BANK FOR INTERNATIONAL SETTLEMENTS

Housing markets and domestic policy coordination

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Views expressed are those of the presenter and not necessarily those of the BIS.

Monetary policy and financial stability: three views

1. Separation of objectives and instruments
   - Monetary policy – price stability
   - Macroprudential policies – financial stability
2. Leaning against the wind
   - Financial fragility affects monetary transmission and price stability
   - Macroprudential policy cannot fully address financial cycle; also, it gets arbitraged
   - Interest rates "get in all of the cracks"; it also affects risk taking

Monetary policy and financial stability: three views

3. Monetary and financial stability are closely linked
   - Balance sheet crises highlight the risks of not having unified policy frameworks
   - Monetary and financial stability need to be given equal weight …
   - … and need to be used jointly …
   - … and possibly combined with other policies

This presentations

Using the example of housing markets, argues that domestic policies need to be coordinated even more broadly:

- Residential investment is a key driver of output growth
- Persistent deviations of house prices from inflation cannot be neglected, need to be taken care of
- Changes in house prices are persistent, need to use both policy interest rates and macroprudential tools to affect them
- How fiscal policy could help
- And monetary policy affects intergenerational distribution of housing wealth and housing tenure choice

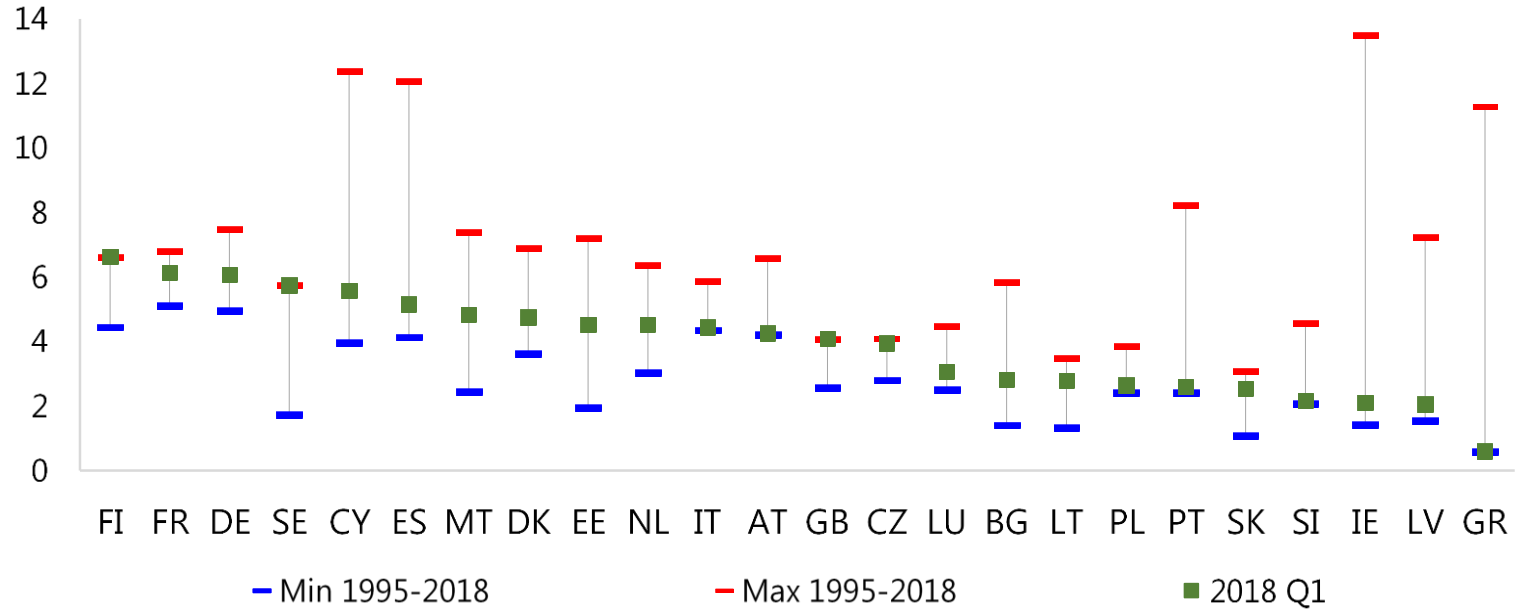
Residential investment

– accounts for a small share of GDP

– but is highly volatile

Share of residential investment in GDP

Percent

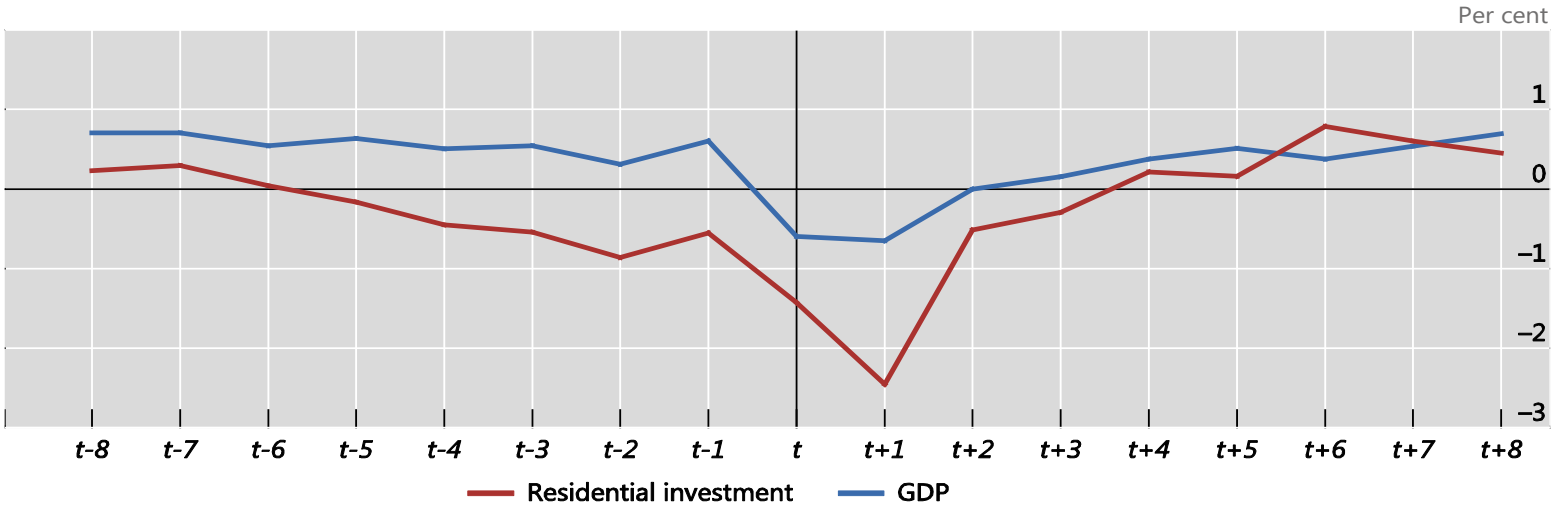


Sources: National data; BIS; author's calculations.

Residential investment plays a key role in GDP dynamics: leading indicator of downturns in output growth

Residential investment versus GDP growth during recessions

Median growth during 99 recession events starting in *t*, 1970–2016



Recession events are defined as at least two consecutive quarters of negative GDP growth based on seasonally-adjusted data.

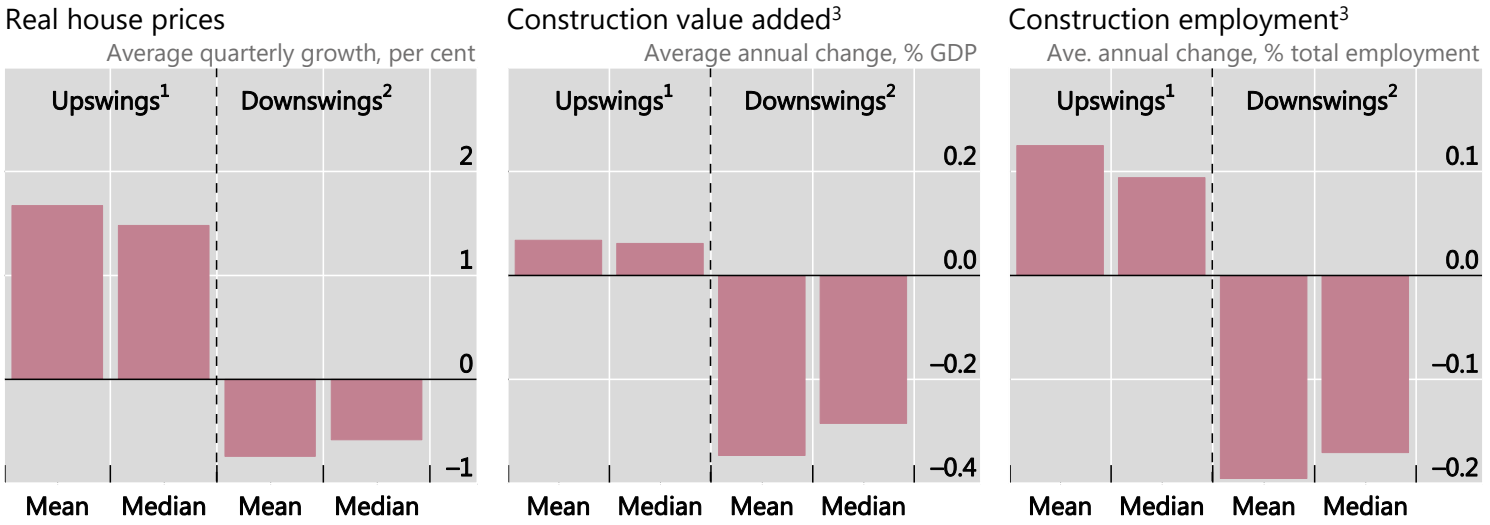
Sources: OECD, *Economic Outlook database*; national data; BIS calculations.

E Kohlscheen, A Mehrotra and D Mihaljek (2018): "Residential investment and economic activity: evidence from the past five decades", BIS Working Papers, no 726, June.

Dynamics of residential investment is asymmetric across the cycle

- During booms, prices rise much more than construction
- During busts construction and employment fall more than prices

House prices and construction during residential investment upswings and downswings



[1] Defined as quarterly growth (in percentage points) above the 75th percentile within each country, based on four-quarter moving averages of residential investment as share of GDP. Short upswings lasting less than four quarters were dropped, and short gaps (less than four quarters) between two upswings were connected. For Switzerland, construction is used for residential investment. [2] Defined as quarterly growth (in percentage points) below the 25th percentile within each country, based on four-quarter moving averages of residential investment as share of GDP. Short downswings lasting less than four quarters were dropped, and short gaps (less than four quarters) between two downswings were connected. [3] When two or more quarters within a calendar year are up- or down-swing quarters, the whole year is considered an up- or down-swing period.

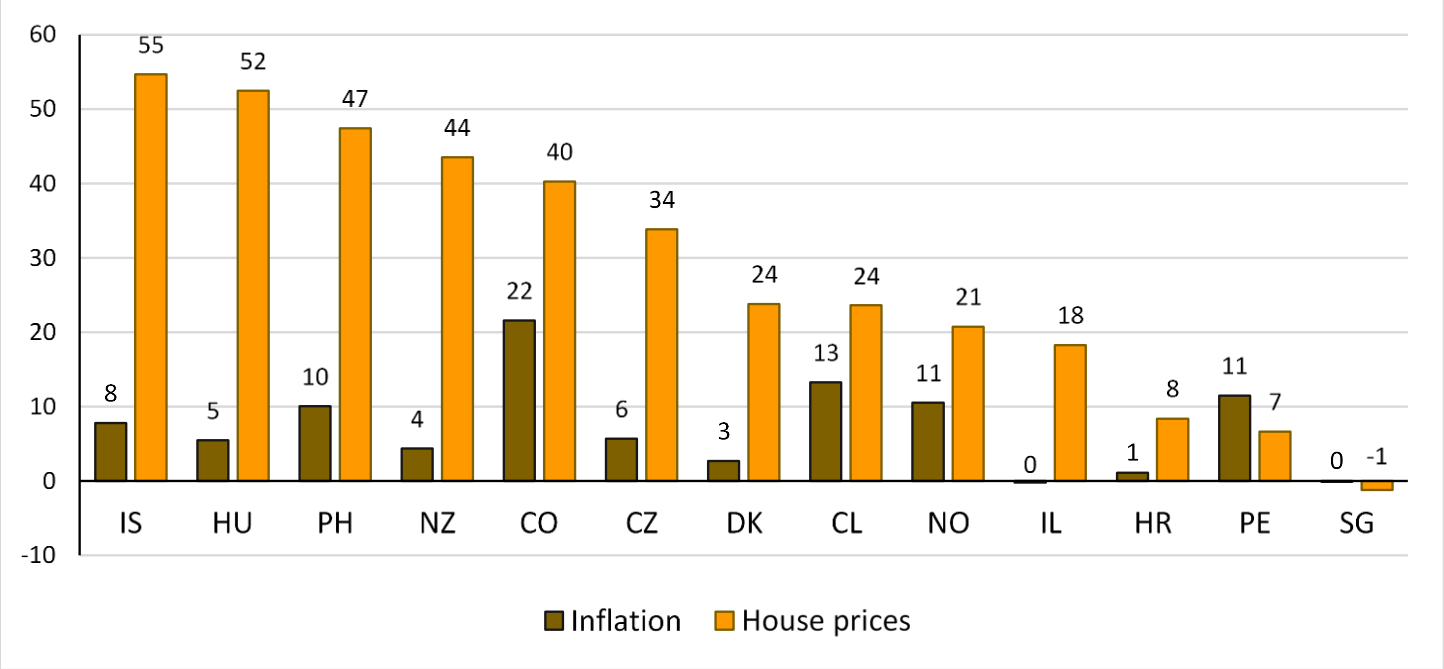
Sources: OECD; Datastream; national data; BIS calculations.

House prices and inflation

(1) Nominal house prices tend to rise faster than inflation

Inflation and house prices

Cumulative growth, 2015–18, in percent

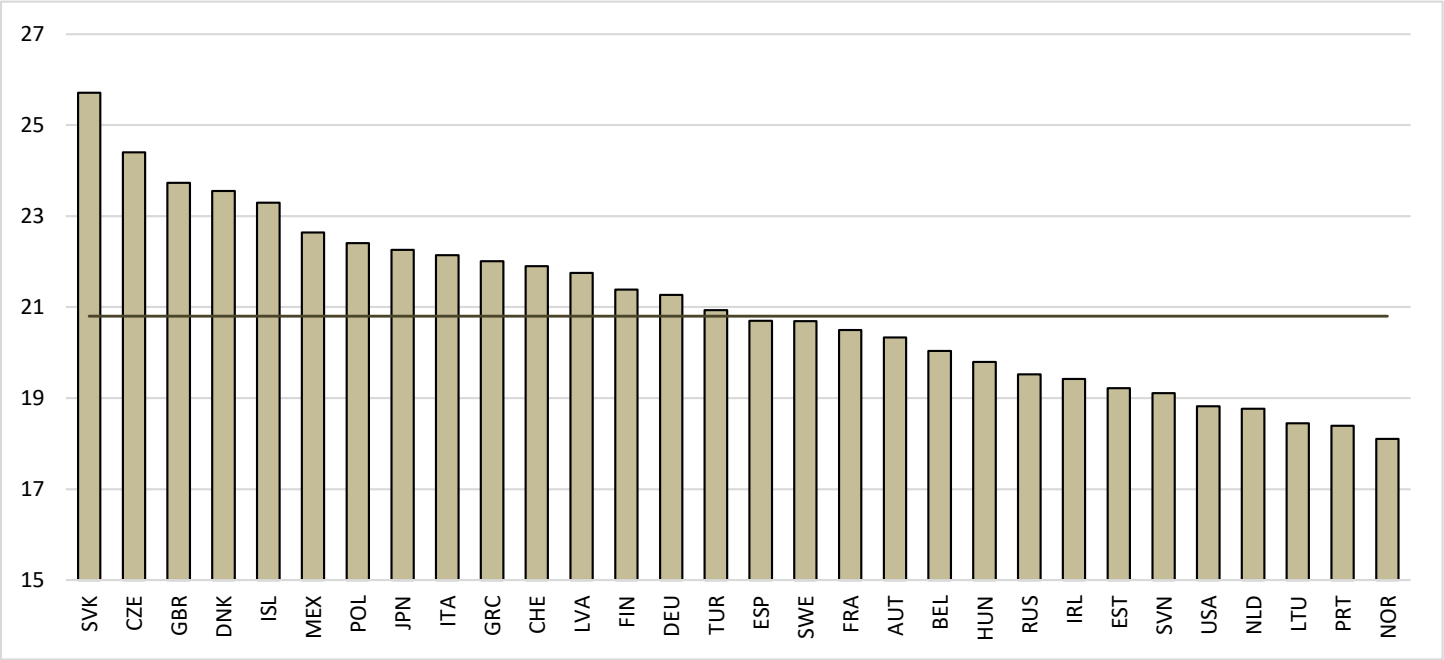


Sources: BIS residential property price statistics; national data; BIS calculations.

(2) Housing accounts for a large share of household expenditure

Household expenditure on housing

As a percentage of household gross adjusted disposable income, 2005–16 average



Source: OECD, *How's Life? 2017 Measuring Well-being*.

(3) But the weight of housing in CPI is mostly low

Housing components of CPIs in small open economies

Latest observations

	Actual rentals	Imputed rentals[1]	Inflation target includes:	
	Weight in CPI, per 1,000	Weight in CPI, per 1,000	Headline CPI	Other[2]
Chile	41.7	…	Yes	
Colombia	73.2	112.7	Yes	
Croatia[3]	6.9	185.4	N/A	N/A
Czech Republic	33.7	103.9	Yes	
Denmark	79.8	131.1	N/A	N/A
Hungary	11.9	…	Yes	
Iceland	43.4	212.8	Yes	
Israel	57.1	180.0	Yes	
New Zealand	92.0	55.0	Yes	
Norway	46.1	135.5	Yes	
Peru	19.9[4]	…	Yes (Lima CPI)	
Philippines	128.8		Yes	
Singapore	38.8[5]	189.9	NA	NA

[1] For owner-occupied housing. [2] Central banks in Croatia, Denmark and Singapore do not operate inflation targeting regimes. [3] From January 2018, imputed rents are excluded from the CPI; the weight of actual rents is 8.5. [4] Weight in national CPI. [5] Calculated by subtracting imputed rents for owner-occupied housing from total weight of accommodation.

Sources: National data.

(4) Housing is a (durable) consumption good and an asset

- Housing is a key asset and a major source of consumption services for households
- The price of the consumption services should be included in the CPI
- But doing so without bringing in some aspects of capital gain or loss cannot be done without ambiguity

Accounting for owner-occupied housing

- Owner-occupiers generally hold their houses for many years
  - Focus on the opportunity or "user cost" of the funds tied up in the housing asset (Canada, Iceland, Sweden): how much would it cost to buy/live in/resell a house in a unit time period?
  - The shorter the period, the more sensitive the headline CPI to short-term fluctuations in house prices
  - In countries where the weight of OOH is high (eg 20–30%) and varies a lot, may have to consider too frequent interest rate changes, reacting to short-term fluctuations in house prices

Accounting for owner-occupied housing

- Alternatively, monetary policy could see through temporary swings in house prices …
- … with macroprudential policy addressing possible financial stability risks
- Eg, track a CPI measure that excludes housing (CPIXH) and permit wider transitory overshoots of the CPI target whenever house prices are rising unusually rapidly, and vice versa
- This would reinforce the argument for using macroprudential tools more actively to influence overheating in the housing market
- But it raises communication issues: headline inflation would fluctuate more than otherwise and deviate over significant periods from the long term target

Accounting for owner-occupied housing

- Another approach: rental cost of comparable properties (US, UK)
  - Rental market should provide a sufficient statistic on the cost of housing services to owner-occupiers
  - But even in economies where the rental market is deep, inflationary signals and stability risks coming from the housing market may not be adequately captured in policy settings
  - Eg, US rents were stagnating in 2000–05 even though house prices were booming (large residential investment depressed rents)

- Net acquisition approach: look at the change in the outlays needed to acquire new housing (Australia, Czech Republic, New Zealand)
  - Captures change in price of new dwellings, but not that of existing ("second hand") dwellings and land used for new home construction
  - This could miss a potentially large share of housing market
    - In periods of tight housing supply
    - Where owner-occupancy rates are high

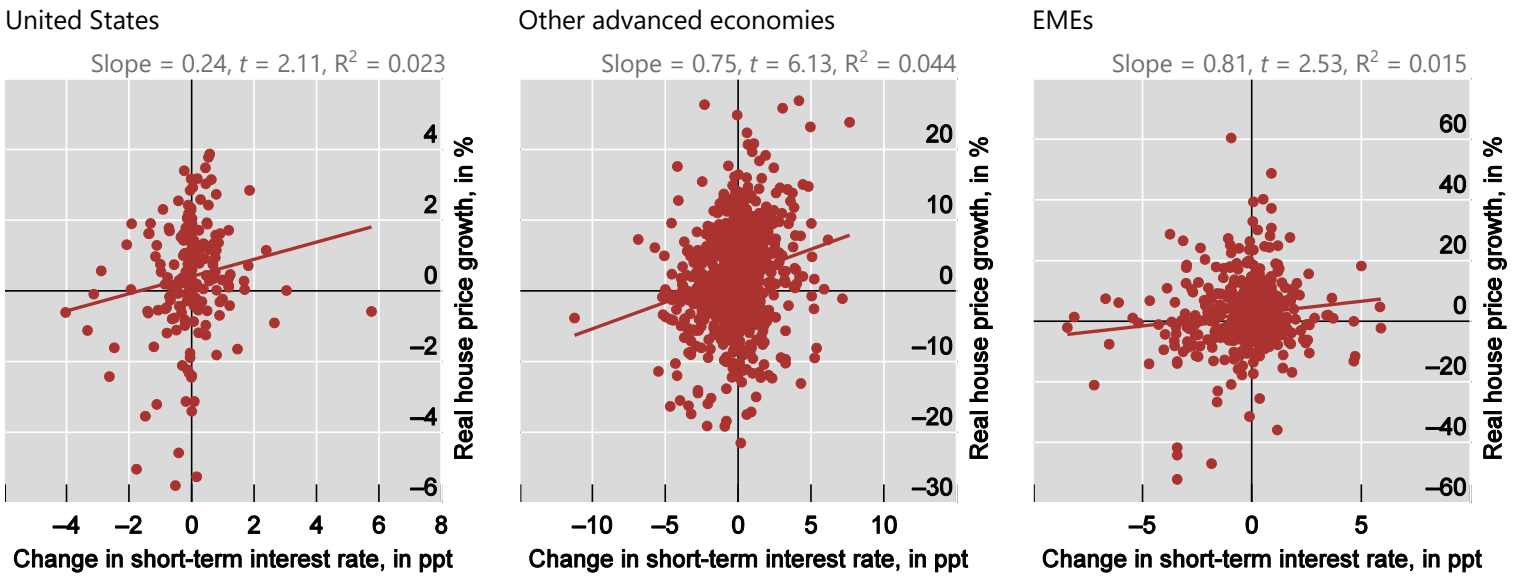
Accounting for owner-occupied housing

- Payments approach: measures actual cash outflows associated with owner-occupied housing (Ireland)
  - Little consumption of fully-owned housing in "normal" times
  - Mortgage payments swell with moderate or high inflation
  - But no offsetting benefit from increase in house prices
- Exclude owner-occupied housing from headline CPI (euro area's HICP)
  - Don't have to deal with practical data problems
  - But neglects 20% of household expenditure on average …
  - … and rising over time as house prices have an upward trend

Further complications for monetary policy

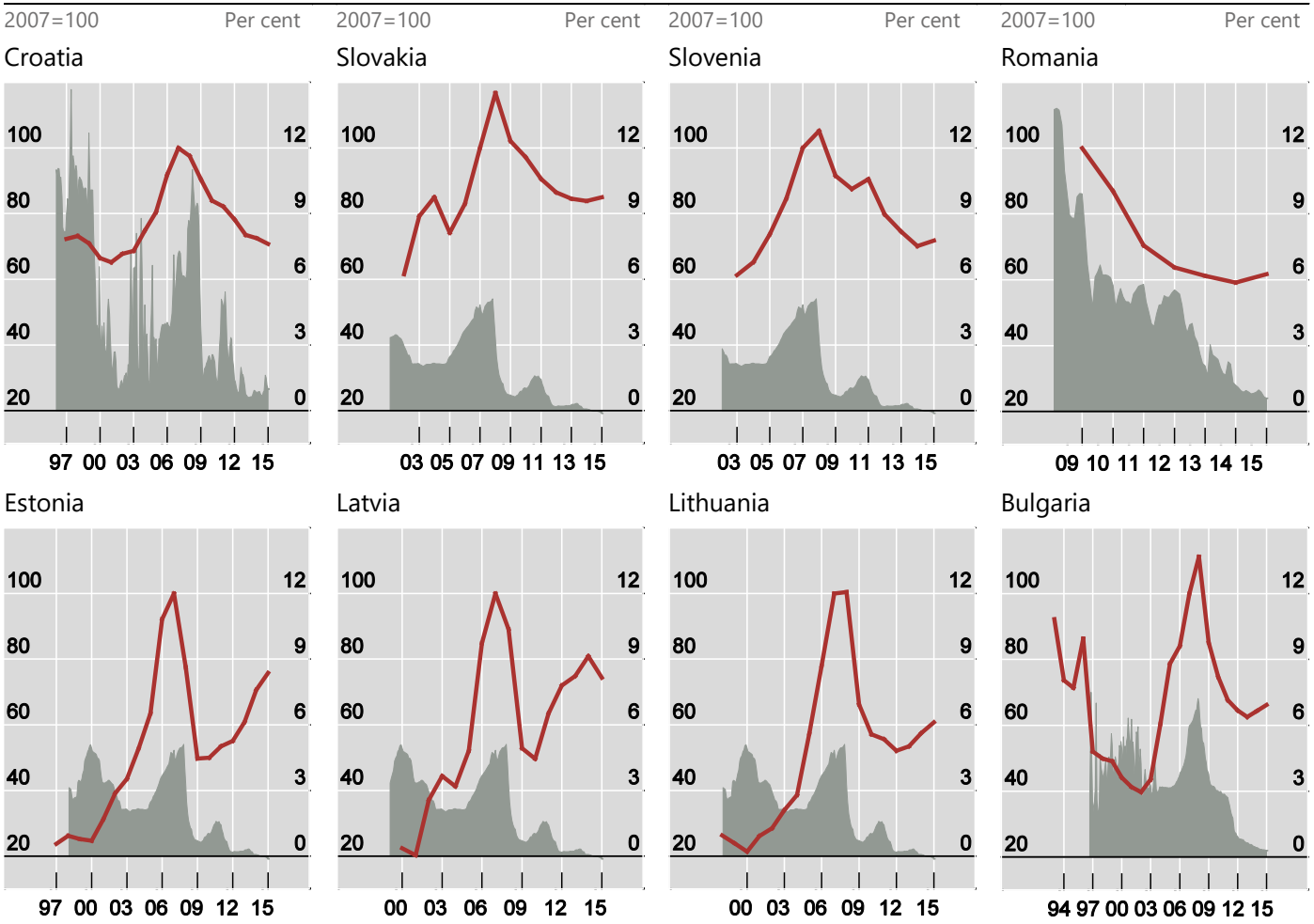
(1) Empirical relationship between interest rates and house prices

Contemporaneous changes in real house prices and nominal short-term interest rates



Sources: Bloomberg; CEIC; Datastream; IMF, *International Financial Statistics*; national data; authors' calculations.

Real house prices and short-term interest rates: central and eastern Europe[1]



[1] Description of house prices and short-term interest rates is provided in Appendix 2. [2] CPI-adjusted annual averages. [3] Monthly averages.

Sources: Bloomberg; Datastream; IMF, *International Financial Statistics*; national data.

Interest rates affect house prices with (long) lags

Changes in real house prices and lagged nominal short-term interest rates[1]

[1] Interest rates were lagged by eight quarters for the United States and two years for other advanced economies and EMEs.

Sources: Bloomberg; CEIC; Datastream; IMF, *International Financial Statistics*; national data; authors' calculations.

G Sutton, D Mihaljek and A Subelyte (2017): "Interest rates and house prices in the United States and around the world", BIS Working Papers, no 665, October.

(2) House prices are highly persistent

Upswings and downswings in nominal house prices – EMEs

Country	Upswings[1]			Downswings[1]		
	Period	Duration		Period	Duration	
		Years	% of total[2]		Years	% of total[2]
Bulgaria	2001–08	8	44	2009–13	5	28
Croatia	2001–08	8	44	2012–15	4	22
Czech Republic	2000–03	4	50	2009–13	5	31
	2005–08	4				
Estonia	2000–07	8	78			0
	2010–15	6				
Hungary	1999–2008	10	59	2009–13	5	29
Latvia	2005–08	4	53			0
	2011–14	4				
Lithuania	2001–08	8	65			0
	2013–15	3				
Poland	2003–09	7	50	2010–12	3	21
Romania			0	2010–14	5	83
Russia	2002–08	7	79			0
	2012–15	4				
Slovakia	2006–08	3	23	2009–14	6	46
Slovenia	2004–08	5	42	2012–14	3	25

[1] Upswings (downswings) defined as periods of three or more years of sustained increases (decreases) in nominal house prices. [2] Duration of all upswings or downswings in a given country as a percentage of years of observations in the country sample.

Sources: BIS residential property price statistics; authors' calculations.

Upswings and downswings in house prices last very long

Reason: high transaction costs, housing is not a liquid asset

Upswings and downswings in house prices[1]

In years

	Nominal				Real			
	Advanced economies		EMEs		Advanced economies		EMEs	
	Ups	Downs	Ups	Downs	Ups	Downs	Ups	Downs
Total	759	96	285	56	506	255	192	118
Average length	12	5	8	4	6	6	6	5
Maximum length	50	18	22	6	22	18	10	10
Most frequent length	4	4	4	3	3	4	3	3
Median length	10	4	7	4	5	5	5	5
No of up/downswings	62	19	36	13	82	46	34	23
Pct of sample period	80	10	66	13	54	27	45	28
Years in the sample	950		429		943		423	

[1] Upswings (downswings) are periods of house price increases (decreases) sustained in an individual country for three years or more.

Sources: BIS residential property price statistics; authors' calculations.

Other findings on interest rates and house prices[1]

- Changes in interest rates have a small but significant impact on house price changes
- Need to consider cumulative effect – up to five years of changes in interest rates
- Interest rates affect house prices gradually over time, not on impact (as in VAR models)
- Changes in both short-term and long-term interest rates matter
- In addition, the level of interest rates affects house prices
- And the level of US interest rates affects house prices in other countries, notably small advanced economies, but also EMEs

[1] From G Sutton, D Mihaljek and A Subelyte (2017): "Interest rates and house prices in the United States and around the world", BIS Working Papers, no 665, October.

Determinants of real house price growth in EMEs , 1976–2015

Variables	Coefficient	*t*-statistic	Probability
A. With domestic and US short-term interest rates			
Constant	–0.07	–6.93	0.0000
Real house price growth (t–1)	0.30	5.54	0.0000
Real house price growth (t–2)	–0.13	–2.49	0.0132
Real GDP growth	2.12	11.27	0.0000
Real GDP growth (t–1)	–0.46	–2.31	0.0214
Real GDP growth (t–2)	0.46	2.42	0.0160
Total employment growth	0.36	1.57	0.1177
Total employment growth (t–1)	0.02	0.09	0.9266
Total employment growth (t–2)	0.12	0.55	0.5852
Change in domestic short-term interest rate	0.0006	0.22	0.8298
Change in domestic short-term interest rate (t–1)	0.0013	0.47	0.6356
Change in domestic short-term interest rate (t–2)	–0.0053	–2.04	0.0418
Change in domestic short-term interest rate (t–3)	–0.0003	–0.11	0.9141
Change in domestic short-term interest rate (t–4)	–0.0050	–2.62	0.0093
Change in domestic short-term interest rate (t–5)	–0.0007	–0.39	0.6987
Level of US short-term interest rate, in real terms[1]	–0.0063	–2.13	0.0341
R^2	0.61		
Number of observations	340		

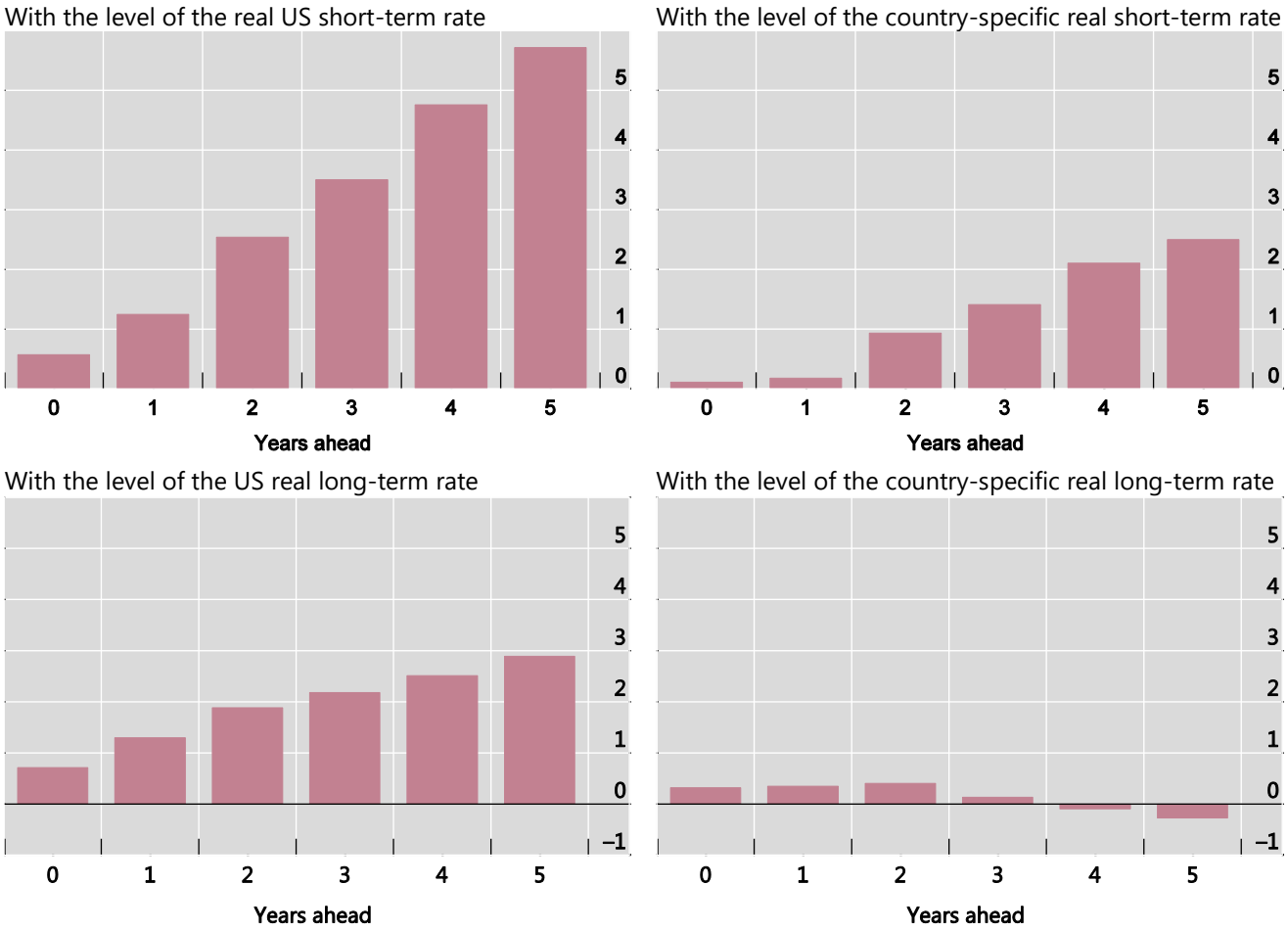
Note: Each panel has 340 observations.

[1] Deflated with previous year's CPI.

Sources: Bloomberg; CEIC; Datastream; IMF; national data.

Impact of interest rates on real house prices in EMEs[1]

In per cent



[1] Cumulative impact of a 100 basis-point fall in the nominal short-term rates; see Appendix 3 for details

Source: Authors' calculations.

Monetary policy implications

What we have known all along:

- Monetary policy sets short-term interest rates; this influences long-term rates, which determine mortgage rates
- Short-term rates also affect bank lending conditions: lower rates, easier conditions; higher rates, tighter lending conditions
- The level and expected path of interest rates as well as lending conditions together influence expectations of future house prices growth

Monetary policy implications

What we haven't paid so much attention to:

- Short-term rates cannot rein in house price growth on their own
- But raising short-term rates gives more time and space to
  - Supervisors to tighten oversight of mortgage lending
  - Macroprudential authorities to take measures
- The likelihood that moderate cuts in policy rates will fuel house prices is small: house prices move slowly, interest rate changes affect them gradually over longer time periods
- House prices are affected not just by local, but also by global financing conditions, which affect funding costs for banks providing housing loans

Housing markets and fiscal policy

- It has been argued that, apart from loose monetary policy, favourable treatment of owner-occupied housing for tax purposes has also contributed to an upward bias in house prices
  - Very few countries have provisions on imputed rental income from owner-occupied housing as part of taxable personal income
  - But most allow deduction of interest payments on housing loans
  - Real estate ownership, capital gains, and property transfers generally not taxed highly
  - There are no comparable tax advantages for property renters
- Most arguments supporting favourable tax treatment of homeownership are political, not economic

Could wealth and property taxes help?

Renewed interest in wealth and property taxation recently:

- Rapid growth in wealth across countries
- Increasing wealth inequality
- Need to generate revenue after the crisis
- Economic debates on the impact of favourable tax treatment of housing on:
  - Resource allocation
  - Macroeconomic and financial stability
- Political debates on wealth and income inequality:
  - Are estate or inheritance taxes an efficient way to address wealth inequality, increase incentives to work and innovate?
  - Or do they just encourage wealthy individuals to move to tax havens and engage in tax saving activities that create little value added?

Could wealth and property taxes help?

- Wealth (or capital) taxes can be imposed on:
  - holding
  - transfer
  - increase in the value

  of land, housing, financial, business, other types of assets
- Forms include:
  - gross or net wealth taxes;
  - estate, inheritance or gift taxes;
  - housing ownership taxes
  - rental income taxes;
  - other land, real estate taxes and property taxes;
  - capital gains taxes

Could wealth and property taxes help?

Findings in OECD (2018) *The role and design of wealth taxes*

- Merits of a net wealth tax cannot be assessed in isolation but depend on a country's overall tax system and broader economic and social circumstances
- From efficiency and equity perspectives, limited arguments for having a net wealth tax in addition to broad-based personal capital income and wealth transfer taxes
- But capital income taxes alone not enough to address wealth inequality; strong case to complement them with inheritance tax
- Where the overall tax burden on capital is low, or levying broad-based capital income taxes or inheritance taxes is not feasible, net wealth taxes may play an important role

→ Not clear in the end that tax policy could provide effective support to monetary/macroprudential policies in dealing with housing booms and busts on an ongoing basis

Housing tenure and social policies

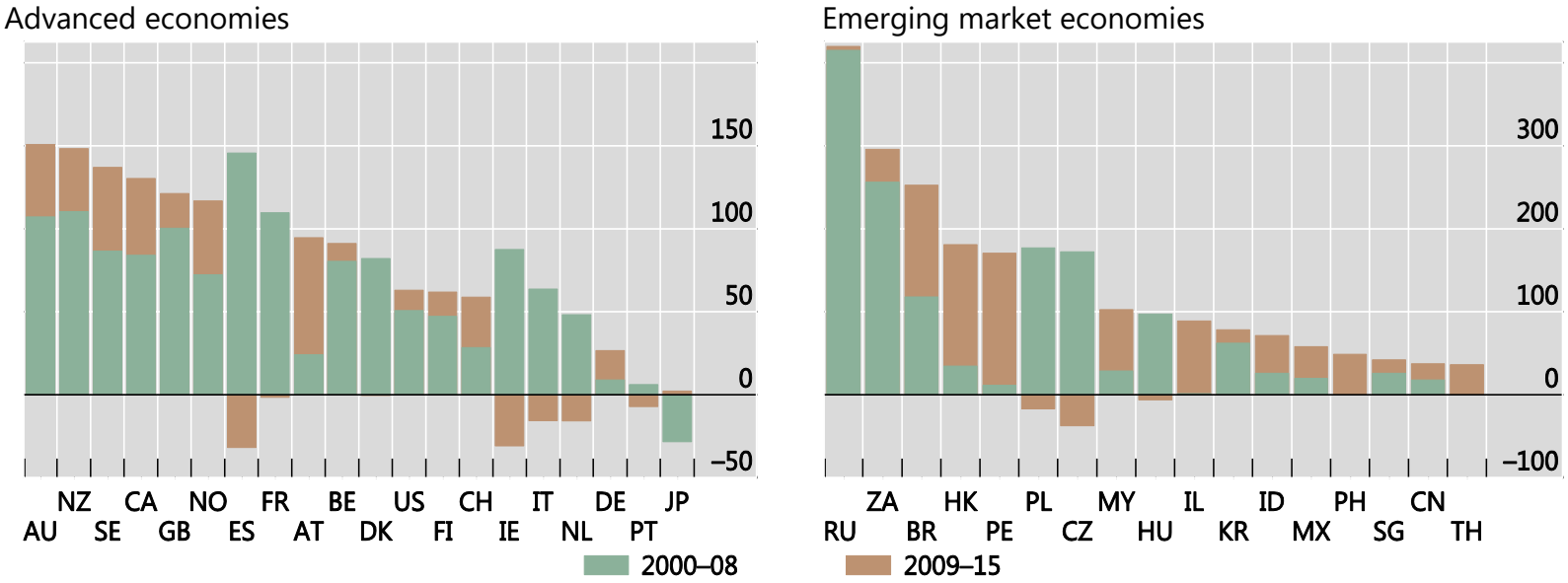
Upward trend in house prices, rising wealth and income inequality → housing affordability is a major policy issue

- A dwelling is typically the largest asset owned by households, and housing-related debt their largest liability
- As house prices and mortgage debt are interest-rate sensitive, monetary policy affects households' net income and wealth positions through the housing market
- Thus, monetary policy inevitably has distributional consequences. These depend on the distribution of housing wealth and debt
  - Lower-income households need to borrow more relative to income to buy an apartment or house
  - Other things equal, changes in policy interest rates affect disproportionately the relatively more indebted lower-income households

Upward trend in house prices

Cumulative growth in real house prices: 2000–08 and 2009–15

In per cent



Sources: BIS residential property price statistics; BIS calculations.

Structural factors and "financialisation" of housing

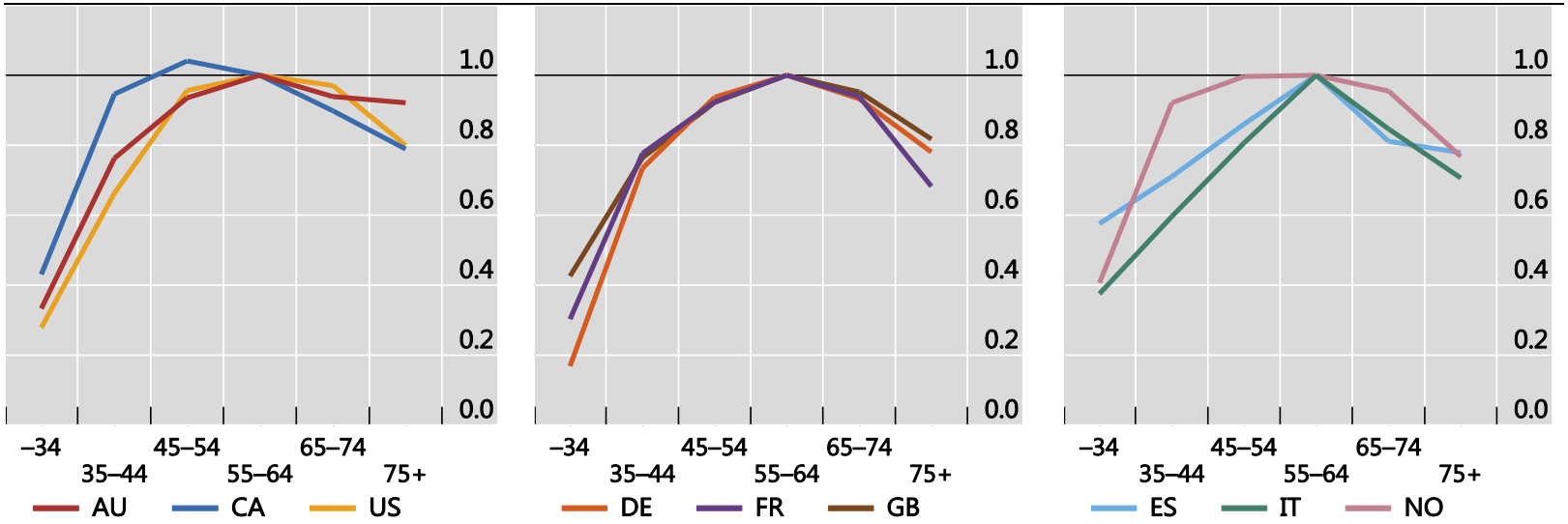
- Over time, broader access to housing loans, longer maturities, and securitisation have all boosted the sensitivity of house prices and credit to interest rates (Diamond and Rajan, 2009)
- UK homeownership rate increased sharply after measures to liberalise the mortgage market were introduced in the early 1980s (Ortalo-Magné and Rady, 1999)
- And where property construction has become more tightly regulated, the flexibility of housing supply has fallen, making prices more sensitive to changes in financial conditions (Glaeser et al, 2005)

Financial cycles and distribution of housing wealth

- In Australia, Germany, France and the United States, households in the 55–64 age group have three to six times higher net housing wealth than those in the under 34 age group
- When house prices rise, older households tend to receive net capital gains, while younger ones find it more difficult to acquire their own housing because higher home prices increase downpayments and debt service burdens
- All of the UK households' £2.7 trillion rise in wealth since 2007 (housing wealth accounts for 35–40% of total wealth) had been harvested by those over the age of 45, with two thirds by those over the age of 65 (Haldane, 2016)
- By contrast, those aged 16–34 had seen their wealth decline by around 10% over the period

Mean housing wealth[1]

Wealth holdings normalised relative to those of the 55–64 age group



[1] Data on housing wealth net of liabilities.

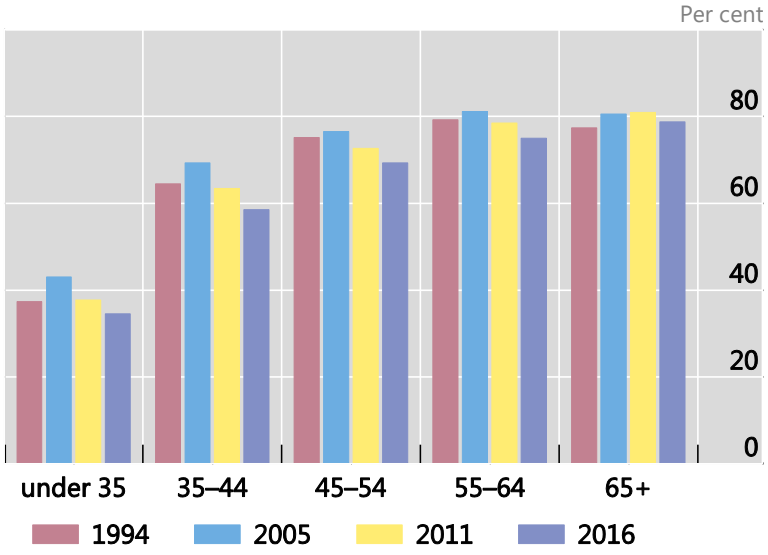
Source: OECD (2015).

Financial cycles and distribution of housing wealth

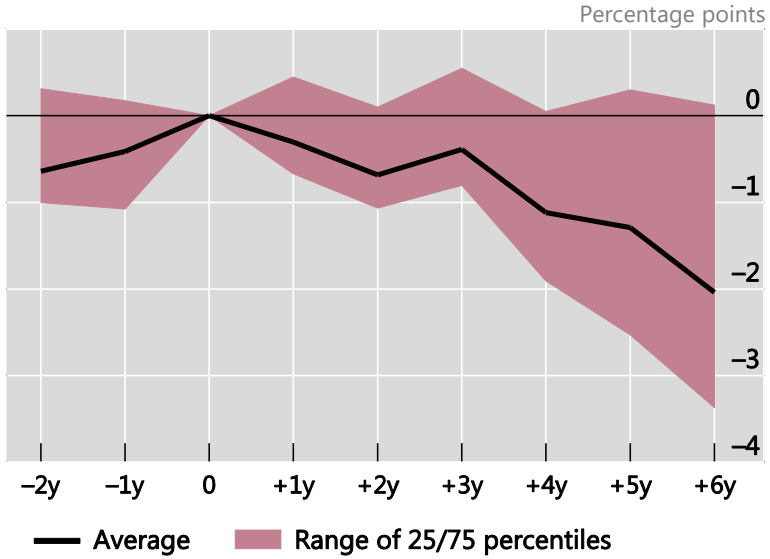
- Conversely, when house prices fall, older households' net housing wealth decreases and debt servicing costs rise, while younger households' access to housing normally improves
- But if mortgage lenders tighten their lending standards in response to a bust in property prices, young households may find their access to housing restricted
- US home ownership rates were on average 7 percentage points lower across all age cohorts in 2016 than in 2005, with larger declines for young households
- In eight advanced economies, home ownership rates were on average 2 percentage points lower six years after the turn of financial cycle

Home ownership rates through the financial cycle

US home ownership rates by age cohort



Financial cycle turning points and home ownership[1]



[1] The panel shows changes in homeownership rates in France, Italy, Norway, Portugal, Spain, Sweden, the United Kingdom and the United States from the year when the financial cycle expansion turned to a contraction ("year zero"). All turning points occur during 2006–09. The financial cycle is estimated as the average of medium-term cycles in real credit, credit-to-GDP ratio and real house prices. The estimation uses a bandpass filter to extract cyclical fluctuations of eight to 32 years duration. Peaks (troughs) occur when the growth rate turns from positive to negative (negative to positive).

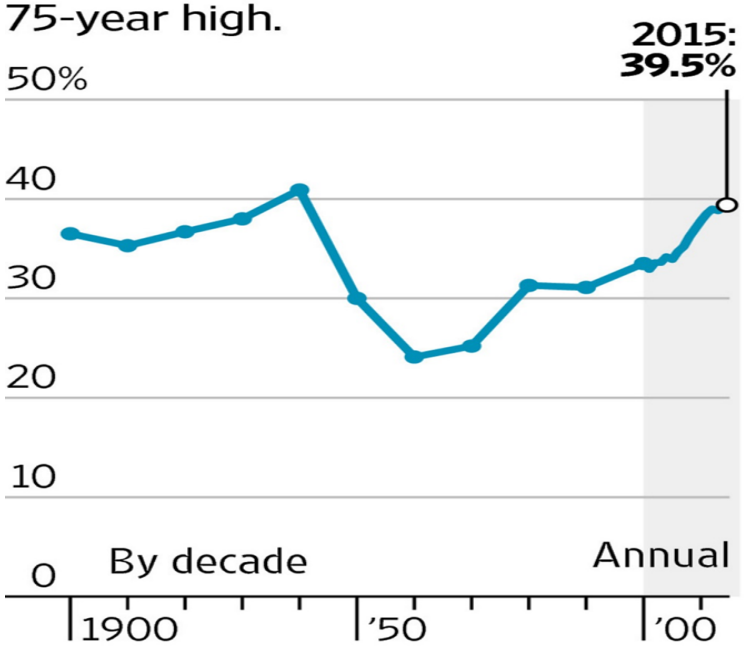
Sources: Eurostat; national data; BIS calculations.

Financial cycles and social policies

- How the **intergenerational distribution** ultimately plays out depends on how the net gains or losses that accrue to the older households are shared with younger ones. This may in turn depend on credit constraints and prudential regulation
- In Australia, increase in the share of first-time homebuyers receiving loans from family and friends (Lowe, 2015)
- There is evidence that younger generations are getting more help with housing expenses from older relatives, and continuing to live in the family home for longer
- In the US, almost 40% of 18- to 34-year olds were living with parents and other family members in 2015, compared with less than 25% in the 1960s
- One reason is credit constraints for first-time buyers: young households were significantly less likely to purchase a residential property in regions where house prices prior to the GFC rose furthest (Laeven and Popov, 2017)
- In the UK, share of young adults living with their parents increased from 21% to 25% between 1996 and 2016

Welcome Home

The percentage of 18- to 34-year-olds living with parents and other family members hit a 75-year high.



Notes: 1900 to 1970 data are from the Decennial Census records, 1980 to 2015 from Current Population Survey; Including stepparent, grandparent, other relative(s)
Sources: U.S. Census Bureau; Trulia

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Housing tenure and social policies

- In principle, macroprudential measures could help reconcile the goals of restraining house price growth and easing young families' and first-time buyers' access to housing
- In practice, balancing the two goals is difficult
  - Tighter LTV or DSRs could help restrain house price inflation and maintain affordability
  - But may also lead to higher down-payment requirements, reducing housing access for younger households and first-time buyers
  - This may give rise to demands for special measures to ease access to housing for some population groups
  - If introduced, such measures would add another layer of policy interventions in credit and housing markets – and might give rise to further demands for intervention

Summing up

- Need a broad policy approach to deal with housing market issues
- Watch housing markets for advance signs of overheating or slump
- Need to account for OOH in the CPI
- Monetary and macroprudential policies need to work in sync but are not enough on their own
- Fiscal policy can help by setting overall framework for wealth and property taxation right
- But this happens at best once in a generation
- Have to deal with distributional consequences of monetary and macroprudential policies on intergenerational distribution of housing wealth