

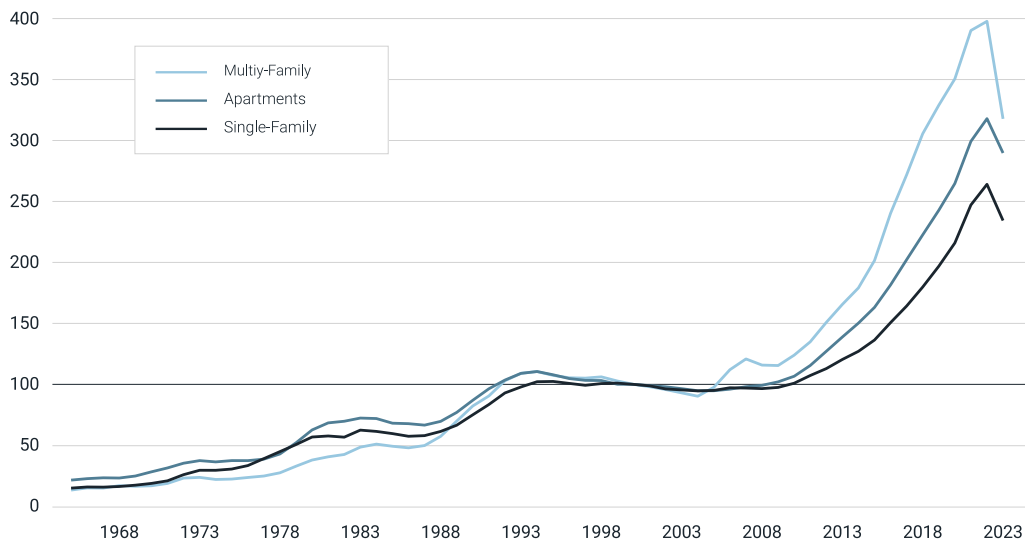
RESULTS FOR 2023 & 2023 Q4

Greix - 2023 with the largest drop in real estate prices on record

Bonn & Kiel, February 8, 2024 - The prices for residential real estate in Germany have fallen in 2023 more sharply than ever before since the beginning of our data recording in 1964. This trend applies to all residential segments, with the decline being most pronounced in multi-family houses. However, it is evident that prices are slowly stabilizing in the 4th quarter of 2023.

Price Development Market Segments

Greix; Index 2000=100



The Greix is a joint project of the local expert committees, ECONtribute and the Kiel Institute tracking real estate price trends of currently 19 German cities.

The speed and extent of the current fall in real estate prices in Germany are historically unprecedented. Never since the expert committees started recording prices in the 1960s, have real estate prices fallen so quickly and sharply.

Looking at the year as a whole, sales prices in 2023 compared to the previous year fell by 8.9 percent for apartments, 11.3 percent for single-family homes, and 20.1 percent for multi-family homes.

During the previously most significant price decline in the mid-90s, sales prices fell to a similar extent – slightly less for houses, a bit more for apartments – but it took about 10 years for this to happen.

The recent price decline was preceded by a historically unique price rally since around 2009. Since then, prices have increased three to fourfold depending on the segment, before the sharp downturn began in 2022. The highest price increase to date occurred at the end of the 80s when prices doubled within about 5 years.

Price Development Market Segments

Index, Change in Percent

| | Previous Quarter | Previous-Year Quarter |
|----------------------|------------------|-----------------------|
| Apartments | - 0.6 % | - 6.9 % |
| Single-Family Houses | - 1.2 % | - 7.8 % |
| Multi-Family Houses | 4.7 % | - 13.7 % |

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The latest update of the Greix shows that prices slightly stabilize in the **4th quarter of 2023**, and the speed of the price decline decreases.

Compared to the **previous quarter, Q3 2023**, the prices for **apartments** have only decreased slightly by 0.6 percent. The prices for **single-family homes** have dropped by 1.2 percent. Prices for **multi-family houses** have even increased by 4.7 percent, with this segment experiencing relatively high volatility due to the low number of transactions.

Due to the now only modest quarterly inflation rates, the **inflation-adjusted** price changes for all market segments deviate only minimally.

Compared to the **same quarter of the previous year, Q4 2022**, all residential segments are significantly in the negative, although the declines are less severe than in previous quarters.

- **TOP-7 CITIES.** The apartment sales prices in Germany's top-7 cities (Berlin, Düsseldorf, Frankfurt a. M., Hamburg, Cologne, Munich, Stuttgart) show a very heterogeneous development.

While, compared to the previous quarter, prices in Cologne and Stuttgart are still falling quite sharply by 3.6 percent each, in Berlin (-0.4 percent), Frankfurt (-0.2 percent) and Hamburg (+0.2 percent) sales prices have plateaued.

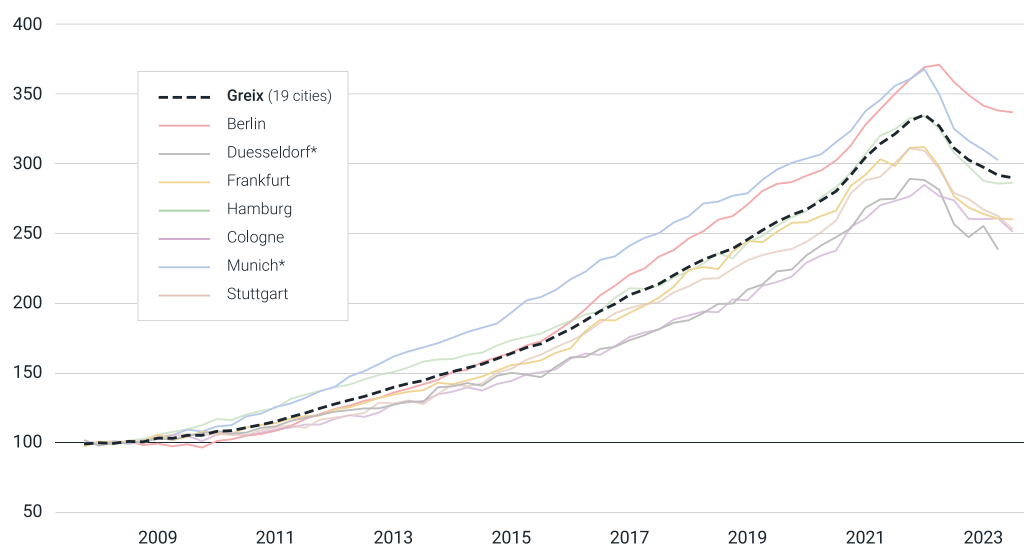
In terms of the average price per square meter (rounded to the nearest hundred), Munich is the most expensive city with €8,600/m² (as of Q3 2023) ahead of Hamburg. Frankfurt then follows with a price of €5,300/m².

Stuttgart and Cologne are the most affordable of the top-7 cities with an average of €4,200/m². Düsseldorf is slightly more expensive at €4,300/m² (as of Q3 2023).

Note: Data for the fourth quarter of 2023 is missing for Düsseldorf and Munich. Square meter prices cannot be displayed for Hamburg and Berlin.

Price Development Apartments

Top-7 Cities, Greix; Index 2008=100



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*Data from 2023 Q3.

Price Development Apartments

Index, Change in Percent vs. Previous-Year Quarter

| | 21Q4 | 22Q1 | 22Q2 | 22Q3 | 22Q4 | 23Q1 | 23Q2 | 23Q3 | 23Q4 |
|--------------------------|-------------|-------------|-------------|------------|--------------|--------------|--------------|--------------|--------------|
| Greix (19 cities) | 14.6 | 13.3 | 10.0 | 4.1 | - 3.1 | - 8.4 | -11.2 | -10.8 | - 6.9 |
| Berlin | 15.8 | 15.1 | 12.6 | 9.4 | 2.4 | - 3.0 | - 7.5 | - 8.9 | - 6.1 |
| Duesseldorf | 11.2 | 14.0 | 7.4 | 2.5 | - 6.6 | -14.4 | -11.4 | -15.2 | — |
| Frankfurt | 12.0 | 9.6 | 6.8 | - 1.7 | - 7.3 | -13.8 | -15.3 | -12.6 | - 5.9 |
| Hamburg | 14.7 | 13.3 | 8.8 | 1.6 | - 5.2 | -10.4 | -13.9 | -12.1 | - 7.0 |
| Cologne | 15.0 | 8.5 | 9.3 | 2.5 | 0.2 | - 5.8 | - 8.6 | - 5.8 | - 8.2 |
| Munich | 12.8 | 11.4 | 8.9 | 1.2 | - 8.6 | -12.2 | -15.7 | -13.5 | — |
| Stuttgart | 15.9 | 11.6 | 7.3 | 2.0 | - 7.2 | -11.7 | -13.6 | -11.4 | - 9.3 |

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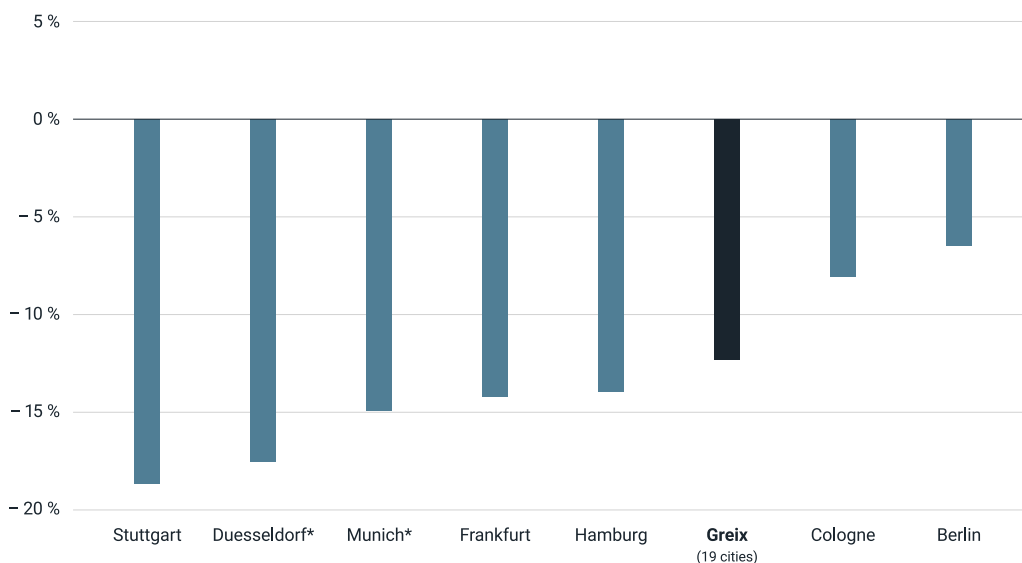
- **OTHER CITIES.** There are also significant regional differences in the price development of apartments outside the top-7 cities in the 4th quarter of 2023.

Prices are falling in Chemnitz (-3.5 percent), Wiesbaden (-3.9 percent), and Karlsruhe (-3.9 percent). Karlsruhe is included for the first time in the latest Greix update.

Prices are rising in Potsdam (+4.3 percent), Dortmund (+1.9 percent), Leipzig (+1.8 percent), Duisburg (+1.8 percent), and Lübeck (+1.5 percent). In the other cities, prices are slightly increasing or have plateaued.

Price Development Apartments since Peak

Top-7 Cities, Greix; Change in Percent



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*Data from 2023 Q3.

In terms of price levels, Potsdam, Bonn, and Münster reach the level of the top-7 cities with average square meter prices of €4,200/m². Slightly behind are Lübeck, Wiesbaden, Leipzig, and Karlsruhe. The most affordable cities are Duisburg (€1,900/m²) and Chemnitz (€1,500/m²).

- NUMBER OF TRANSACTIONS.** The significant price decrease in 2023 is also accompanied with a reduced number of transactions. With respect to 2022, apartment sales are down by 27 percent, multifamily sales by 19 percent, and single-family sales by 16 percent. The volume of real estate transactions reached its peak in 2021. Since then, there has been a decline in the number of transactions of 49 percent for apartments, 42 percent for multifamily houses, and 39 percent for single-family houses.

However, the latest results from the fourth quarter of 2023 indicate a slight stabilization in the number of transactions. Compared to the previous quarter, transactions increased by 3 percent for apartments, 9 percent for multifamily houses, and 2 percent for single-family houses. This increase is particularly strong in the top-7 cities.

- **DECLINE SINCE PEAK.** For most cities in our sample sales prices reached their peak at the beginning of 2022. Since then, prices have decreased substantially. The largest drop in apartment prices was in Stuttgart with a decrease of 18.7 percent since peak. For the Greix, which includes all 19 cities of the index, the price decline compared to the peak is just over 12 percent. The smallest price decreases were in Berlin and Cologne, where apartment prices dropped „only“ by 6.5 percent (Berlin) and 8.1 percent (Cologne) since the peak.

Measured in current purchasing power, the overall decline in sales prices is about 10 percentage points higher. For Stuttgart, Düsseldorf, and Frankfurt, the inflation-adjusted price decline since the peak is around 25 percent, for the Greix 20 percent.

- **METHODOLOGY.** The Greix is a price index based on a hedonic regression method. This method mitigates price distortions that often arise when using average price per square meter. For instance, if a high number of large apartments in a prime location are sold in a given year, this can inflate average prices per square meter. However, such fluctuations may not reflect a general increase in real estate values. Using hedonic regression methods, specific property characteristics do not cause upward or downward distortions in the price trend. Before we estimate the indices, we clean the data for outliers. For more information on our data cleaning process and methodology, please see our documentation at www.greix.de.

Due to the time lag between the notarized purchase of a property and its recording in the purchase price collection of the expert committees, it is possible that individual purchase contracts have not yet been included in the calculation of the indices.

Displaying the average price per square meter provides insight into the local price level. However, the actual value of a property depends on its unique characteristics and may deviate significantly from this indication.

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About

WHAT IS THE GREIX?

The Greix is a real estate price index for Germany based on actual, notarized sales prices. It tracks the price development of individual cities and neighborhoods back to 1960 and is based on more than two million transaction data. The dataset can be used to analyze long-term trends in real estate markets and to contextualize current developments in a historical context.

WHAT DATA AND METHODS ARE USED TO CREATE THE INDICES?

The data collection and evaluation takes place in cooperation with the local expert committees. All real estate transactions are recorded in their entirety. Price trends are calculated using the latest scientific standards and statistical methods (hedonic regression method). The Greix thus stands for the highest scientific data quality.

WHO IS FUNDING THE GREIX?

Greix is financed by public funding and is a project of the Bonn-Cologne Cluster of Excellence ECONtribute, funded by the DFG, and the Kiel Institute for the World Economy (IfW Kiel) with the aim of increasing transparency in the real estate market. Different price indices for 18 cities are freely accessible at www.greix.de. Additional cities will gradually be added to the data set.



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