LLR) e.g., all efforts to prevent banking panics or restore credit intermediation.
4. Demand stabilization (DS) e.g., LSAPs aimed at stimulating aggregate demand.

# The changing drivers of CB balance sheet expansion: from FX to GF to LLR to DS

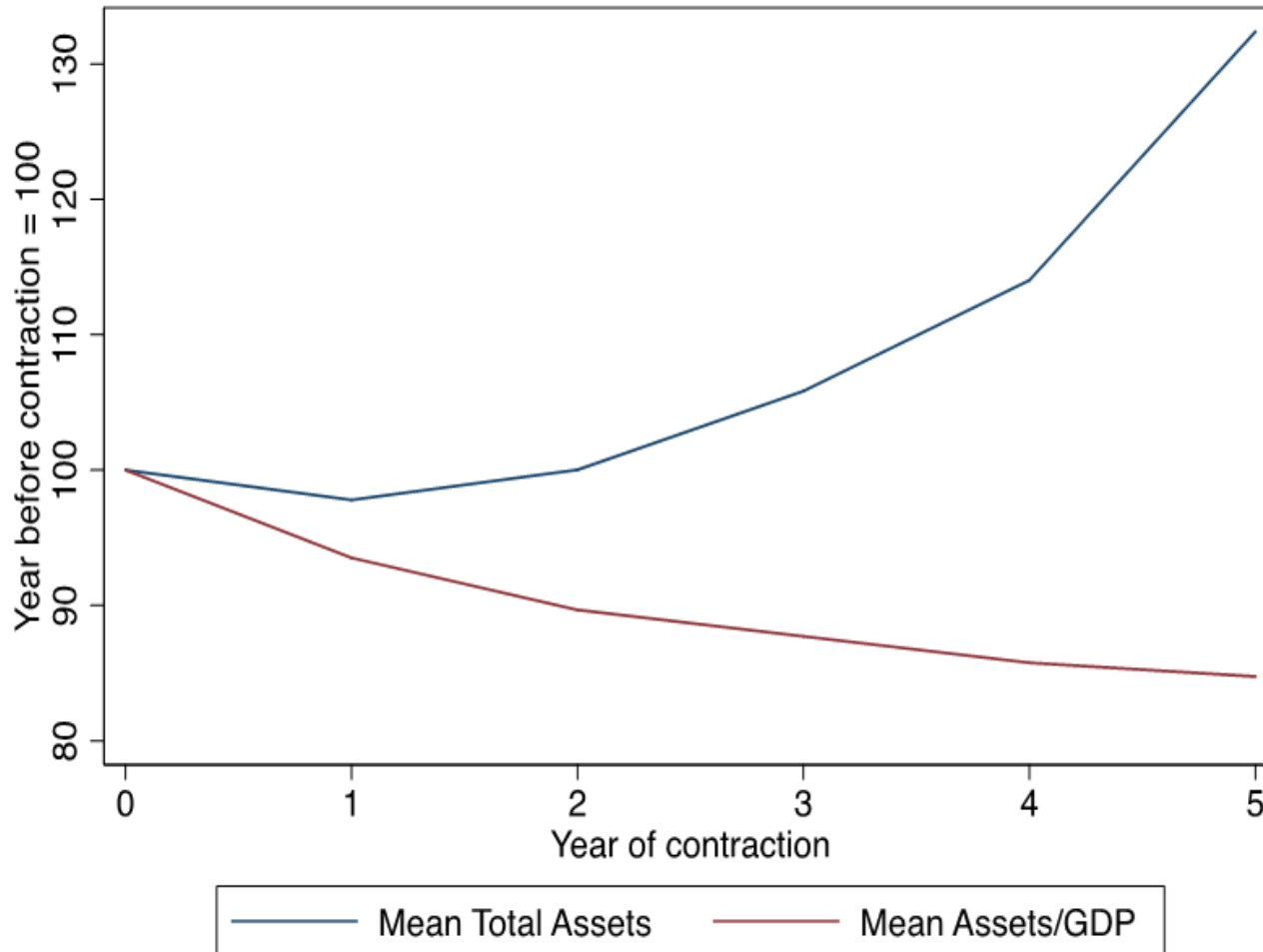
Expansions	FX	GF	LLR	DS
CHE 1930	X			
CHE 1996	X			
CHE 2008	X		X	
ESCB 2007			X	
FIN 1915		X		
FIN 1938		X		
FRA 1914		X		
FRA 1927	X			
FRA 1940		X		
FRA 1973	X*			
ITA 1914		X		
ITA 1941		X		
ITA 1974	X*			
JPN 1905		X		
JPN 1939		X		
JPN 1997				X
JPN 2009				X
NOR 1940		X		
NOR 1983	X			
SWE 1991	X		X	
SWE 2008			X	
UK 2008			X	X
US 2008			X	X

Notice once again the clusters, but also the changing drivers



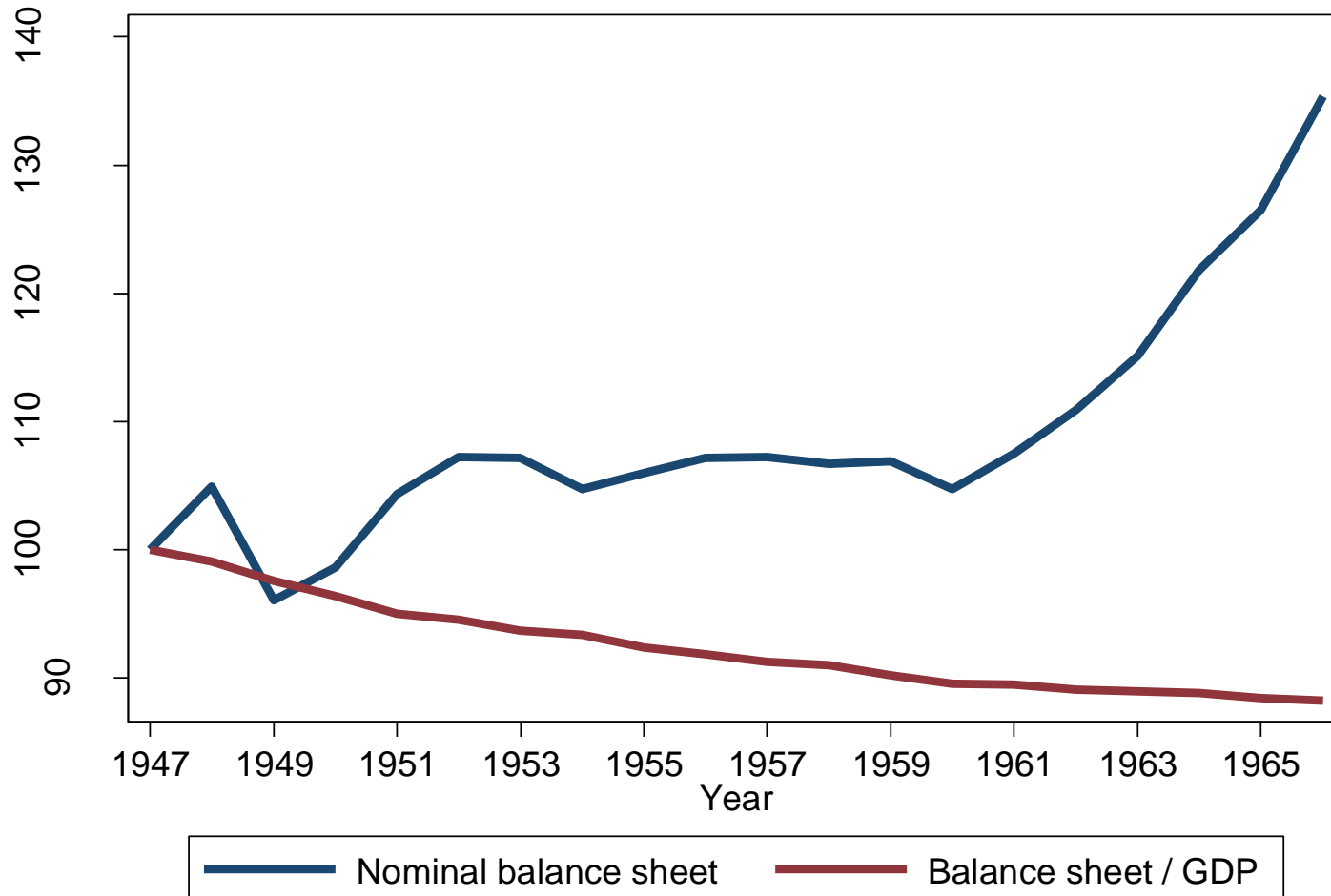
Source: Own classification.

# How CB balance sheets usually contract: Slowly and relative to GDP



Source: see text.

# A case study in CB balance sheet management: The Fed during and after WWII



Source: see text.

## Key points to note about 1939-1950: How war finance led to a system of *interest rate* targets

- From Sept. 1939 the Fed targeted long- as well as short-term interest rates:
  - Target for Treasury bills of 3/8%
  - Tacit ceiling for long-term bonds 2.5%
  - Fed was mostly buying 90-day T-bills and up to 1 year T-certificates
- Combined with controls on consumer credit, higher reserve requirements, price and wage controls (and fall in velocity).
- Continued until July 1947, but Fed continued to intervene to prevent “disorderly conditions” in bond market.
  - Partly a reflection of Keynesian “revolution”, partly a “target zone” to protect U.S. banks from a fall in bond prices.
- But Korean War and short 1953-4 recession led to a change in public expectations.
  - Fears of inflationary consequences of continued purchases of bonds led to a revolt by the Fed against the Treasury and White House.



# Key points to note about 1950-1959: How the “Accord” only partially restored Fed independence

- President Truman and Treasury Secretary Snyder lent heavily on Fed Chairman McCabe
  - Truman: “I hope the Board will ... not allow the bottom to drop from under our securities. If that happens that is exactly what Mr. Stalin wants.”
- The Accord of February 1951 was a draw:
  - McCabe was replaced by Assistant Sec. Martin, who believed in independence “within the government”.
  - Fed had to support March-April 1951 conversion as well as Treasury financings in 1953, 1955 and 1958.
  - Martin’s policy of monitoring “free reserves” (excess reserves less member bank borrowing) was not rule-based (the “even keel”, “leaning into the wind”) and in practice pro-cyclical.
  - Tools: regular adjustments of reserve requirements and discount rate.
- Results were good (growth high, inflation low, recessions short); balance sheet stabilized in nominal terms, shrank relative to GDP
  - But was this just luck, not least because Eisenhower ran surpluses?
  - Did Martin sow seeds of the “Great Inflation”?

# Conclusions: Lessons from war and post-war monetary policy

- The nearest thing to the central bank balance sheet expansions since 2008 was during World War II.
- The object in our time has been LLR and DS. The object in the 1940s was GF.
- But regardless of intent, certain consequences are similar:
  - LSAPs have consequences for government finance, so normalization may lead to conflicts of interest with executive and legislature.
  - Expectations may change (perhaps because of political shocks).
  - Monetary policy has quietly reverted to the eclectic style of the 1950s.
- Recent increase of CBBS relative to financial sector represents a return to pre-financialization levels.
- Rapid nominal contraction of CBBS is unusual.
- Near-term inflation risks from CBBS expansion seem low, but *the threat to long-run price stability is real when fiscal deficits are persistent and central bank independence is compromised.*