

How should we measure residential property prices to inform policy makers?

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Structure of the presentation

1. Motivation and introduction
2. The Bundesbank's dashboard
3. Affordability indicators

“Residential and commercial property prices” (Recommendations 17 and 18 of the G20 Data Gaps Initiative II, DGI-2)

1. Motivation and introduction

- The **various motivations for the analysis of house prices** call for **alternative measures** to be applied.
- **Macroeconomic**: identification of price signals, evaluation of monetary policy channels, volume measurement in National Accounts.
- **Macroprudential**: assessment of asset price bubbles, build-up of risks in banks' credit exposures, financial soundness of private households.
- However, these **indicators** can give **different results**, which could **undermine their credibility for many users**.
- Yet, there should be **no unique indicator**. In order to determine whether threats to the economy or financial stability emanate from the housing market, the **analyses should be based on a broad set of indicators**.

1. Motivation and introduction

- The **year 2010** saw a **trend reversal in the German housing market**, which was reflected in a **sharp rise in prices**.
- This situation needs to be addressed in light of the **ongoing low-interest-rate environment**.
- In order to determine whether **threats to the economy or financial stability** emanate from the housing market, the Bundesbank based its analyses on a **broad set of indicators**.
- This clearly shows that **no statistical one-size-fits-all approach** exists but that each subject matter has to be considered separately.

2. The Bundesbank's dashboard

System of indicators for the German residential property market

Price indicators

- Residential property prices in Germany
- Price indices for rental housing in Germany
- Standard indicators to evaluate residential property prices in Germany
- Price-to-rent ratio for apartments in Germany
- Rents for apartments in Germany

Financial indicators

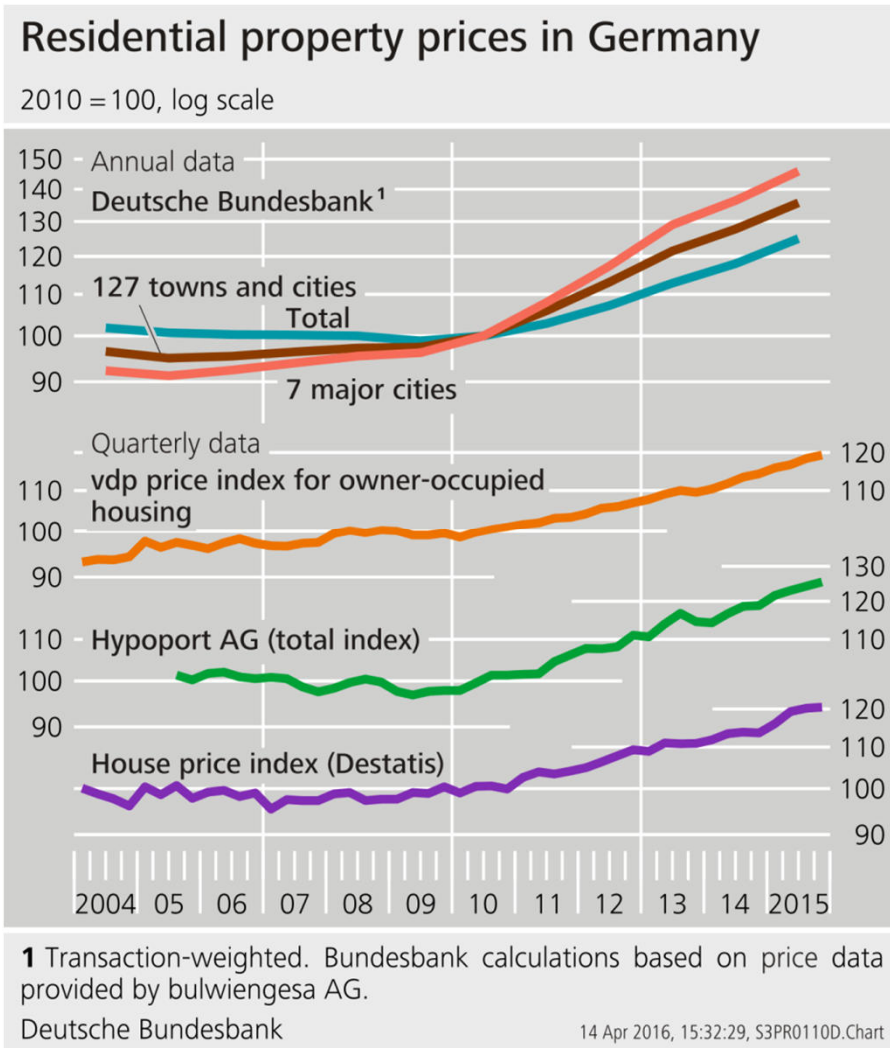
- Dynamics in domestic banks' loans for house purchase
- Stock of domestic banks' loans for house purchase
- Debt of households in Germany
- Changes in credit standards and margins on loans to households in Germany for house purchase
- Interest payments on loans to households in Germany for house purchase
- Interest rates on loans to households in Germany for house purchase
- Fixed interest periods for loans to households in Germany for house purchase

Real economic indicators

- Building permits and completed housing units in Germany
- Housing investment in Germany
- New orders for housing construction in the main construction sector in Germany
- Number of transactions for apartments in Germany

2. The Bundesbank's dashboard

Continuing strong demand outweighed expansion of the housing stock.



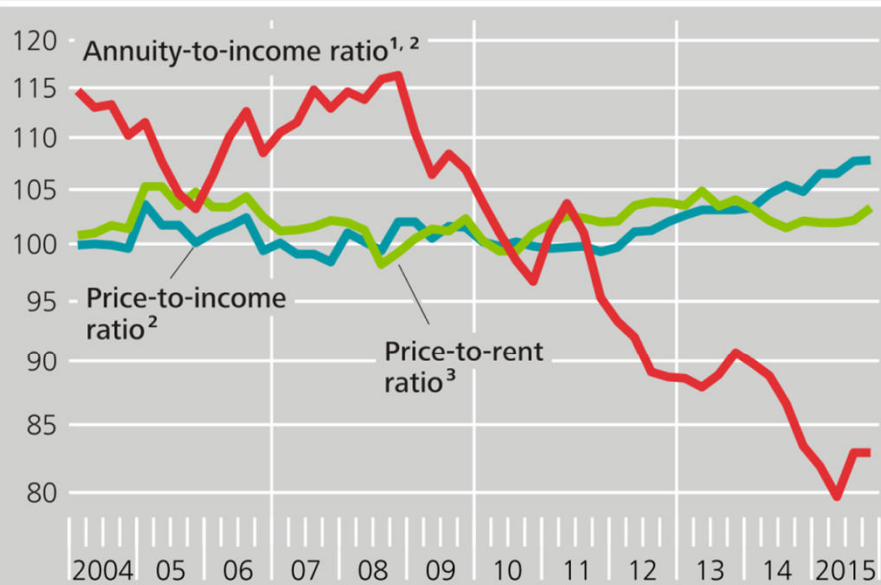
- Last year saw a **further sharp increase in residential property prices** with housing price inflation being **regionally more broadly based** than in earlier years.
- The observed price movements do not, on their own, make it possible to derive any **potential overvaluation or undervaluation**. A **benchmark** would be required, but it **cannot be specified unambiguously** from a conceptual point of view, **nor can it be observed directly**.
- All things considered, the **increase in the price of residential property** during the reporting year is likely to be **greater than** is suggested by the **dynamics of the demographic and economic fundamentals**.

2. The Bundesbank's dashboard

Housing is still being valued exceptionally highly in urban regions.

Standard indicators to evaluate residential property prices in Germany

2010 = 100, log scale



Source: Bundesbank calculations based on data provided by the Association of German Pfandbrief Banks (vdp). **1** Annuity of a mortgage loan with a fixed interest rate (between five and ten years) and a hypothetical term of 30 years in relation to household income. **2** Disposable income per household in Germany, nominal. An increase represents a rise in the purchase price in relation to disposable income. **3** Prices and rents of apartments.

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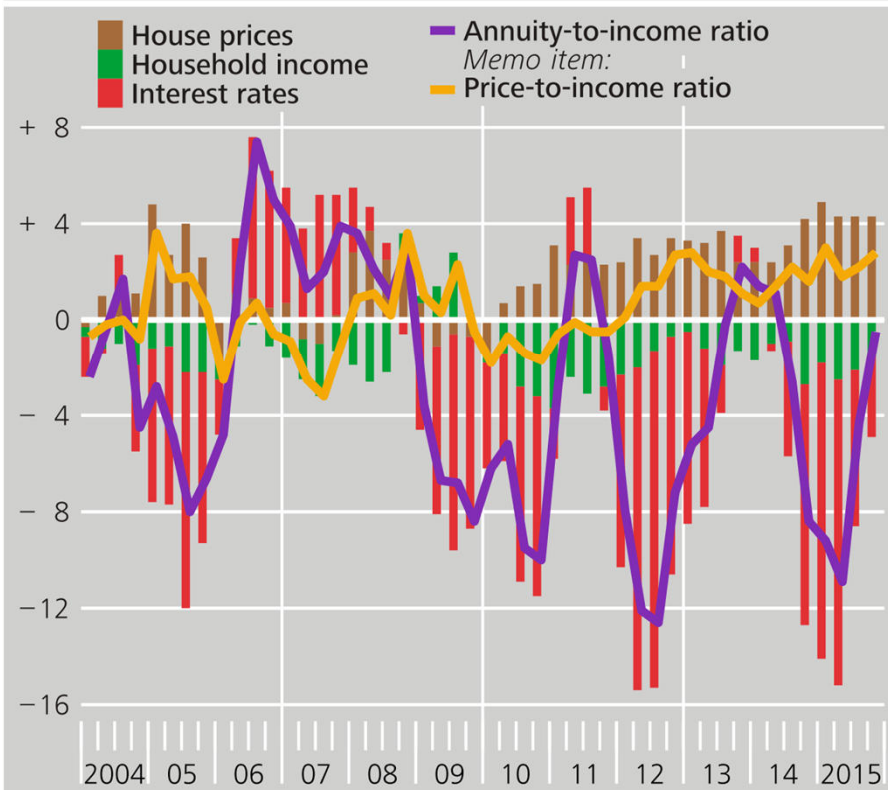
- If prices as well as rents rise substantially, the **price-to-rent ratio** may remain **largely unchanged**. Conversely, the **price-to-income ratio** would **shoot upwards**.
- While the **macroeconomic price-to-income ratio** has shown a **marked increase** over the past three years, there is likely to have been a **further improvement in the affordability** of residential property owing to the **low financing costs** of acquiring it.
- According to the latest estimations, the relevant **upward price deviations** in towns and cities still amount to **between 10% and 20%**. In this context, **freehold apartments in the major cities** continue to show the **steepest overvaluations**.

2. The Bundesbank's dashboard

Additional stimulus by the further improvement in financing conditions.

Contribution to the annual percentage change of the affordability indicators

in percentage points



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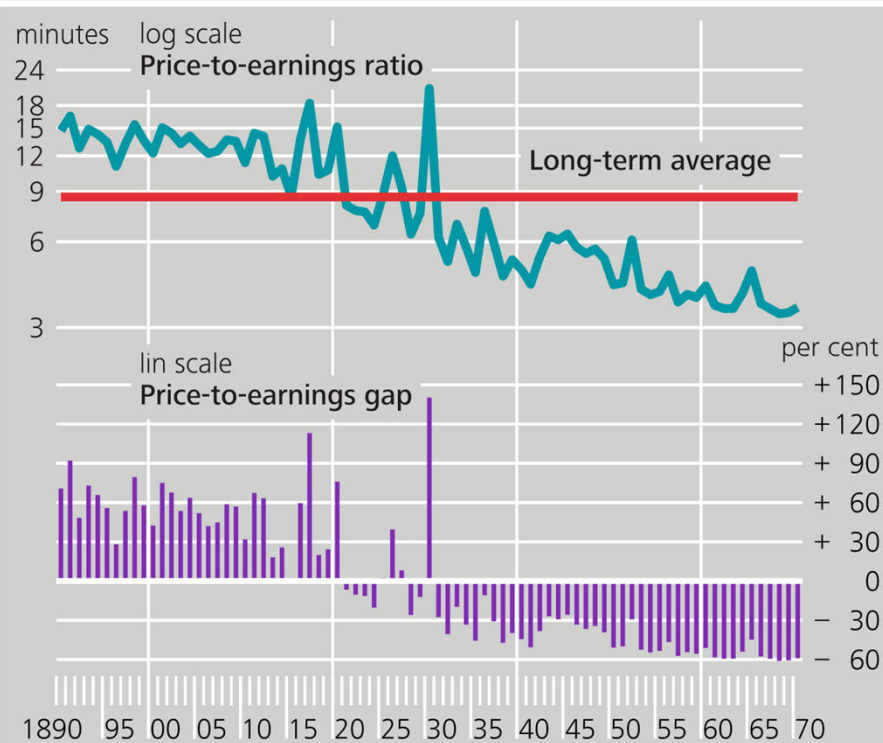
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- According to vdp, **house prices have risen** since the beginning of 2010 to end-2015 **by 21%**.
- **Nominal disposable income per household increased** in the same time period **by 12%**.
- The **average rate for mortgage loans declined** during the past five years by more than 2 percentage points **to below 2%**.
- The **annuity burden has (ceteris paribus) decreased by 26%** in the period under consideration due to the low-interest-rate environment.
- Hence – albeit prices have risen – the **affordability of financing a house has increased by 20%** (although it decreased by 8% without the interest rate effect).

2. The Bundesbank's dashboard

Averages do not take account of medium and long-term trends.

The average manufacturing worker's time required to buy one kilogram of potatoes



Source: U. S. Census Bureau (1975), Historical Statistics of the United States - Bicentennial Edition.

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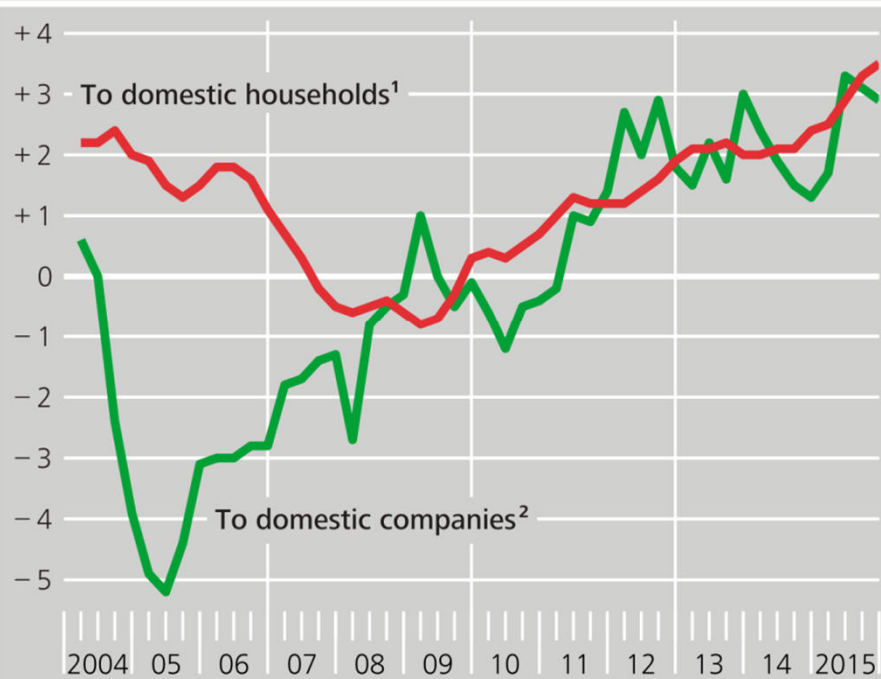
- **Nominal retail prices of potatoes** in U.S. cities **have risen** from 16¢ per 10lb. in 1890 **by a factor of 4.6** to 89.7¢ in 1970.
- **Average hourly earnings in manufacturing** in the same time period **increased more than 23-fold** from 14.4¢ to 3.36\$.
- Thus, **the average manufacturing worker's time required to buy one kilogram of potatoes decreased** from 14.7 minutes to 3.5 minutes (–76%) – with the long-term average being 8.6 minutes.
- Rhetorical question: Are **potatoes**, therefore, **60% undervalued** in 1970?

2. The Bundesbank's dashboard

Continued low-interest-rate environment entails risks.

Dynamics in domestic banks' loans for house purchase*

Year-on-year rate of change as a percentage, end-of-quarter data, seasonally adjusted



* Data for MFIs adjusted for statistical changes. **1** Including self-employed persons and sole traders. **2** Excluding self-employed persons and sole traders.

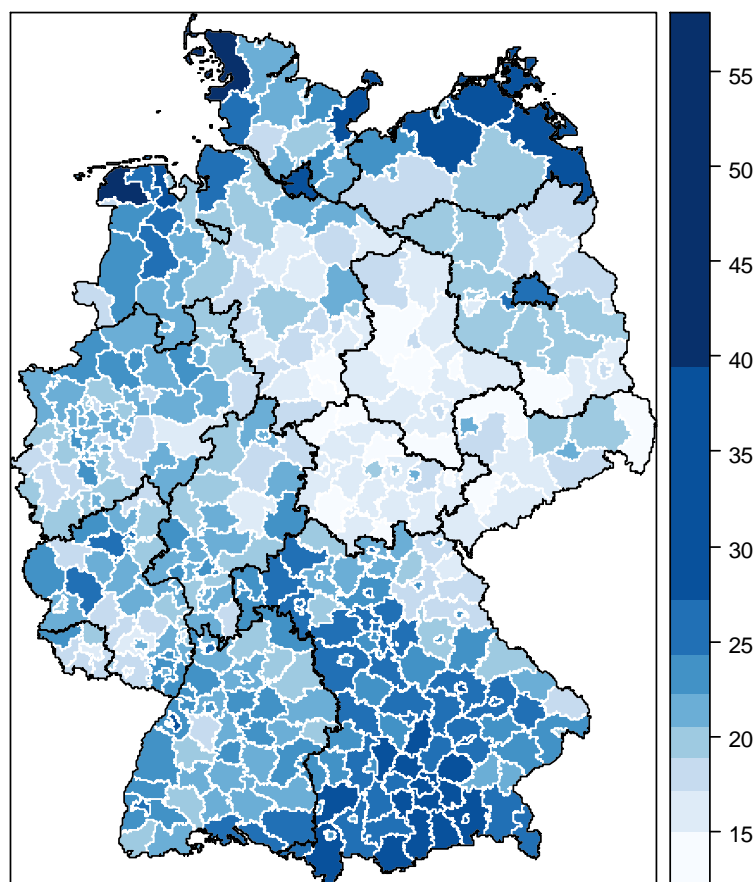
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3 Mrz 2016, 07:28:26, S3PR0120B.Chart

- If prices continue to rise, creditors could be tempted to **expand lending excessively and loosen credit standards**. This can result in **systemic risks**.
- Although **new lending accelerated significantly** during 2015, growth in mortgage lending to households can still be described as **moderate in a longer-term comparison**.
- Moreover, **household debt levels in Germany continue to decline**, at least in aggregate terms.
- What is more, the Eurosystem's regular Bank Lending Survey shows that German **banks have not loosened their lending standards for mortgage loans** since 2014.

2. The Bundesbank's dashboard

Price-to-rent ratio for apartments in 2015



- **Studies of averages throughout Germany have limited value**, as moderate rates of increase in house prices for the whole of Germany could **obscure a heterogeneous regional distribution**.
- Although the **differences in price rises** between the regions **diminished** again in 2015, **waning price dynamics** did not reduce **existing gaps** between Southern and Northern Germany as well as Western and Eastern Germany.
- With regard to the future stability of the residential property market as a whole, it is therefore of **key importance to investigate the spatial transmission channels of price impulses in greater depth**.

2. The Bundesbank's dashboard

http://www.bundesbank.de/Navigation/EN/Statistics/Enterprises_and_households/System_of_indicators/system_of_indicators.html



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Employees and labour market

System of indicators for the German residential property market

System of indicators for the German residential property market

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Overview of system of indicators

The objective of the system of indicators is to give a quick and comprehensive overview of the situation on the property market. The system comprises a manageable number of informative indicators that enable a transparent, unbiased and verifiable analysis. The system of indicators is based on a structured presentation from three perspectives: prices, the financial sector and the real economy.

Price indicators

- 📄 Residential property prices in Germany
29.02.2016 | 222 KB, PNG
- 📄 Price indices for rental housing in Germany
29.02.2016 | 172 KB, PNG
- 📄 Standard indicators to evaluate residential property prices in Germany
29.02.2016 | 254 KB, PNG

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Time series

Here you will find all the macroeconomic time series of "System of indicators for the German residential property market".

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3. Affordability indicators

- The **annuity-to-income ratio** extends the price-to-income ratio in the sense that it takes into account the **interest rate conditions**.
- The question, however, remains **what drives the ratio** – is it the numerator (e.g. price) or the denominator (e.g. income)?
- Over and above, **what price should be used?** Certainly, it should be **quality adjusted**. But should it relate to **apartments in urban markets** only, say?
- The same line of reasoning applies to **income**. A **per household** approach appears to be reasonable. But how **narrow or wide** should it be defined?
- Last but not least, **lending standards differ considerably across countries** in terms of loan-to-value ratio, initial rate fixation, life of the loan and so forth.

3. Affordability indicators

Institutional characteristics of mortgage loans (SVR 2013/14)

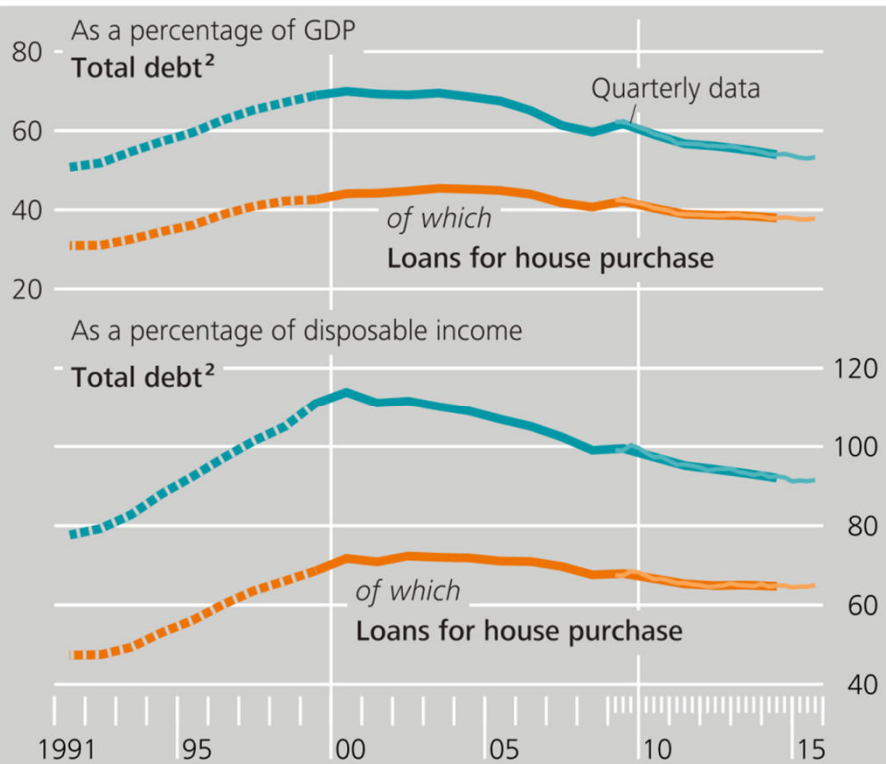
Country	Housing loans to GDP (%)	Average loan to value (%)	Share of floating rates (%)	Average life of the loan (years)	Possibility to withdraw equity
Belgium	47	83	10	20	No
Germany	45	70	15	25	No
France	42	75	15	15	No
Ireland	84	70	67	20	Limited
Italy	23	50	47	15	No
Netherlands	106	90	18	30	Yes
Austria	28	60	61	25	No
Sweden	78	80	52	25	Yes
Spain	62	70	91	20	Limited
U. K.	84	85	.	25	Yes
U. S.	76	80	47	30	Yes

3. Affordability indicators

The case of Germany

Debt of households in Germany*

Annual averages¹



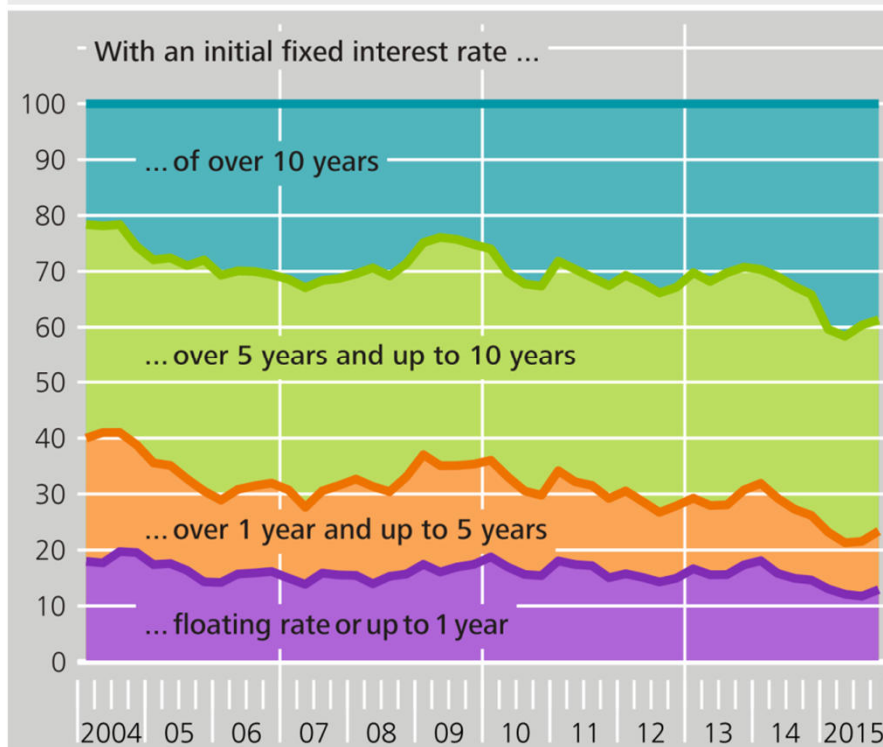
Source: Deutsche Bundesbank's financial accounts. * Unconsolidated.
1 Until 1998 according to ESA 1995; from 1999 according to ESA 2010.
2 Excluding other liabilities.

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Fixed interest periods for loans to households in Germany for house purchase*

As a percentage



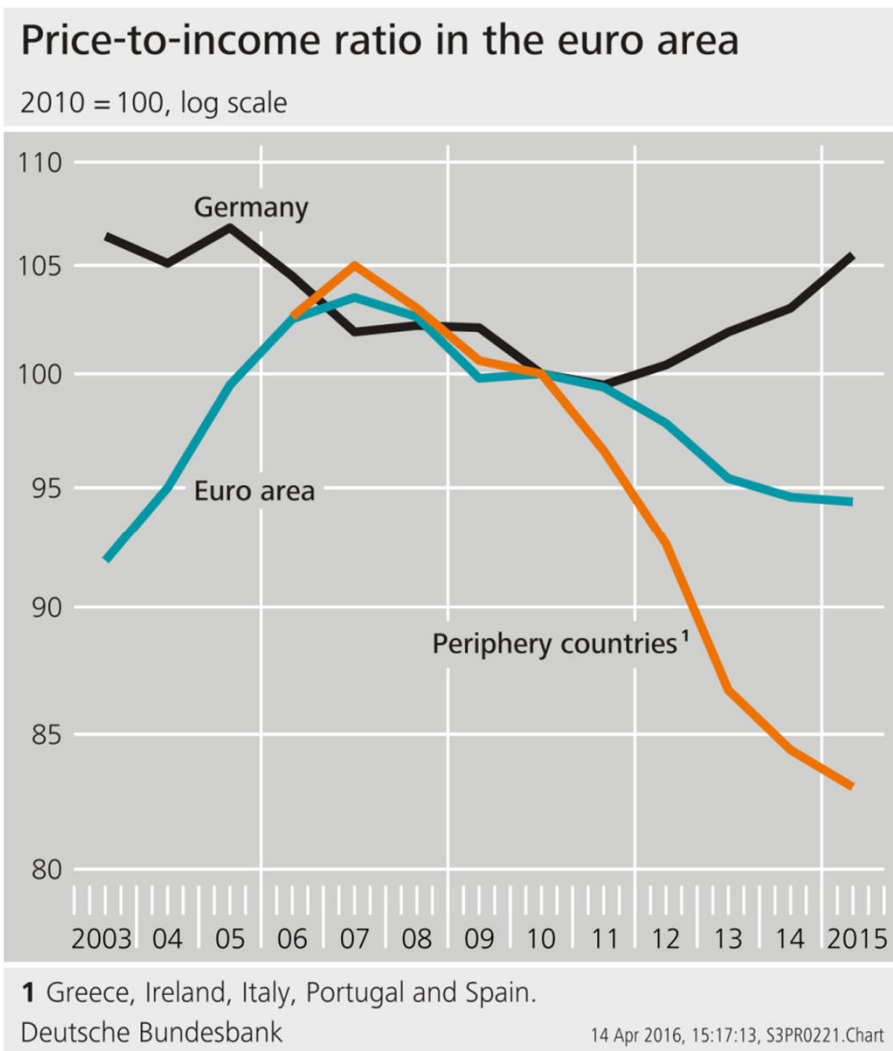
* Calculated as a share of domestic banks' credit volume with a respective fixed interest rate of the total volume.

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25 Feb 2016, 08:34:09, S3PR0124.Chart

3. Affordability indicators

Price-to-income ratio in the euro area



Percentage change from 2010 to 2015

Country	Prices	Income	P-to-I
Germany	+18	+11	+ 6
Euro area	- 1	+ 5	- 5
Periphery*	-18	- 2	-17

An increase represents a rise in the purchase price in relation to disposable income.

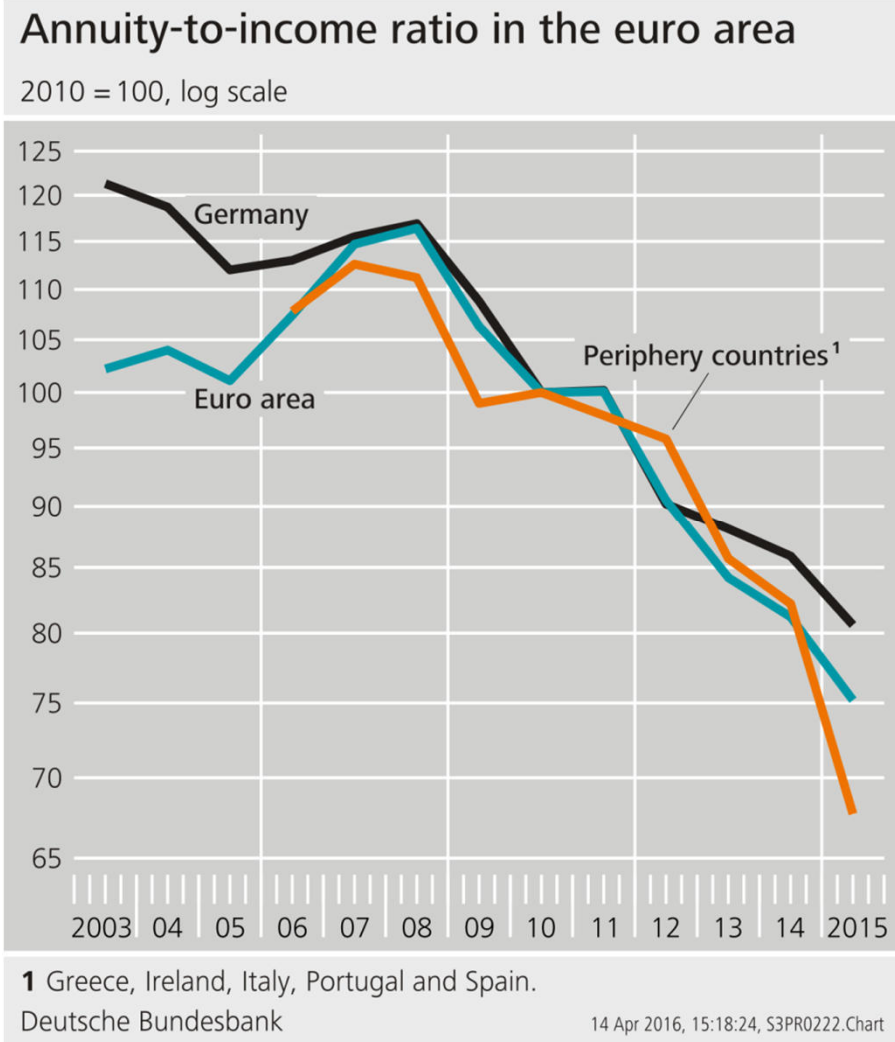
Share of disposable income (gross)

Country	Percentage of euro area
Germany	28
Periphery*	35

* Greece, Ireland, Italy, Portugal and Spain.

3. Affordability indicators

Annuity-to-income ratio in the euro area



Percentage change from 2010 to 2015

Country	P-to-I	Interest	A-to-I
Germany	+ 6	-23	-19
Euro area	- 5	-20	-24
Periphery*	-17	-19	-33

An increase represents a rise in the purchase price in relation to disposable income.

Share of credit volume (5 to 10 years)

Country	Percentage of euro area
Germany	56
Periphery*	1

* Greece, Ireland, Italy, Portugal and Spain.

Contact

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