System of indicators for residential property markets

Price indicators

Residential property prices in Germany

2010 = 100, log scale

- Deutsche Bundesbank
- vdp price index for owner-occupied housing
- Hypoport AG (total index)
- House price index (Destatis)

1 Transaction-weighted. Bundesbank calculations based on price data provided by bulwiengesa AG.

Deutsche Bundesbank

Residential property prices in German towns and cities

2010 = 100, log scale

- Germany
- 127 towns and cities
  - of which: 7 major cities

1 Transaction-weighted. Bundesbank calculations based on price data provided by bulwiengesa AG. Berlin, Dusseldorf, Frankfurt am Main, Hamburg, Cologne, Munich and Stuttgart.

Deutsche Bundesbank

Standard indicators to evaluate residential property prices in Germany

2010 = 100, quarterly, log scale

- Annuity-to-income ratio
- Price-to-income ratio
- Price-to-rent ratio

1 Bundestag calculations based on data provided by the Association of German Pfandbrief Banks (vdp). 2 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. 3 Disposable income per household in Germany, nominal. 4 Prices and rents of apartments.

Deutsche Bundesbank

Price-to-rent ratio for apartments in Germany

2010 = 100, log scale

- Germany
- 127 towns and cities
  - of which: 7 major cities

1 Transaction-weighted. Bundesbank calculations for prices and new lettings of apartments based on data provided by bulwiengesa AG. Berlin, Dusseldorf, Frankfurt am Main, Hamburg, Cologne, Munich and Stuttgart.

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System of indicators for residential property markets
Price indicators

Prices for rental housing in Germany

2010 = 100, log scale

Annual values
- 127 towns and cities
- Existing buildings
- New buildings

Quarterly data
Total, price index for multi-family houses (vdp)

Rents for apartments in Germany

2010 = 100, annual averages, log scale

- New lettings
- Total
- 127 towns and cities
- Existing contracts
- Consumer price index (quarterly data)

1 Transaction-weighted. Bundesbank calculations based on data provided by bulwiengesa AG for multi-family houses.
2 Bundesbank calculations based on data provided by bulwiengesa AG for multi-family houses.
3 Bundesbank calculations based on data provided by bulwiengesa AG for multi-family houses.

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System of indicators for residential property markets

**Financial indicators**

**Dynamics in domestic banks’ loans for house purchase**

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

- To domestic households
- To domestic companies

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</thead>
<tbody>
<tr>
<td>Rate</td>
<td>+8%</td>
<td>+6%</td>
<td>+4%</td>
<td>+2%</td>
<td>0%</td>
<td>+2%</td>
<td>+4%</td>
<td>+6%</td>
<td>+8%</td>
<td>+6%</td>
<td>+4%</td>
<td>+2%</td>
<td>0%</td>
<td>+2%</td>
<td>+4%</td>
<td>+6%</td>
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* Data adjusted for statistical changes. 1 Including self-employed persons and sole traders. 2 Excluding self-employed persons and sole traders.

Deutsche Bundesbank

**Stock of domestic banks’ loans for house purchase**

As a percentage of GDP, seasonally adjusted

- To domestic households
- To domestic companies

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<tbody>
<tr>
<td>Rate</td>
<td>42%</td>
<td>41%</td>
<td>40%</td>
<td>39%</td>
<td>38%</td>
<td>37%</td>
<td>36%</td>
<td>35%</td>
<td>34%</td>
<td>33%</td>
<td>32%</td>
<td>31%</td>
<td>30%</td>
<td>29%</td>
<td>28%</td>
<td>27%</td>
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</tbody>
</table>

1 Including self-employed persons and sole traders. 2 Excluding self-employed persons and sole traders.

Deutsche Bundesbank

**Changes in credit standards and interest margins on loans to households for house purchase in Germany**

Net percentage

- Wider margins, Tightened standards
- Narrower margins, Eased standards
- Margins on average loans
- Margins on riskier loans
- Credit standards
- Forecast of credit standards

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<tbody>
<tr>
<td>Margin</td>
<td>+75%</td>
<td>+50%</td>
<td>+25%</td>
<td>0%</td>
<td>-25%</td>
<td>-50%</td>
<td>-75%</td>
<td>-100%</td>
<td>-125%</td>
<td>-150%</td>
<td>-175%</td>
<td>-200%</td>
<td>-225%</td>
<td>-250%</td>
<td>-275%</td>
<td>-300%</td>
</tr>
</tbody>
</table>

Source: Bank Lending Survey of the Eurosystem. * For credit standards (margins): difference between the number of respondents reporting “tightened considerably” and “tightened somewhat” (“widened considerably” and “widened somewhat”) and the number of respondents reporting “eased somewhat” and “eased considerably” (“narrowed somewhat” and “narrowed considerably”) as a percentage of the responses given.

Deutsche Bundesbank

**Debt of households in Germany**

- As a percentage of GDP
- Total debt
- Loans for house purchase

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</thead>
<tbody>
<tr>
<td>Rate</td>
<td>75%</td>
<td>60%</td>
<td>40%</td>
<td>25%</td>
<td>10%</td>
<td>0%</td>
<td>+10%</td>
<td>+20%</td>
<td>+30%</td>
<td>+40%</td>
<td>+50%</td>
<td>+60%</td>
<td>+70%</td>
<td>+80%</td>
<td>+90%</td>
<td>+100%</td>
<td>+110%</td>
<td>+120%</td>
</tr>
</tbody>
</table>

Source: Deutsche Bundesbank’s financial accounts (unconsolidated). Until 1998 according to ESA 1995; from 1999 according to ESA 2010.

* Loans to private households and private non-profit institutions, annual average. 1 Moving average over the last four quarters.

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Financial indicators

Interest payments on loans to households in Germany for house purchase

As a percentage of disposable income

* Data based on time-related stocks of MFI interest rate statistics for secured and unsecured loans, including overdraft loans.
Deutsche Bundesbank

Interest rates on loans to households in Germany for house purchase

% p.a. With an initial rate fixation of ...

* Data based on the monthly new business of the MFI interest rate statistics for secured and unsecured loans, excluding overdraft loans. 1 Calculated as the difference between the interest rate with an initial rate fixation of over 5 years and up to 10 years and the interest rate with an initial rate fixation of over 1 year and up to 5 years.
Deutsche Bundesbank

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

As a percentage

* Calculated as domestic banks’ volume of new business with respective rate fixation periods as a share of total new business (also including extensions).
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System of indicators for residential property markets

Real economic indicators

Building permits and completed housing units in Germany

<table>
<thead>
<tr>
<th>Year</th>
<th>Building permits</th>
<th>Completed housing units</th>
</tr>
</thead>
<tbody>
<tr>
<td>1992</td>
<td>450</td>
<td>350</td>
</tr>
<tr>
<td>2010</td>
<td>500</td>
<td>400</td>
</tr>
</tbody>
</table>


Housing investment in Germany

<table>
<thead>
<tr>
<th>Year</th>
<th>Percentage of GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>1992</td>
<td>7.0</td>
</tr>
<tr>
<td>2010</td>
<td>5.0</td>
</tr>
</tbody>
</table>


New orders for housing construction in the main construction sector in Germany

<table>
<thead>
<tr>
<th>Year</th>
<th>Monthly data</th>
</tr>
</thead>
<tbody>
<tr>
<td>1992</td>
<td>150</td>
</tr>
<tr>
<td>2011</td>
<td>120</td>
</tr>
</tbody>
</table>


Number of transactions for apartments in Germany

<table>
<thead>
<tr>
<th>Year</th>
<th>Log scale, 2010 = 100</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>120</td>
</tr>
<tr>
<td>2018</td>
<td>90</td>
</tr>
</tbody>
</table>

Source: Extrapolation provided by vdpResearch GmbH on the basis of data from surveyor committees. Berlin, Dusseldorf, Frankfurt am Main, Hamburg, Cologne, Munich and Stuttgart. Deutsche Bundesbank.