BETTING THE HOUSE

Òscar Jordà[⋆] Moritz Schularick[†] Alan M. Taylor[§]

Hong Kong Institute for Monetary Research

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[⋆]Federal Reserve Bank of San Francisco; University of California, Davis
[†]University of Bonn; CEPR and CESIfo
[§]University of California, Davis; NBER; CEPR

We need to talk about house prices

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June 11, 2014 7:00 pm

IMF sounds global housing alarm

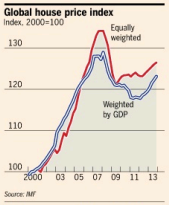
By Robin Harding in Washington

The world must act to contain the risk of another devastating housing crash, the International Monetary Fund warned on Wednesday, as it published new data showing house prices are well above their historical average in many countries.

The warning from the IMF shows how an acceleration in global house prices from already high levels has emerged as one of the major threats to economic stability, with countries making limited progress in keeping them under control.

Min Zhu, the IMF's deputy managing director, said the tools for containing housing booms were "still being developed" but that "this should not be an excuse for inaction".

House prices "remain well above the historical averages for a majority of countries" in relation to incomes and rents, Mr Zhu said in a speech to the Bundesbank last week, which was only released on Wednesday because it clashed with a European Central Bank announcement.



"This is true for instance for Australia, Belgium, Canada, Norway and Sweden," he said.

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8:53 am ET Apr 22, 2014 EUROPE

Scandinavia Is Looking Scary

There's something unsettling about Scandinavia.

No, not the local penchant for heavy metal rock, gloomy crime literature and angst-ridden cinema. But rather with the region's economies.

The trio of countries that form **Scandinavia**–Denmark, Norway and Sweden–have for years been the heartland of some of the world's highest standards of living. But it seems the pristine facade has been built on rather wobbly foundations.

Even though none is a member of the euro zone and Norway isn't even a member of the European Union, they're all manifesting a number of the single currency's problems, **not least falling inflation**. At the same time, households in all three countries carry huge debt burdens while all have also manifested symptoms of housing bubbles during recent years.

In March, Sweden slipped into deflation, with prices contracting 0.4% on the year, having long been on a downtrend. Denmark's inflation rate remains positive, but only just, with inflation running at 0.2% in the same month. Even Norway, which has seen higher rates of price growth during the past year has been seeing a downward trend in price pressures–its annual inflation rate in March was 1.8%, having averaged 2.2% during the past year.

Some economists have recently argued that Sweden has brought deflation and sub-par growth upon itself because its central bank, the Riksbank, has kept monetary policy too tight. But it seems the Riksbank had its eyes on other problems.

Sweden seems to be in the throes of **a housing bubble**. Prices are up nearly 70% on where they were at the start of 2005. Relative to average incomes, they are 17% above their long term average, and rents are more than 30% above. Given that it's a country with a small population but vast tracts of land, any significant divergence in prices from other economic trends, like nominal GDP growth, ought to set central bankers' alarms ringing. And when it's accompanied by high levels of debt, those alarms ought to keep them awake at night.

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Business > Mark Carney

Mark Carney: rising house prices pose biggest risk to recovery

Bank of England governor says shortage of homes is driving up prices, with housebuilding at half the rate in his native Canada

Phillip Inman, economics correspondent
The Guardian, Sunday 18 May 2014

Jump to comments (859)

The governor of the Bank of England, Mark Carney, said the UK housing market had 'deep, deep structural problems'. Photograph: Lefteris Pitarakis/PA

Possible overvaluation of residential property in German cities

Housing prices in German cities have been rising so strongly since 2010 that a possible overvaluation cannot be ruled out. This is the finding of an article contained in the Bundesbank's most recent Monthly Report. According to this article, there are no signs of substantial exaggerations in the housing market as a whole. Nevertheless, price rises have been observed in urban centres, in particular, which "are difficult to justify based on fundamental factors", the Bundesbank says.

Over the past three years, the prices for houses and apartments have risen by a total of 8¼%. This is due to a "marked gap between property prices in urban and rural areas", the article explains. In Germany's largest cities, prices of apartments have risen by more than one-quarter during this period. The Bundesbank says that this could "give rise to fears of a broad-based property price boom".

'Euphoric' capital markets are out of step with reality, warns BIS

By Sam Fleming and Claire Jones Author alerts

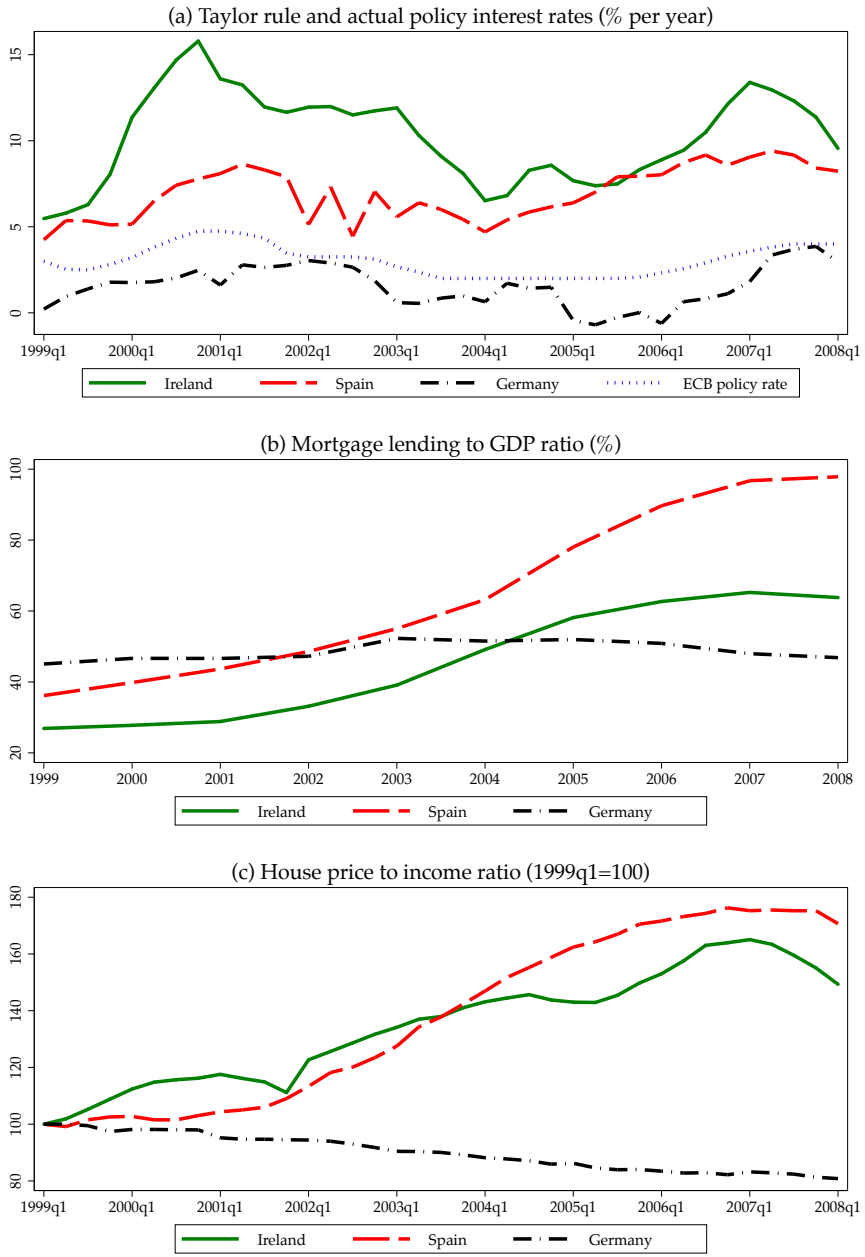
Überteuerte Immobilien

Am Häusermarkt braut sich etwas zusammen

Welchen Einfluss hat eine lockere Geldpolitik auf die Kreditvergabe, die Immobilienpreise und schließlich Finanzkrisen? Das hat eine Langzeitstudie über einen Zeitraum von 140 Jahren untersucht. Die Ergebnisse sind beängstigend.

18.06.2014, von JOHANNES PENNEKAMP

A European parable



What are the side-effects of loose monetary policy?

1. Do low interest rates cause booms in mortgage lending and in house prices?
2. Do these booms in turn increase the odds of a financial crash?

What we do: economic history

- **As before, we turn to large-sample historical evidence, rather than rely on theory or small-samples**

- **Two novel historical datasets:** large data collection effort to assemble a panel of annual data on disaggregated lending + house prices for 17 industrial countries from 1870-2012

- **Exploit a natural experiment for effects of monetary conditions on house prices:** exchange rate peg + open capital markets $\rightarrow$ exogenous fluctuations in monetary conditions

What we find

1. **Finance is not what it used to be**
   After WW2, mortgage lending and home ownership rise strongly. Mortgages became dominant share of bank lending: from ⅓ to ⅔

2. **We need to take the side-effects of loose monetary policies seriously**
   Low interest rates $\rightarrow$ borrowing & house prices

3. **Mortgages & house prices $\rightarrow$ financial crises**
   Increased mortgage lending and house price booms are associated with an increased likelihood of financial crises

What are the implications for the current debate?

1. **Higher interest rates are not necessarily the answer**
   Central banks may need more than one tool to safeguard financial stability.

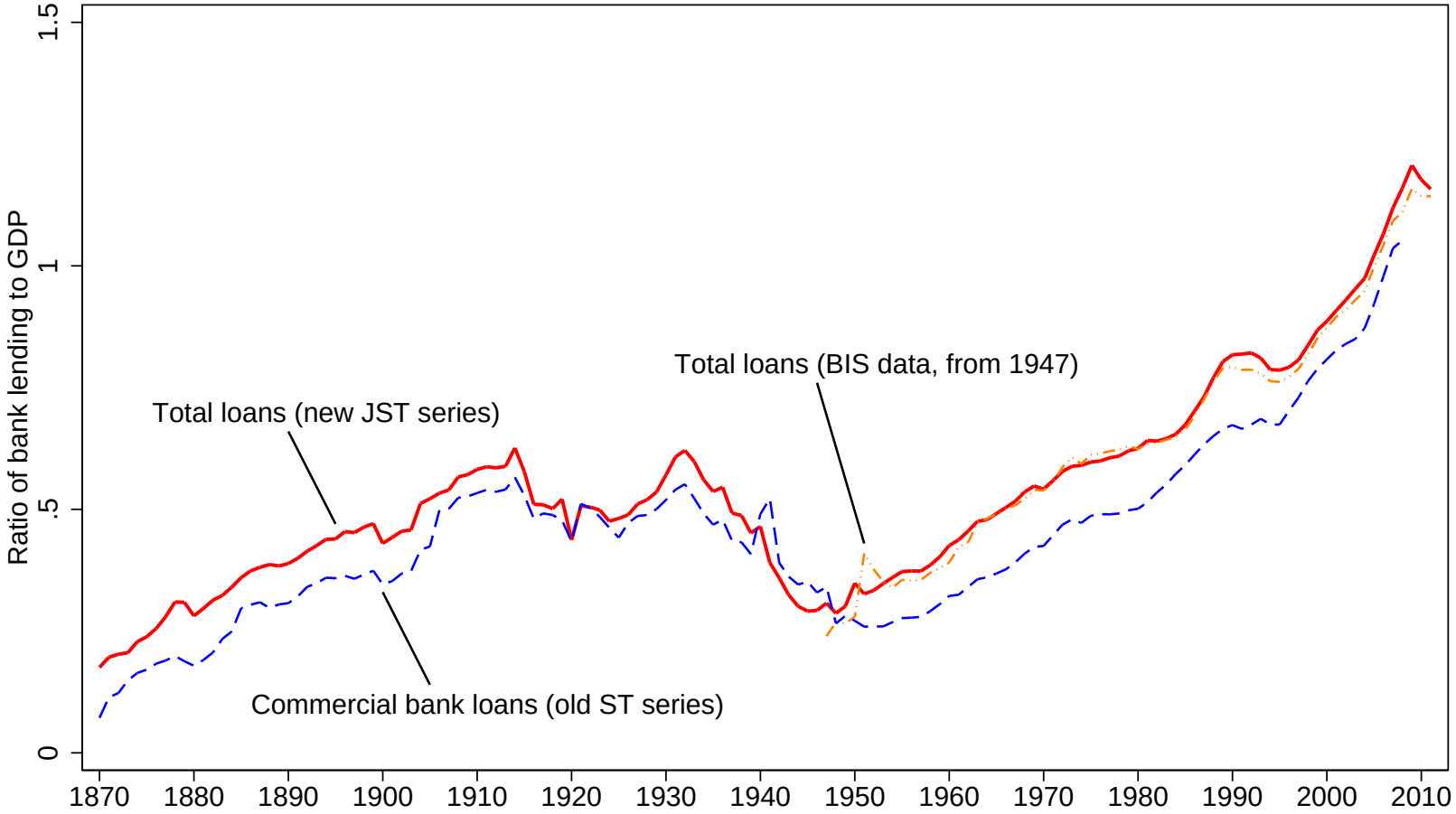
2. **Credit matters as much as prices**
   Crises are typically credit booms gone bust. A rapid pick-up in mortgage borrowing would be a reason for concern.

New annual data, $N = 17,143$ years

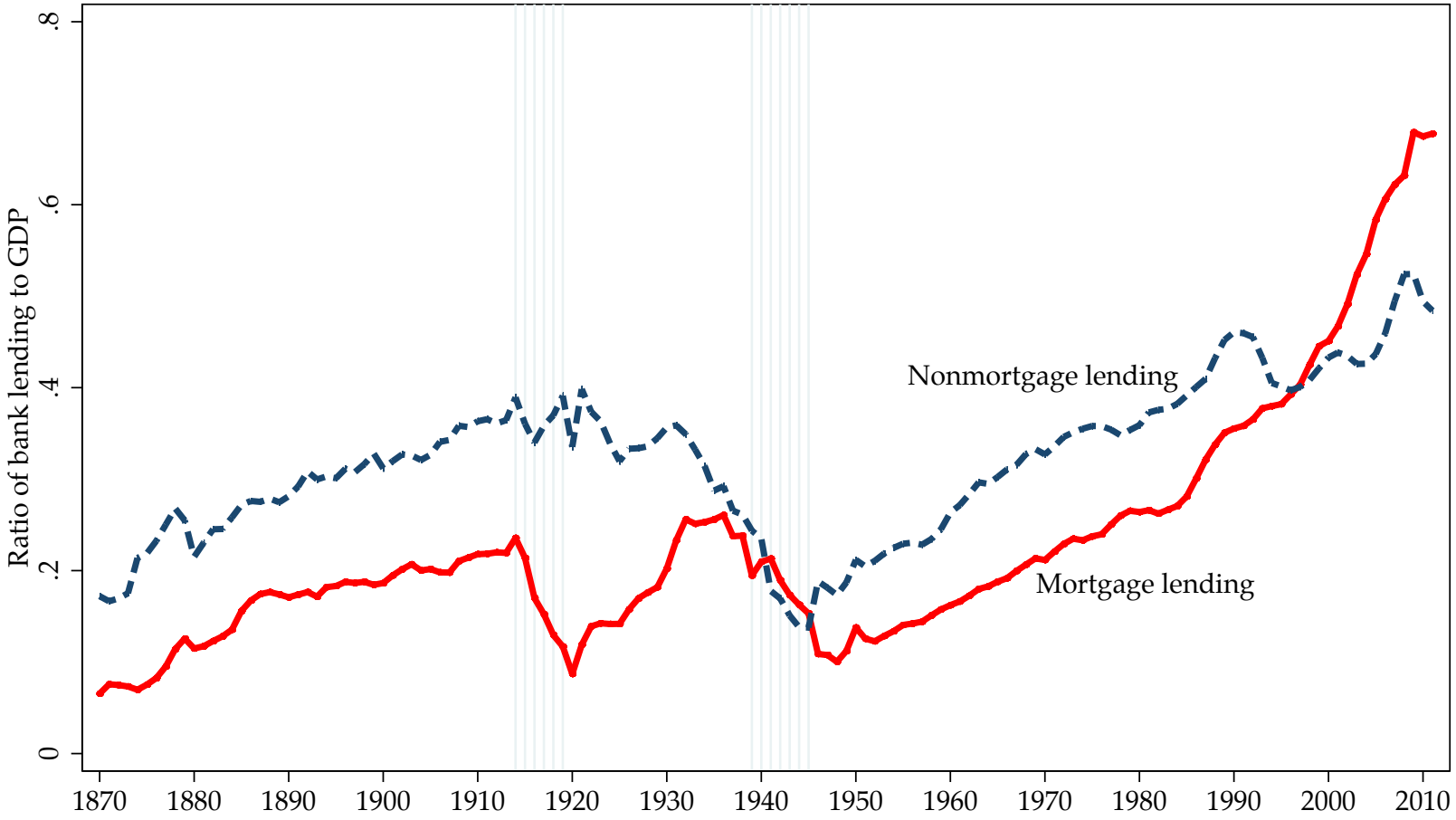
- Real estate credit: Jordà, Schularick and Taylor (2014)
- House prices: Knoll, Schularick and Steger (2014)

Country	Mortgage loans	House prices	Type of house price index
Australia	1870–2011	1870–2012	Median price; partly mix-adj.
Belgium	1885–2011	1878–2012	Median price; partly mix-adj.
Canada	1874–2010	1921–2012	Avg. prices
Switzerland	1870–2011	1900–2012	Avg. prices; partly mix-adj.
Germany	1883–2011	1870–2012	Avg. prices; partly mix-adj.
Denmark	1875–2010	1875–2012	Avg. prices; SPAR
Spain	1904–2012	1970–2012	OECD after 1970 only
Finland	1927–2011	1905–2012	Av. sq. m. price; partly mix-adj. hed.
France	1870–2010	1870–2012	Repeat sales; partly mix-adj. hed.
U.K.	1880–2011	1899–2012	Avg. prices; partly mix-adj.
Italy	1870–2012	1970–2012	OECD after 1970 only
Japan	1893–2011	1913–2012	Avg. prices; partly mix-adj.
Netherlands	1900–2011	1870–2012	Repeat sales; partly SPAR
Norway	1870–2010	1870–2012	Repeat sales; hedonic
Portugal	1920–2012	——	No data
Sweden	1871–2011	1870–2012	Repeat sales; hedonic
U.S.	1896–2011	1890–2012	Repeat sales; partly mix-adj.

Bank credit in 17 countries
1870-2012

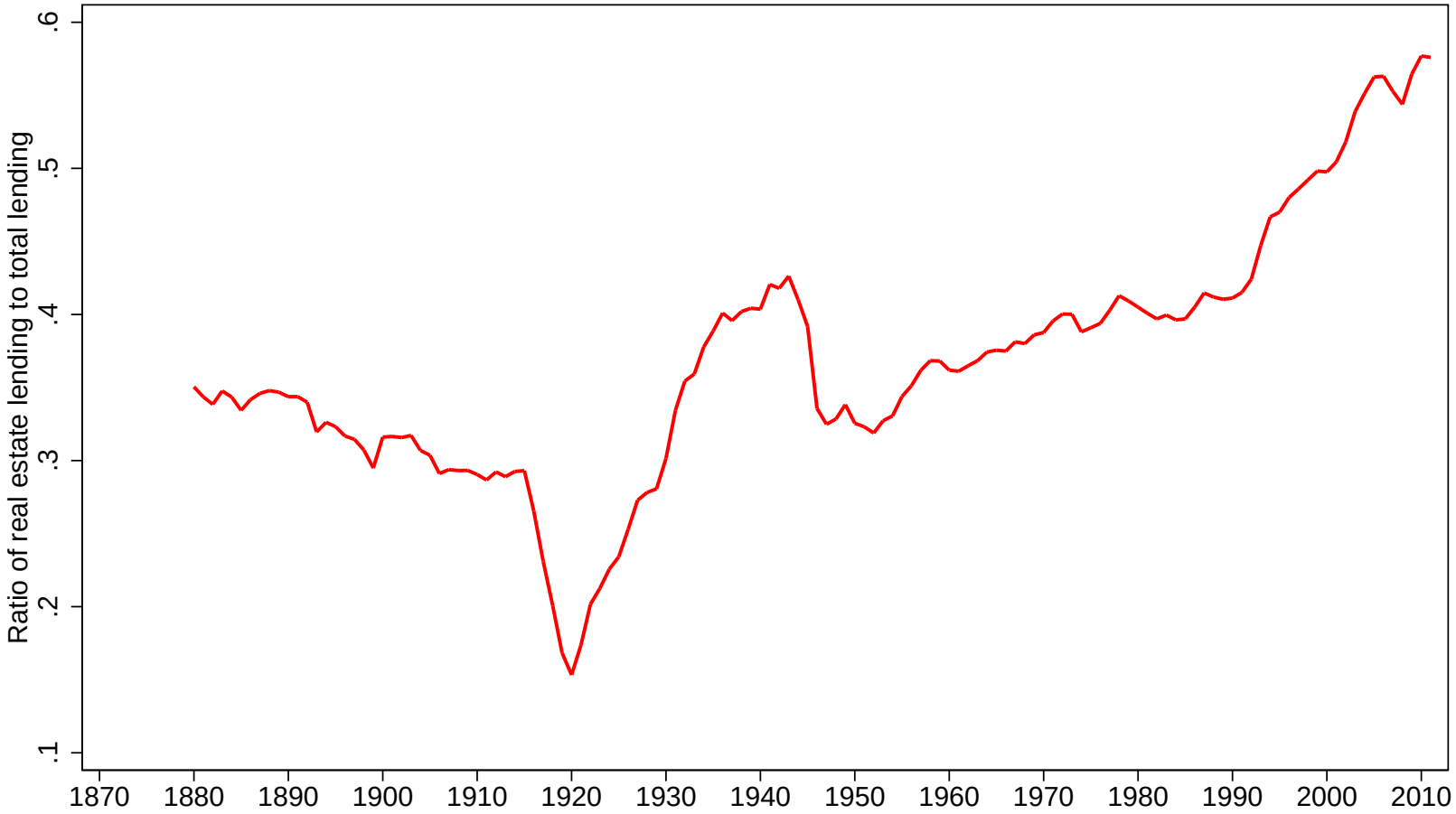


Betting the House



Lending is now mostly about mortgages

Share of real estate in total lending (17 country average)



Banks no longer do what you think they do

1. Reality check: the textbook model vs. modern banking.
2. What advantages do banks have in providing mortgage credit?

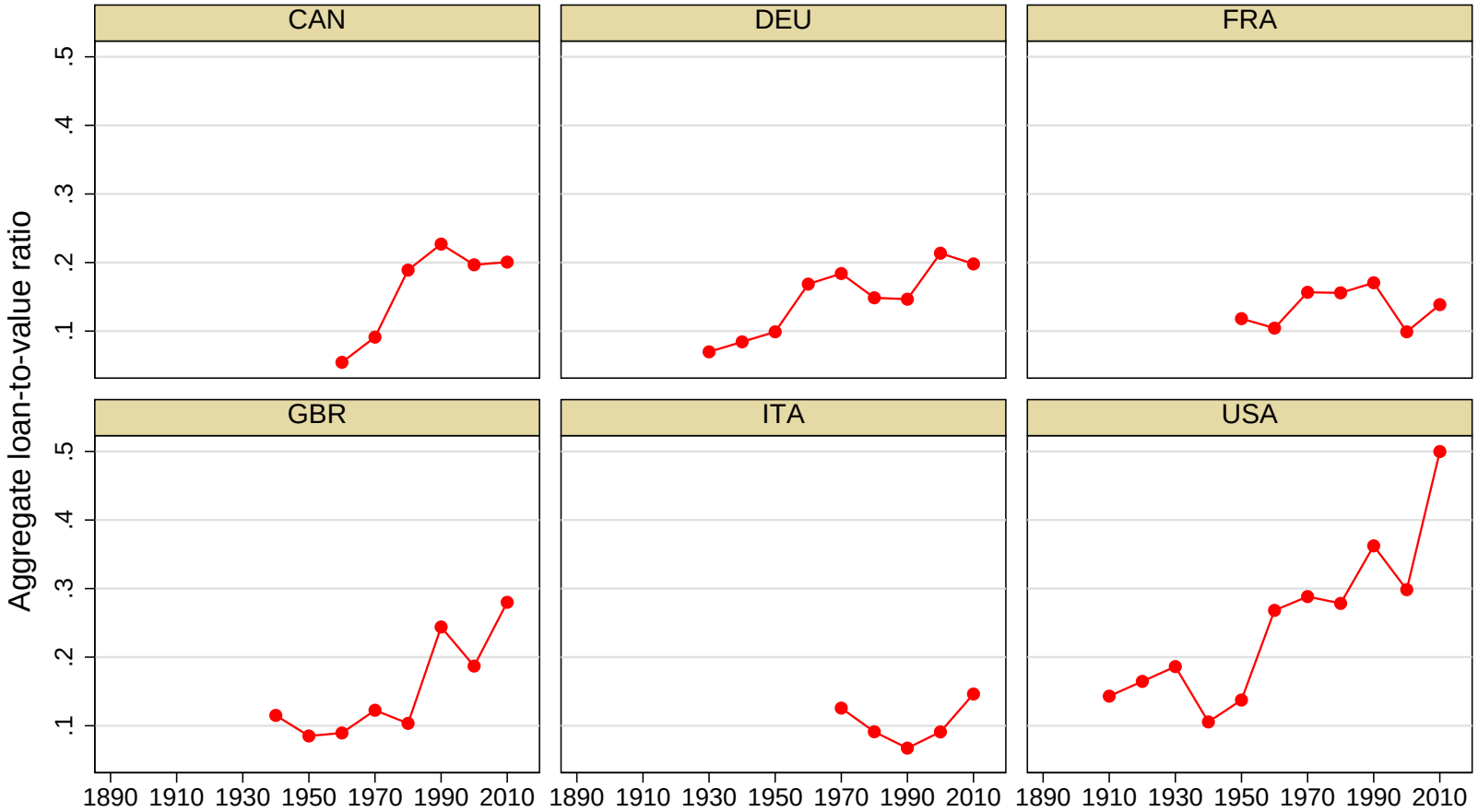
Financialization of the economy: 1960-2010

The leveraging of households

Country	(1) Total lending	(2) Real estate	(3) Unsecured	(4) Households	(5) Business
Spain	1.35	0.97	0.38	0.75	0.60
Denmark	1.31	0.98	0.33	0.74	0.57
Australia	1.13	0.70	0.42	0.77	0.35
Great Britain	0.89	0.74	0.16	0.72	0.17
USA*	0.66	0.53	0.13	0.49	0.17
Canada	0.65	0.35	0.30	0.54	0.10
France	0.61	0.41	0.21	0.45	0.17
Finland	0.61	0.26	0.35	0.43	0.19
Belgium	0.55	0.28	0.27	0.30	0.24
Italy	0.55	0.44	0.11	0.39	0.16
Germany	0.51	0.30	0.21	0.21	0.29
Switzerland	0.48	0.74	-0.26	0.50	-0.03
Japan	0.32	0.39	-0.07	0.27	0.05
Average	*0.78*	*0.55*	*0.23*	*0.53*	*0.25*
Fraction of average	*1.00*	*0.71*	*0.29*	*0.68*	*0.32*

USA* includes credit market debt

Real estate leverage
Aggregate loan-to-value ratios

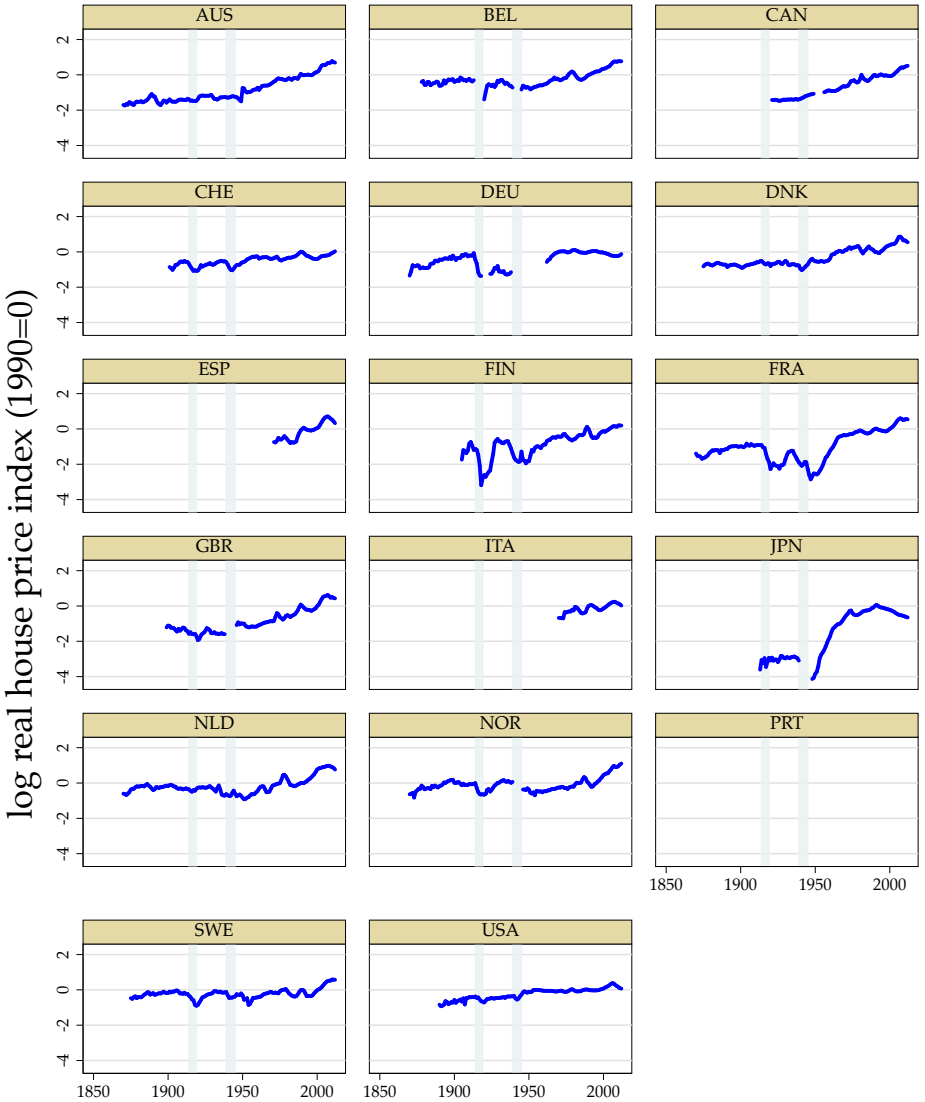


The rise of home ownership

	CAN	GER	FRA	ITA	CHE	U.K.	U.S.	Avg.
1900							47	
1910							46	
1920						23	46	
1930							48	
1940	57					32	44	
1950	66	39	38	40	37	32	47	43
1960	66	34	41	45	34	42	62	46
1970	60	36	45	50	29	50	63	48
1980	63	39	47	59	30	58	64	51
1990	63	39	55	67	31	68	64	55
2000	66	45	56	80	35	69	67	60
2010	69	45	58	82	37	64	65	60

House prices

CPI deflated



What is the effect of loose monetary conditions on lending and house prices?

Local projection: How do changes in interest rates affect the future path of lending and house prices?
y = response variable, r = impulse variable (interest rate)

$$\Delta_h y_{it-1} = \alpha_i^h + \beta^h \Delta r_{it} + \Delta W_{it} \Gamma^h + u_{it+h}$$

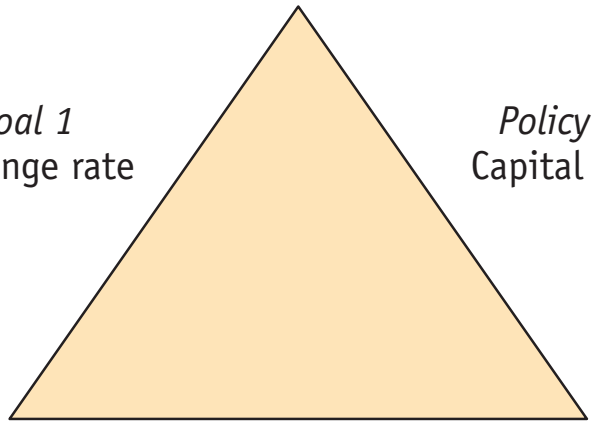
But monetary policy reacts to economic developments.
We need exogenous variation in interest rates for a real test.

Open economy trilemma

Policy choice
No monetary policy autonomy
Sacrifice goal 3 to attain 1 & 2

Policy goal 1
Fixed exchange rate

Policy goal 2
Capital mobility



Policy goal 3
Monetary policy autonomy

Policy choice
Capital controls
Sacrifice goal 2 to attain 3 & 1

Policy choice
Floating exchange rate
Sacrifice goal 1 to attain 2 & 3

The trilemma provides the instrument

Basic logic: under a fixed exchange rate regime and with open capital markets, interest rates in the home country are determined 'abroad', but the base country does not pay attention to economic conditions in the pegging country.

$$\Delta r_{it} = a + b[PEG_{it} \times KOPEN_{it} \times \Delta r^*_{it}] + u_{it}$$

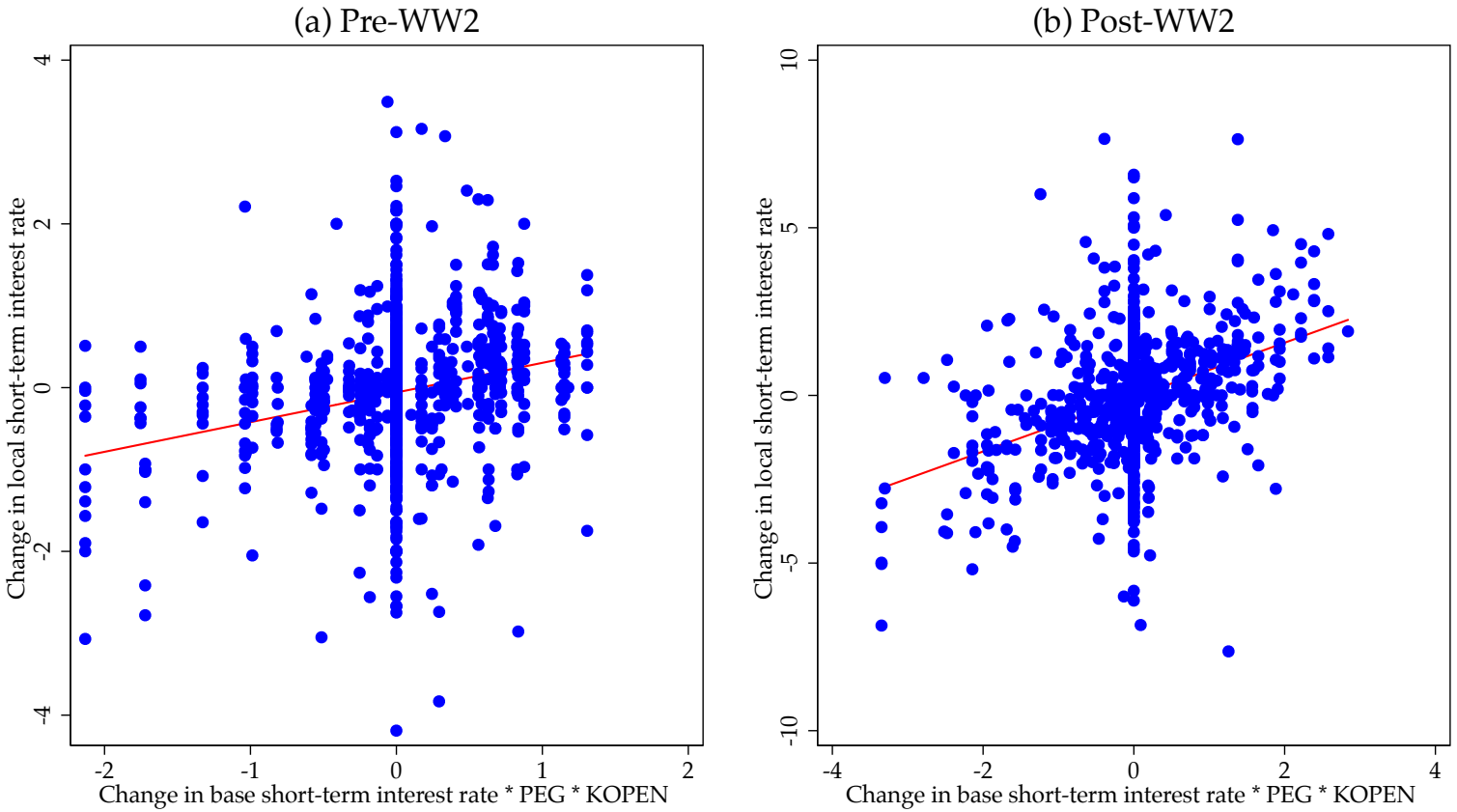
Base country	Pre-WW1	Interwar	Bretton Woods	Post-BW
UK (gold standard/BW base)	All countries		Sterling bloc: AUS, CAN	
UK/US/France composite (gold standard base)		All countries		
USA (BW/Post-BW base)			All other countries	Dollar bloc: AUS, CAN, CHE JPN, NOR
Germany (EMS/ERM/ Eurozone base)				All other countries

Base and home short-rates are correlated

Bivariate scatters

$$\Delta r_{it} = a + b[PEG_{it} \times KOPEN_{it} \times \Delta r^*_{it}] + u_{it}$$

Obstfeld/Shambaugh/Taylor simulations: $b < 1$ unless peg is ultra-hard (no band)



The instrument is relevant

$$\Delta r_{it} = a + b[PEG_{it} \times KOPEN_{it} \times \Delta r^*_{it}] + \Theta X_{it} + u_{it}$$

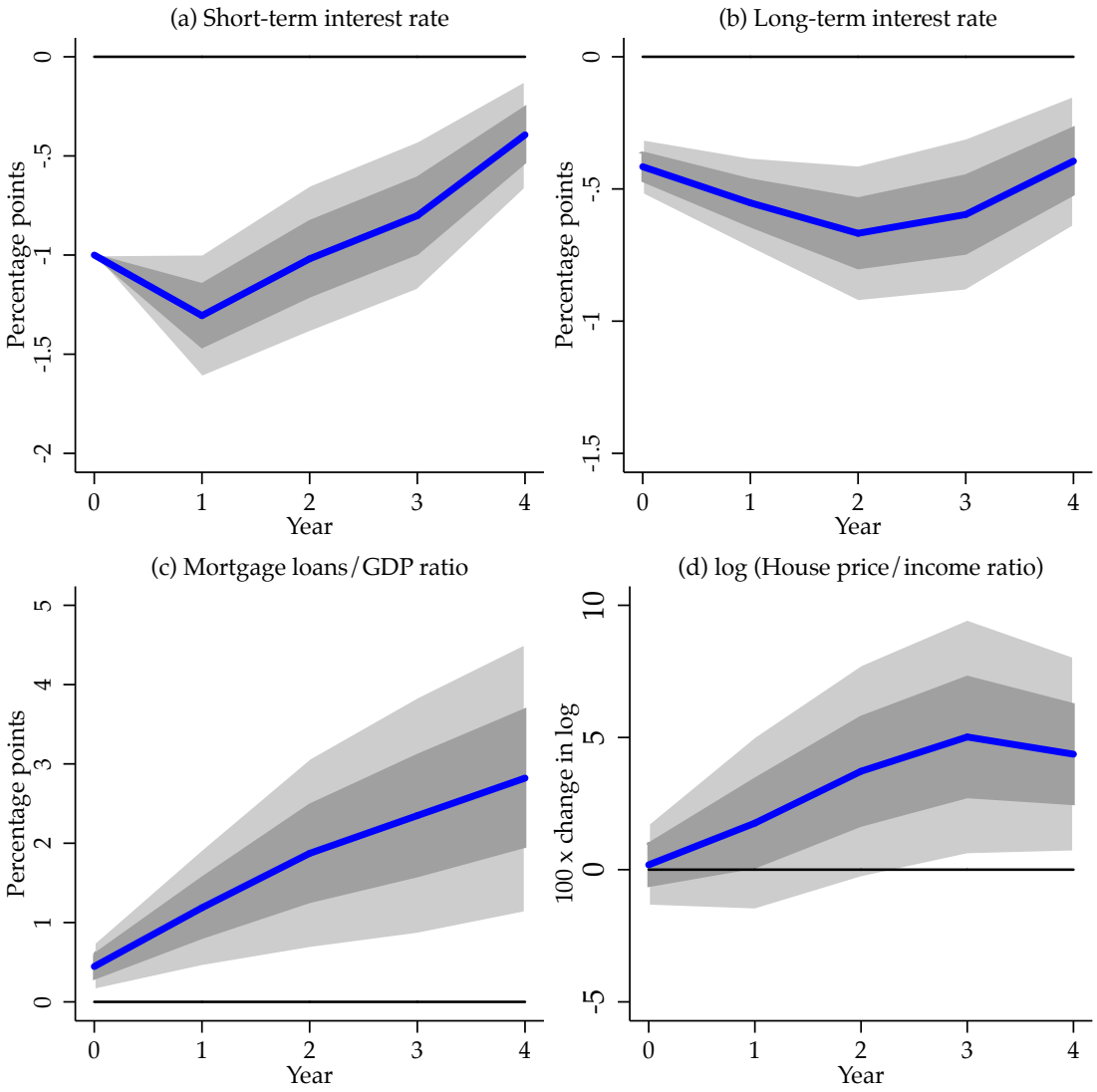
Dependent variable: short-term interest rate

	No Controls			Controls		
	(1) All Years	(2) Pre-WW2	(3) Post-WW2	(4) All Years	(5) Pre-WW2	(6) Post-WW2
$\hat{b}$	0.68***	0.36***	0.81***	0.43***	0.29***	0.46***
	(0.06)	(0.11)	(0.06)	(0.04)	(0.06)	(0.06)
F-statistic	150.17	11.59	169.51	37.16	9.26	29.84
Observations	1875	876	999	1220	375	845

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Country-based cluster-robust standard errors in parentheses. The dependent variable is the short-term interest rate regressed on the instrument, fixed effects and when appropriate, controls. The set of controls includes: (i) the change in short-term interest rate; (ii) the change in long-term interest rate; (iii) the change in mortgages to GDP ratio; (iv) the change in real house prices as a ratio to per capita income; (v) real per capita GDP growth; (vi) the change in the investment to GDP ratio; (vii) the change in the ratio of non-mortgage loans to GDP ratio; (viii) CPI inflation; and (ix) the current account to GDP ratio. We include contemporaneous terms and two lags. The full sample starts in 1870 and ends in 2010. The pre-WW2 sample ends in 1938. The post-WW2 sample begins in 1946. World Wars omitted from all samples. See text.

Illustration

"Boom experiment": exogenous perturbation in short-term rate of −100 bps



Prices and lending respond

Baseline results: full control set, all years

Responses	Year $h=0$	Year $h=1$	Year $h=2$	Year $h=3$	Year $h=4$
Δ_h *Short-term interest rate*	1.00	1.31***	1.02***	0.80***	0.39***
		(0.16)	(0.19)	(0.19)	(0.14)
Kleibergen-Paap		26.64	26.59	26.43	27.10
Δ_h *Long-term interest rate*	0.42***	0.55***	0.67***	0.60***	0.39***
	(0.05)	(0.09)	(0.13)	(0.15)	(0.13)
Kleibergen-Paap	35.58	35.24	35.29	34.66	35.21
Δ_h *Mortgage Loans/GDP*	-0.45***	-1.19***	-1.87***	-2.35***	-2.82***
	(0.15)	(0.38)	(0.61)	(0.76)	(0.86)
Kleibergen-Paap	28.44	28.08	27.90	27.97	28.49
Δ_h log *(House Price/Income)*	-0.18	-1.76	-3.72*	-5.02**	-4.37**
	(0.79)	(1.67)	(2.05)	(2.27)	(1.88)
Kleibergen-Paap	27.65	27.23	27.01	27.01	27.53

Notes: Δ_h denotes change from year $t-1$ to $t+h$. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Country-based cluster-robust standard errors in parentheses. Coefficient estimates of fixed effects and controls not reported. The set of controls includes: (i) the change in short-term interest rate; (ii) the change in long-term interest rate; (iii) the change in mortgages to GDP ratio; (iv) the change in real house prices as a ratio to per capita income; (v) real per capita GDP growth; (vi) the change in the investment to GDP ratio; (vii) the change in the ratio of non-mortgage loans to GDP ratio; (viii) CPI inflation; and (ix) the current account to GDP ratio. We include contemporaneous terms and two lags. The full sample starts in 1870 and ends in 2010. Kleibergen and Paap (2006) statistic for weak instruments reported. World Wars omitted. See text.

Interest rates, lending and house prices

Larger effects than naive estimation would suggest

Responses		Year $h=0$	Year $h=1$	Year $h=2$	Year $h=3$	Year $h=4$
Δ_h *Short-term interest rate*	OLS	1.00	0.69***	0.45***	0.38***	0.35***
			(0.06)	(0.04)	(0.05)	(0.07)
	IV	1.00	1.31***	1.02***	0.80***	0.39***
			(0.16)	(0.19)	(0.19)	(0.14)
Δ_h *Long-term interest rate*	OLS	0.34***	0.33***	0.32***	0.26***	0.26***
		(0.03)	(0.04)	(0.04)	(0.03)	(0.03)
	IV	0.42***	0.55***	0.67***	0.60***	0.39***
		(0.05)	(0.09)	(0.13)	(0.15)	(0.13)
Δ_h *Mortgage loans/GDP*	OLS	-0.11***	-0.15**	-0.25***	-0.29**	-0.45***
		(0.04)	(0.06)	(0.08)	(0.11)	(0.15)
	IV	-0.45***	-1.19***	-1.87***	-2.35***	-2.82***
		(0.15)	(0.38)	(0.61)	(0.76)	(0.86)
Δ_h log *House prices/income*	OLS	0.35	0.15	-0.33	-0.67	-0.90
		(0.33)	(0.40)	(0.48)	(0.51)	(0.56)
	IV	-0.18	-1.76	-3.72*	-5.02**	-4.37**
		(0.79)	(1.67)	(2.05)	(2.27)	(1.88)

LP-IV estimated responses

Robustness Check: Excluding controls

Responses	Year $h=0$	Year $h=1$	Year $h=2$	Year $h=3$	Year $h=4$
Δ_h *Short-term interest rate*	1.00	1.34***	1.08***	0.91***	0.76***
		(0.08)	(0.09)	(0.11)	(0.13)
R^2		0.557	0.346	0.280 0.242	
Observations	1875	1852	1823	1795	1769
Δ_h *Long-term interest rate*	0.40***	0.55***	0.64***	0.61***	0.49***
	(0.05)	(0.07)	(0.10)	(0.12)	(0.11)
R^2	-0.054	-0.072	-0.131	-0.122	-0.043
Observations	1788	1764	1743	1723	1705
Δ_h *Mortgage loans/GDP*	-0.20***	-0.54***	-0.85***	-1.11***	-1.41***
	(0.07)	(0.18)	(0.31)	(0.39)	(0.49)
R^2	0.006	-0.014	-0.027	-0.036	-0.037
Observations	1652	1627	1596	1564	1532
Δ_h log *House prices/income*	-0.06	-0.81	-2.00	-2.87**	-2.96**
	(0.52)	(1.02)	(1.26)	(1.40)	(1.22)
R^2	-0.001	-0.011	-0.030	-0.043	-0.022
Observations	1463	1444	1422	1400	1378

LP-IV estimated responses

Robustness check: subsamples

Responses in year 4	(0) All Years	(1) Pre-WW2	(2) Post-WW2	(3) Set $z = 0$ 1946–72	(4) Exclude 1946–72	(5) Exclude 1914–72
Δ_4 *Short-term*	0.39***	0.36**	0.31*	0.36**	0.39**	0.30
interest rate	(0.14)	(0.18)	(0.18)	(0.16)	(0.16)	(0.23)
R^2	0.261	0.344	0.312	0.261	0.266	0.287
Observations	1128	347	781	1128	917	761
Δ_4 *Long-term*	0.39***	0.40***	0.24	0.40***	0.41***	0.36*
interest rate	(0.13)	(0.15)	(0.15)	(0.14)	(0.14)	(0.18)
R^2	0.110	0.312	0.177	0.110	0.113	0.125
Observations	1145	368	777	1145	938	779
Δ_4 *Mortgage*	-2.82***	-1.94	-2.67***	-2.95***	-3.10***	-3.47***
loans/GDP	(0.86)	(1.32)	(0.91)	(0.95)	(0.93)	(1.06)
R^2	0.094	0.173	0.108	0.076	0.103	0.021
Observations	1110	329	781	1110	899	768
Δ_4 log *House*	-4.37**	-1.34	-5.37**	-4.66**	-4.38**	-5.88***
prices/income	(1.88)	(4.82)	(2.12)	(2.14)	(2.04)	(2.25)
R^2	0.114	0.197	0.202	0.108	0.112	0.085
Observations	1136	355	781	1136	925	780

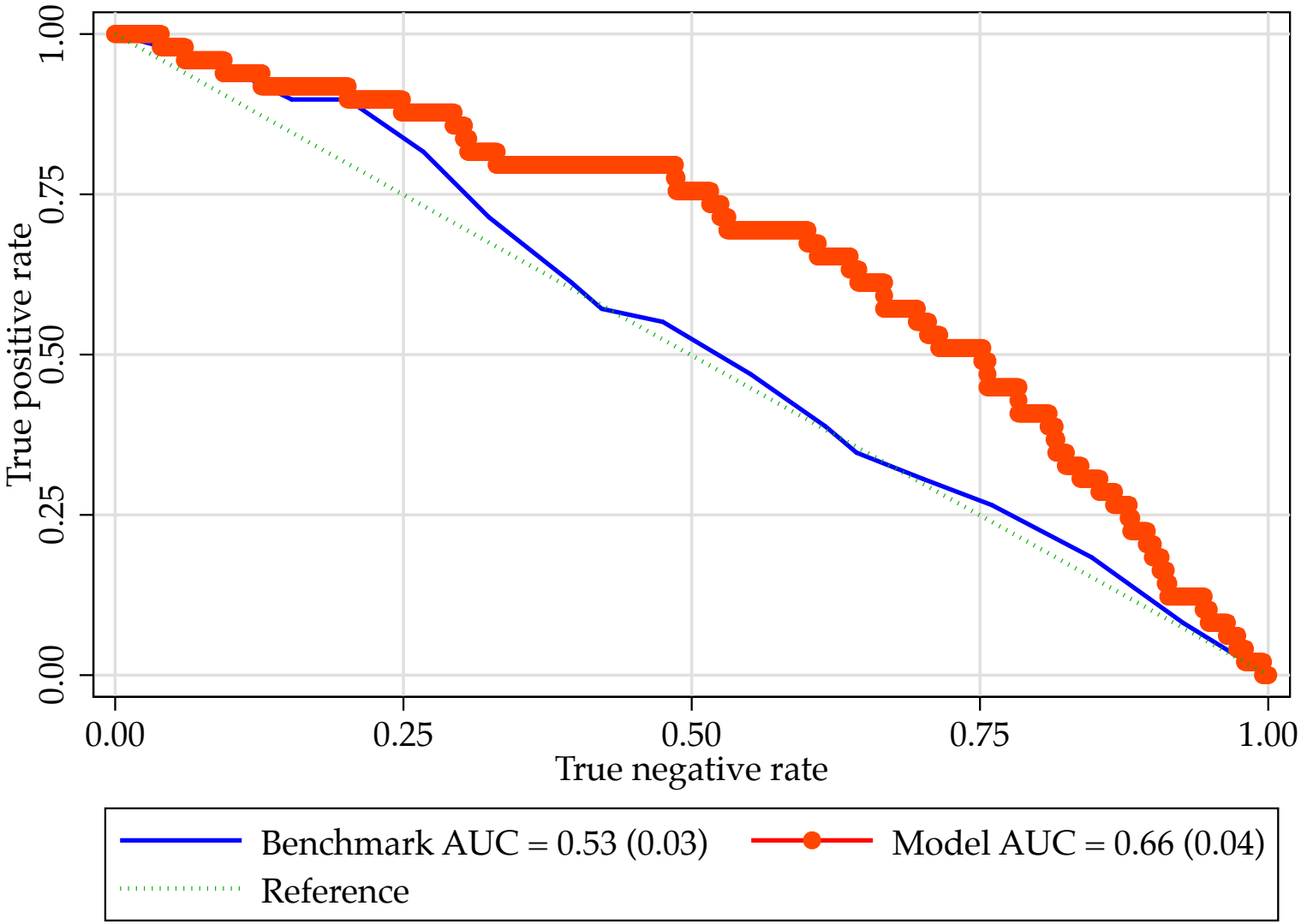
Financial crisis prediction

Binary classification based on mortgage lending and house prices

(a) Logit models, country fixed effects	(1) All years	(2) Pre-WW2	(3) Post-WW2
Mortgage loans/GDP, lagged 5-year change	0.17**	0.11	0.26**
	(0.08)	(0.14)	(0.10)
log *(House prices/income),* lagged 5-year change	0.07**	0.08	0.07
	(0.03)	(0.05)	(0.05)
Observations	1275	415	860
(b) Correct classification frontier statistics			
Model AUC	0.66	0.63	0.71
	(0.04)	(0.06)	(0.06)
Benchmark AUC, country fixed effects only	0.53	0.53	0.54
	(0.03)	(0.03)	(0.06)
H_0 : AUC model = AUC benchmark (p-value)	0.02	0.17	0.02

Financial crisis prediction

Binary classification based on mortgage lending and house prices



Conclusions

1. *Changing business of banking*
   Mortgage lending share has risen from ⅓ to ⅔.

2. *Mortgage borrowing and house prices have become highly receptive to monetary conditions*
   Interest rates are causal for credit and price dynamics

3. *Credit and house price booms increase crisis risks*
   We should take the side-effects of loose monetary policy seriously

Implications

1. *For central banks: be mindful of side-effects of low rate environment*
   Economic conditions may warrant low interest rates, but financial stability is also a key mission for central banks. Apply new macro-prudential toolkit.

2. *For economists: read more economic history*
   If you want to find a lost key at night, don't look under the streetlights only...