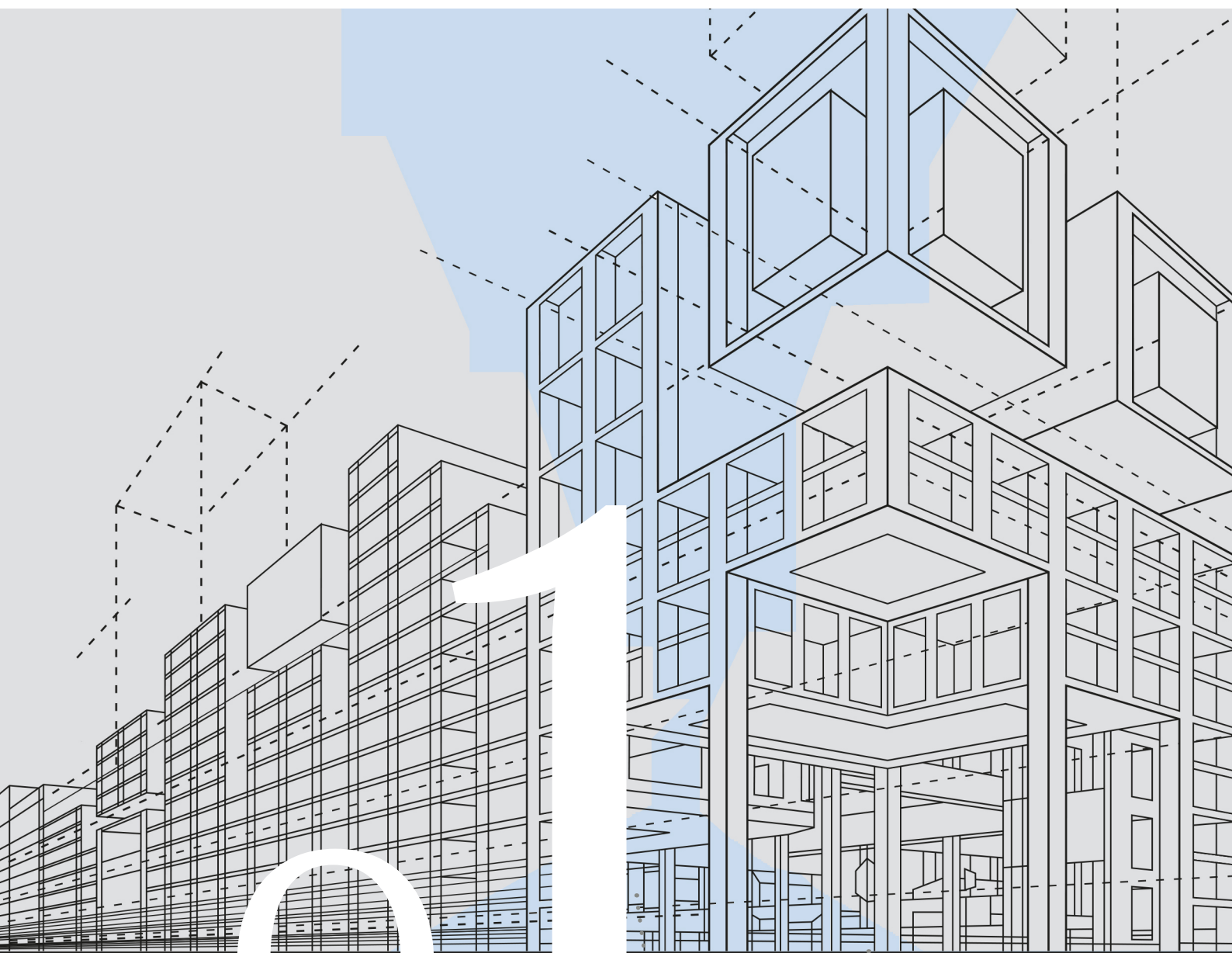# vdp INDEX

Price correction in the property market continues

Q1.2023

vdp property price index

vdpResearch regularly publishes transaction-based rent and price indices on the development of the real estate markets in Germany. Fifteen sub-indices are compiled every quarter, which reflect the most important segments of the German real estate market. Every quarter, more than 700 banks transmit more than 60,000 data from real transactions, which are entered into the transaction database and evaluated. This provides timely and reliable market information.

Property market

In the first quarter of 2023, the vdp property price index dropped by 3.3% year on year. Compared with the previous quarter, prices fell by 2.3%. These were the most pronounced decreases in the rates of change, both year on year and quarter on quarter, since the index records began. The negative development is mainly attributable to inflation and the changing interest rate environment as well as to uncertainty over how the economy will develop going forward. As a result, investor and household demand for real estate fell appreciably. One positive factor is that unemployment in Germany remains low, which curbs the risk of loan defaults in residential property financing.

Overall, the current negative factors have depressed prices across all property classes, albeit to varying degrees. Prices in the market for residential properties contracted by 2.1% year on year and 2.0% quarter on quarter.

−3.3%

Q1.2023 to Q1.2022

−2.3%

Q1.2023 to Q4.2022

Residential property prices are still quite robust – compared with the development of commercial property prices – due to the fact that new construction activity remains low while demand for housing remains high. While both factors have a stabilising effect, they lead to a sharp rise in rents for housing.
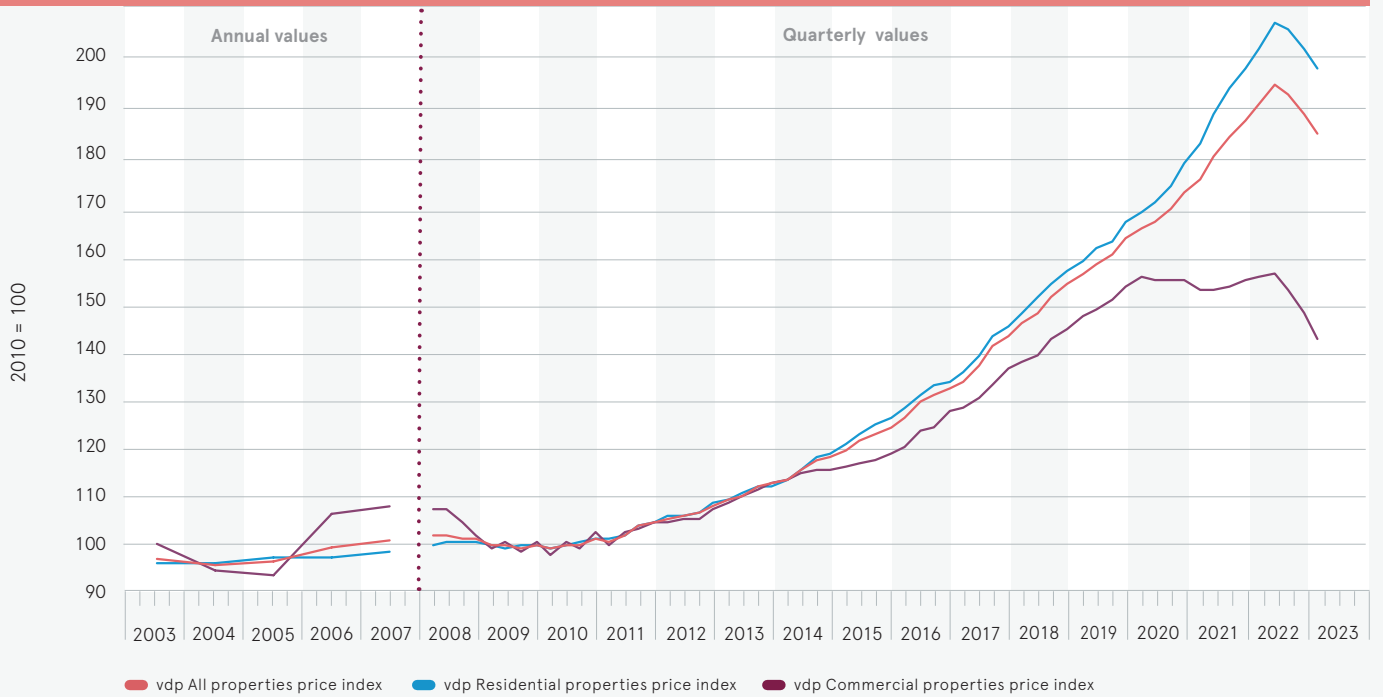
In the commercial property market, prices dropped by 8.3% and 3.6% year on year and quarter on quarter, respectively. The growing investor reticence was triggered, above all, by the changes in the interest rate environment, the associated increase in financing terms and, given the general rise in returns, changed return expectations also in the property market.

Price development	year-on-year Q1 2023 to Q1 2022	quarter-on-quarter Q1 2023 to Q4 2022
Property market as a whole	-3.3%	-2.3%
Housing in Germany	-2.1%	-2.0%
Owner-occupied housing in top 7 markets	-1.4%	-1.3%
Commercial property market	-8.3%	-3.6%
Office properties	-7.5%	-5.0%
Retail properties	-10.5%	-1.7%

MARKET AS A WHOLE

Price correction in the property market continues

Residential/commercial real estate

Annual values — Quarterly values

— vdp All properties price index — vdp Residential properties price index — vdp Commercial properties price index

Quartel	All properties		All residential properties		All commercial properties	
	Index	y-o-y change in %l	Index	Veränderung in % change in %	Index	y-o-y change in %
Q2 2021	179,7	8,0	188,5	10,7	152,6	−1,1
Q3 2021	184,0	8,7	194,1	11,4	153,0	−0,9
Q4 2021	187,4	8,4	198,0	10,7	154,5	0,3
Q1 2022	190,8	8,8	202,3	10,7	155,2	1,8
Q2 2022	194,8	8,4	207,5	10,1	155,4	1,9
Q3 2022	192,8	4,7	205,9	6,1	152,0	−0,6
Q4 2022	188,9	0,8	202,2	2,1	147,6	−4,4
Q1 2023	184,5	−3,3	198,1	−2,1	142,3	−8,3

Index: 2010 = 100

−3.3%
Market as a whole

−2.1%
Housing market

−8.3%
Commercial property market

Slight decline in prices for owner-occupied housing
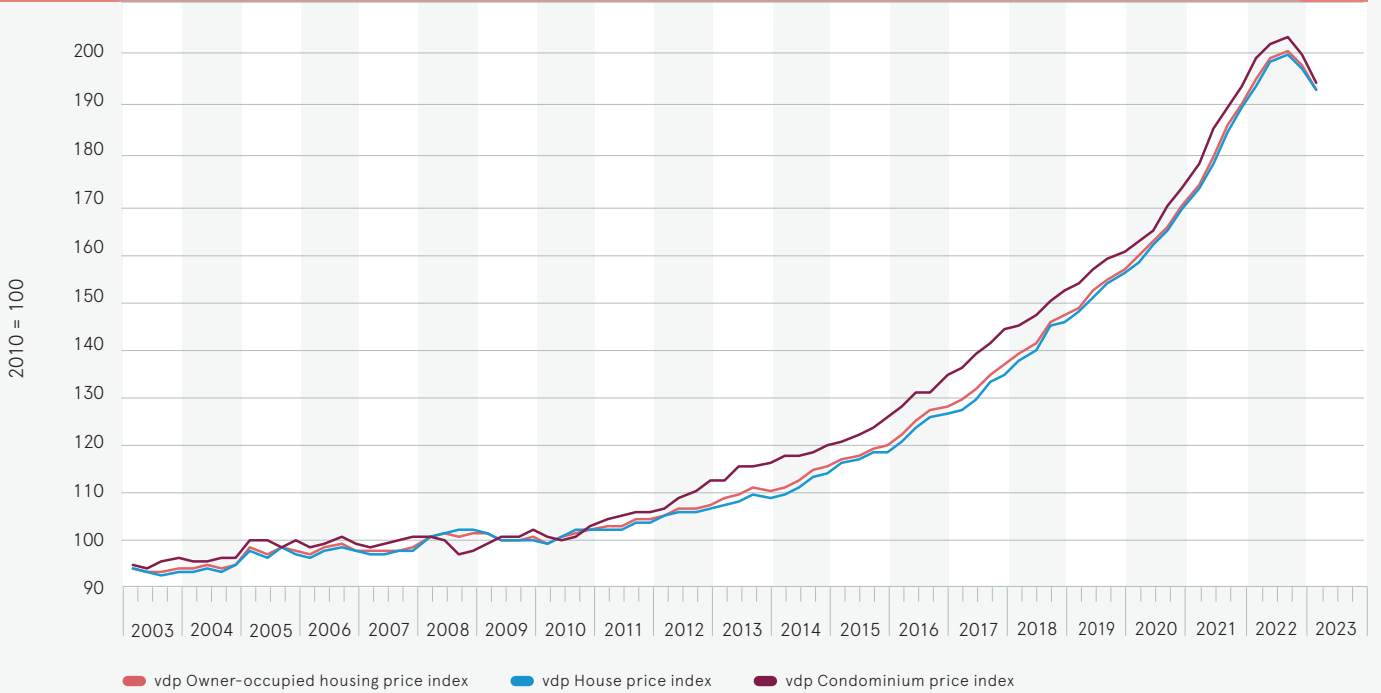
HOUSING MARKET

Owner Occupied Housing

Legend: vdp Owner-occupied housing price index — vdp House price index — vdp Condominium price index

2010 = 100

	Owner-occupied housing		Single family houses		Condominiums	
Quarter	Index	y-o-y change in %	Index	y-o-y change in %	Index	y-o-y change in %I
Q2 2021	177.6	10.9	176.1	10.4	183.3	12.5
Q3 2021	184.0	12.5	183.1	12.6	187.9	12.2
Q4 2021	188.9	12.4	188.0	12.5	192.4	12.1
Q1 2022	193.6	12.5	192.4	12.6	198.3	12.5
Q2 2022	198.3	11.6	197.5	12.1	201.2	9.8
Q3 2022	199.3	8.3	198.4	8.4	202.6	7.8
Q4 2022	196.3	3.9	195.6	4.0	199.0	3.5
Q1 2023	191.6	-1.0	191.2	-0.6	193.2	-2.6

Index: 2010 = 100

−1.0%
Owner-occupied housing

−0.6%
Single family houses

−2.6%
Condominiums

Prices for multi-family houses down year on year and quarter on quarter
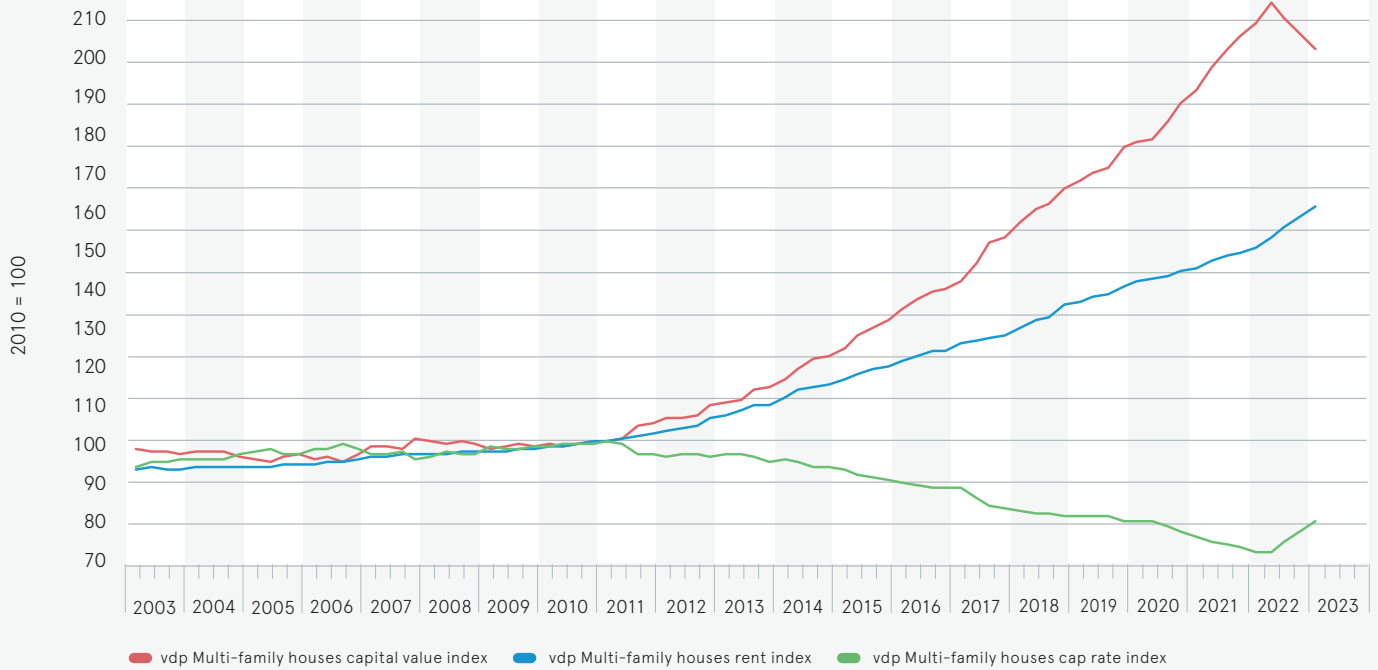
HOUSING MARKET

Multi Family Houses

- ■ vdp Multi-family houses capital value index
- ■ vdp Multi-family houses rent index
- ■ vdp Multi-family houses cap rate index

Quarter	Capital value		Residential rents		Cap rate	
	Index	y-o-y change in %	Index	y-o-y change in %	Index	y-o-y change in %
Q2 2021	199.8	10.5	148.3	3.3	74.2	−6.5
Q3 2021	204.4	10.4	150.2	4.0	73.5	−5.9
Q4 2021	207.4	9.1	150.6	3.3	72.6	−5.3
Q1 2022	211.3	9.1	151.9	3.7	71.9	−4.9
Q2 2022	216.9	8.6	154.9	4.4	71.4	−3.9
Q3 2022	212.8	4.1	157.4	4.8	74.0	0.6
Q4 2022	208.3	0.4	160.4	6.5	77.0	6.0
Q1 2023	204.7	−3.1	163.1	7.4	79.7	10.9

Index: 2010 = 100

−3.1%
Capital value
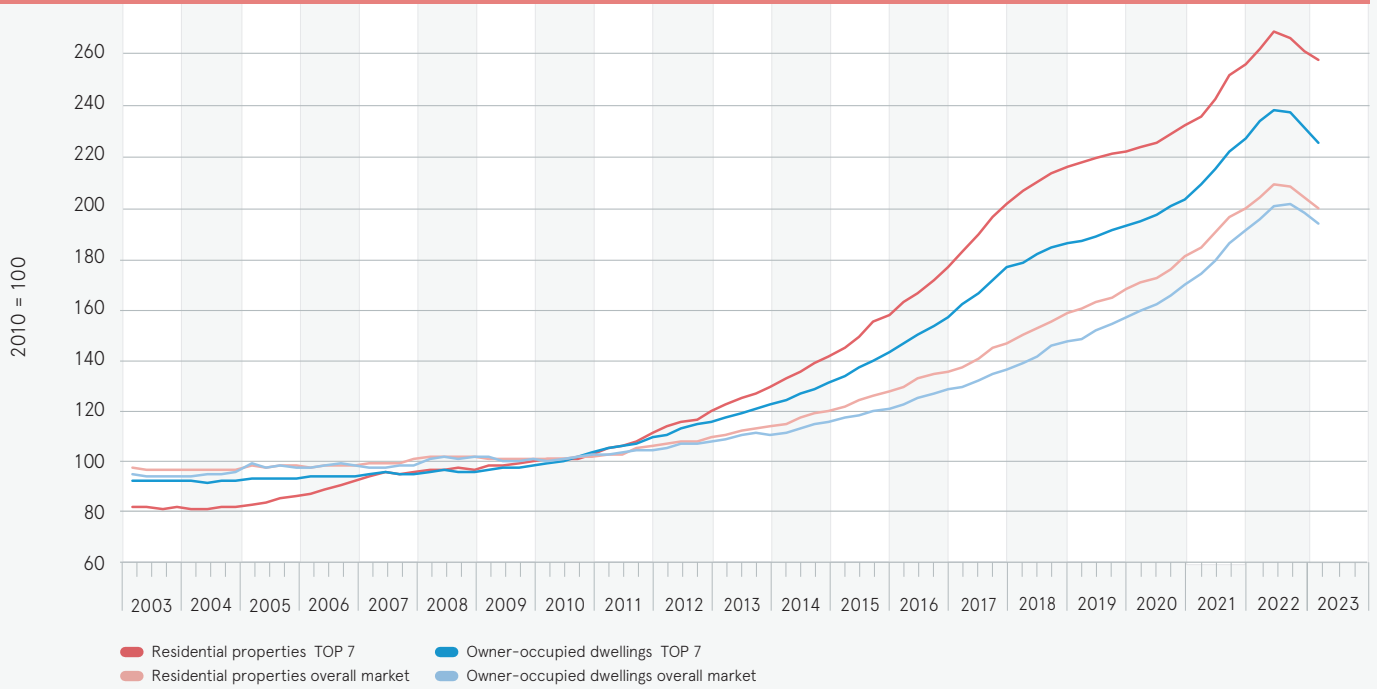
+7.4%
Residential rents

+10.9%
Liegenschaftszinssatz

Lower demand
leads to price adjustments

HOUSING MARKET – TOP 7

Owner-occupied housing

Legend:
- Residential properties TOP 7
- Residential properties overall market
- Owner-occupied dwellings TOP 7
- Owner-occupied dwellings overall market

Quarter	Residential properties TOP 7		Owner-occupied housing TOP 7	
	Index	y-o-y change in %	Index	y-o-y change in %
Q2 2021	240.2	7.5	213.0	9.0
Q3 2021	249.5	9.9	220.3	10.9
Q4 2021	253.9	10.2	225.0	11.7
Q1 2022	259.6	11.2	231.6	12.0
Q2 2022	266.5	11.0	236.5	11.0
Q3 2022	264.7	6.1	235.6	7.0
Q4 2022	259.4	2.2	229.5	2.0
Q1 2023	255.9	-1.4	223.6	-3.4

Index: 2010 = 100

-1.4%
Residential properties TOP 7

-3.4%
Owner-occupied housing TOP 7

For all the individual figures of the TOP 7 cities, go to www.vdpresearch.de

HOUSING MARKET – TOP 7

Rents under new contracts rise further

Multi-family houses

Legend:
- Capital value TOP 7
- Residential rents TOP 7
- Cap rate TOP 7-multi-family houses
- Capital value overall market
- Residential rents overall market
- Cap rate overall market
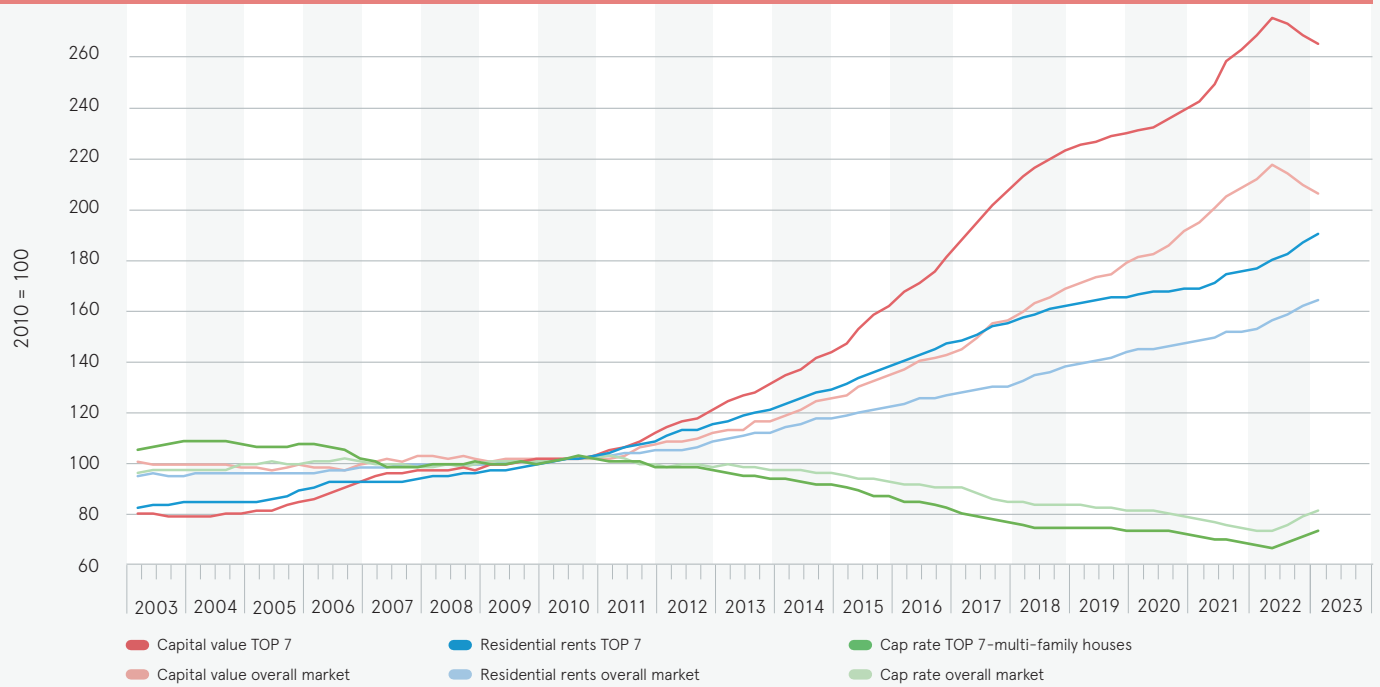
Quarter	Capital value TOP 7		Residential rents TOP 7		Cap rate TOP 7	
	Index	y-o-y change in %	Index	y-o-y change in %	Index	y-o-y change in %
Q2 2021	248.2	7.2	169.4	2.1	68.3	-4.7
Q3 2021	257.9	9.5	173.2	3.9	67.2	-5.2
Q4 2021	262.2	9.7	173.9	4.0	66.3	-5.2
Q1 2022	267.7	10.9	175.3	4.9	65.5	-5.4
Q2 2022	275.1	10.8	178.8	5.5	65.0	-4.8
Q3 2022	273.0	5.8	181.7	4.9	66.6	-0.9
Q4 2022	267.9	2.2	185.3	6.6	69.2	4.3
Q1 2023	265.1	-0.9	189.2	7.9	71.4	8.9

Index: 2010 = 100

-0.9%
Capital value TOP 7

+7.9%
Residential rents TOP 7

+8.9%
Cap rate TOP 7

For all the individual figures of the TOP 7 cities, go to www.vdpresearch.de

COMMERCIAL PROPERTY MARKET

Office properties: considerable rise in returns

Office properties

| | vdp Office buildings capital value index | vdp Office buildings rent index | vdp Office buildings cap rate index |
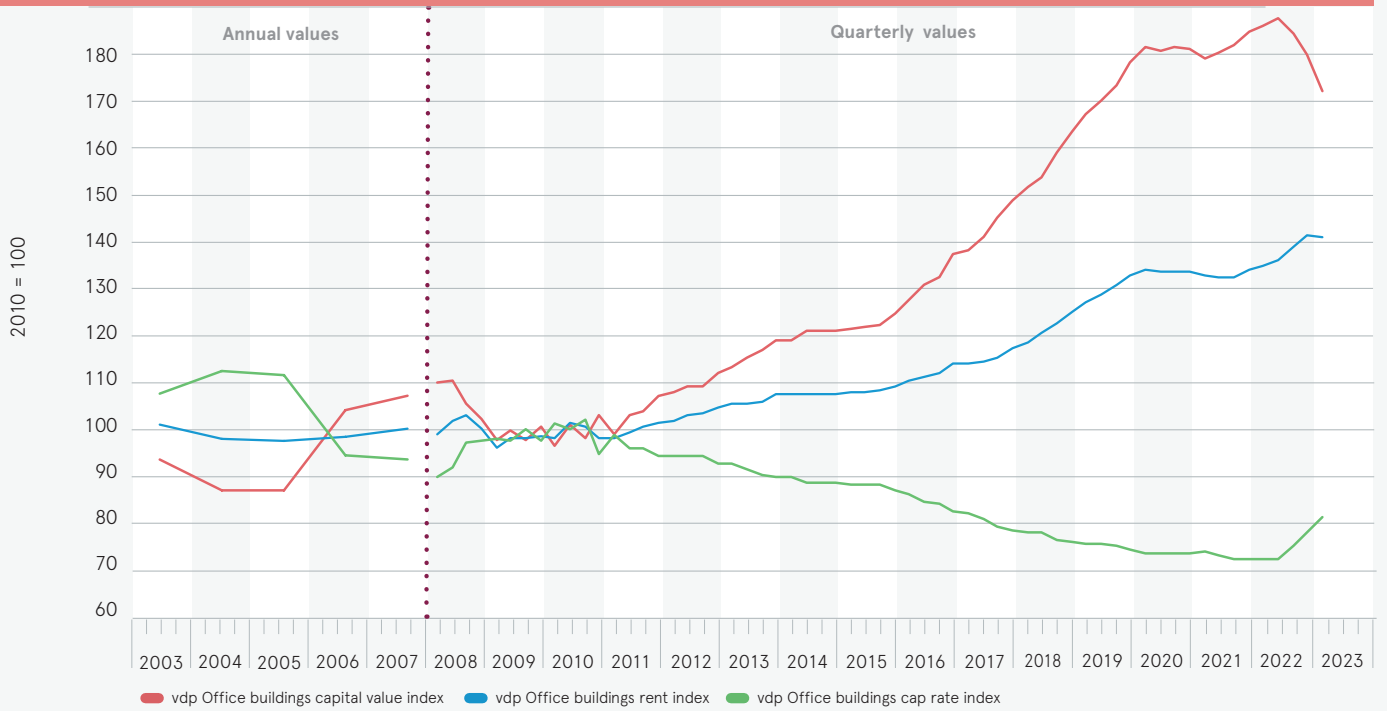
Quarter	Capital value		Office rents		Cap rate	
	Index	y-o-y change in %	Index	y-o-y change in %	Index	y-o-y change in %
Q2 2021	180.4	-0.4	132.9	-1.0	73.7	-0.6
Q3 2021	182.2	0.3	132.8	-1.1	72.9	-1.3
Q4 2021	185.2	2.1	134.4	0.3	72.6	-1.8
Q1 2022	186.5	3.9	135.3	1.6	72.6	-2.2
Q2 2022	187.7	4.1	136.7	2.8	72.8	-1.2
Q3 2022	184.8	1.4	139.3	4.9	75.4	3.4
Q4 2022	180.4	-2.6	141.6	5.4	78.5	8.2
Q1 2023	172.6	-7.5	141.3	4.4	81.9	12.8

Index: 2010 = 100

−7.5%
Capital value

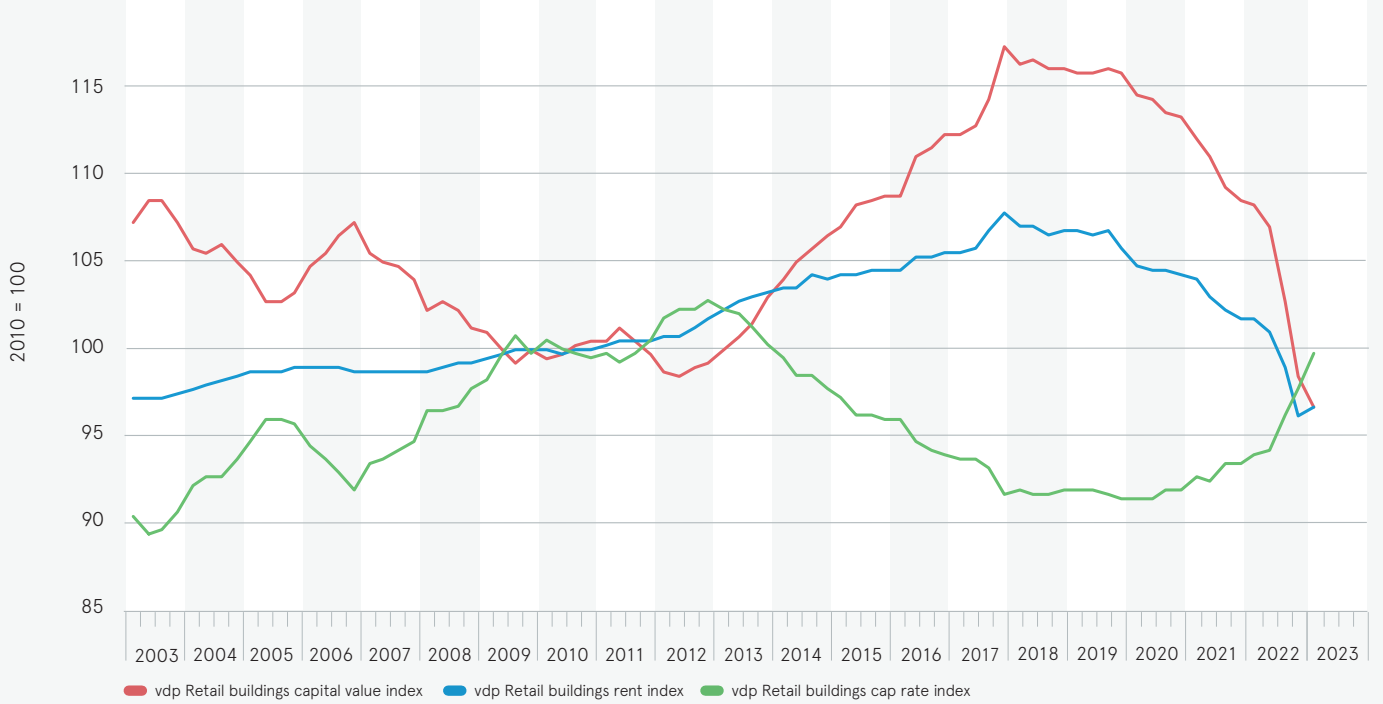**+4.4%**
Office rents

+12.8%
Cap rate

COMMERCIAL PROPERTY MARKET

Retail properties: fall in prices loses momentum

Retail properties

● vdp Retail buildings capital value index   ● vdp Retail buildings rent index   ● vdp Retail buildings cap rate index

Index: 2010 = 100

| Quarter | Capital value | | Retail rents | | Cap rate | |
	Index	y-o-y change in %	Index	y-o-y change in %	Index	y-o-y change in %
Q2 2021	110.8	−2.6	102.9	−1.5	92.9	1.2
Q3 2021	109.1	−3.6	102.2	−2.1	93.7	1.6
Q4 2021	108.4	−4.1	101.7	−2.5	93.8	1.7
Q1 2022	108.2	−3.2	101.8	−2.0	94.1	1.3
Q2 2022	107.0	−3.5	101.0	−1.9	94.4	1.7
Q3 2022	102.8	−5.8	99.0	−3.1	96.3	2.8
Q4 2022	98.5	−9.1	96.5	−5.1	97.9	4.5
Q1 2023	96.9	−10.5	96.8	−5.0	99.9	6.2

−10.5%
Capital value

−5.0%
Retail rents

+6.2%
Cap rate

Methodology

Data basis

German financial institutions participating in the transaction database provide transaction details from their real estate financing business for input into the database. The database has been maintained since 2004 and provides statistically evaluable information on actual real estate transactions. Data are captured by the participating institutions in the form of appraisals of market and mortgage lending values that are prepared in the course of their mortgage lending activities. Property valuations are determined within each financial institution by certified property valuers or specially trained bank personnel. In addition to purchase price and date of purchase, the appraisal includes information about the property's macro and micro location, its age, layout and other price-influencing variables. In the case of certain types of property, information is also collected with regard to rental agreements and the date they were concluded. Information used to derive market and mortgage lending values is ascertained partly from submitted documentation and partly by valuers working in accordance with codified procedures. Table 1 provides an overview of the variables most frequently applied in the specification of individual indices for various market segments.

Table 1: Variables from the vdp's transaction database

Variable	Scaling	Characteristics
Makrolage	Nominal	Districts of Germany
Micro location	Ordinal	Very good – good – average – moderate – poor – catastrophic
Living /usable space	Metric	Living or usable space m^2
Plot size	Metric	Plot size of property in m^2
Year built	Metric	Year property built
Layout	Ordinal	Very good – good – average – moderate – poor – catastrophic
Condition	Ordinal	Very good – good – average –moderate – poor – catastrophic
Saleability	Ordinal	Very good – good – average – moderate – poor – catastrophic
Sub-property type	Nominal	Division of market segment into sub-segments
Purchase price	Metric	Purchase price of property in Euros
Rent	Metric	Contractual rent of property in Euros per m^2

Substantive definitions of individual variables are coordinated with financial institutions via the contractual relationship between them and the vdp. In addition, property valuation in Germany is subject to strict regulations, which ensure that the valuation processes of individual institutions are harmonised to the greatest extent possible, especially as a result of the Verordnung über die Grundsätze für die Ermittlung der Verkehrswerte von Grundstücken (Regulation on the Principles for Determining the Market Value of Property – abbreviated to ImmoWertV) and the Beleihungswertermittlungsverordnung (Regulation on the Determination of the Mortgage Lending Value – abbreviated to BelWertV). Because the purchase prices and significant price-influencing characteristics of individual properties are determined in a uniform manner and because they are input into a uniform database structure, it is possible to analyse the data with the help of complex statistical procedures.

Calculation

As a result of the distinct heterogeneity of real estate properties and in order to be able to measure pure price changes, it is necessary to take account of the varying quality of the properties concerned when measuring prices. Various procedures exist which take explicit account of the differences in the quality of individual properties in order to be able to measure pure price changes.

All vdp real estate indices are calculated by making use of so-called hedonic models. The hedonic model is based on the idea that heterogeneous commodities can be described by reference to their characteristics. In other words, a commodity can be represented as the sum of its characteristics. With regard to real estate, this means that this set of attributes might include, for example, details of physical characteristics such as plot size, living area, year built and details as to the property's location. Each of these named attributes has a specific influence on the price of the property, but there is no market for the attributes themselves; they cannot be sold separately and therefore cannot be viewed in isolation. It is possible, nonetheless, implicitly to determine the proportion of the overall price of the property which each individual attribute makes up by examining real estate supply and demand. Multivariate regression models are used for this purpose, helping to provide a statistical estimate of the marginal contribution of each attribute. It is assumed that the model incorporates all relevant attributes and that deviations occur simply by coincidence and are not indicative of any systematic structures.

Weighting

The overall index is the weighted arithmetical average of the various price indices for residential and commercial real estate. The weightings used correspond to the share of monetary turnover in the German real estate market constituted respectively by residential and commercial real estate. Based on details provided by valuer committees (Gutachterausschüsse), these averaged 75.6 % and 24.4 %, respectively, between 2007 and 2012.

The weights used correspond with the percentage share of households in Germany living in their own home. For the year 2011 this share stood at 50.7 %. Accordingly, 49.3 % lived in a rented dwelling. The weights were derived on the basis of the building and housing census conducted by the Federal Statistical Office in 2011. The price index for owner-occupied housing is calculated as a weighted arithmetic mean of the percentage of households living in their own single-family house or condominium. In 2011 these shares amounted to 79.7 % for single-family houses and 20.3 % for condominiums.

For the commercial property price index, the weightings attributable to the office property capital value index and the retail property capital value index correspond to the proportion of loans in the accounts of Pfandbrief Banks that were granted to these two categories. The figures for office property and retail property amount to 60 % and 40 %, respectively.

Top 7 residential properties

The top 7 residential property indices are calculated analogously to the calculation for the vdp's nationwide property price indices. The indices are estimated separately for each of the cities on the basis of the transaction database. Then, the seven individual indices of the relevant market segment are aggregated according to the respective shares to form a top 7 index. For more information, please visit the website of vdpResearch.

Base year

Starting from this edition, the base year for the indices is 2010.

Publication

All vdp real estate price indices are published on a quarterly basis. Each year's first quarter index figures are published on 10 May of the same year (six weeks after the end of the quarter under review). Other publication dates are as follows:

- 10 August, 2nd quarter
- 10 November, 3rd quarter
- 10 February of the following year, 4th quarter (including figures for the year as a whole)

The index figures are released at 8:30 a.m. on the respective publication dates. Where the publication date falls on a Saturday, Sunday or public holiday, the index figures are published on the next working day at 8:30 a.m.

The accompanying press releases are published in German and English on the websites of the Verband deutscher Pfandbriefbanken e.V. (vdp)
www.pfandbrief.de and vdpResearch GmbH www.vdpresearch.de.

Liability disclaimer

The data and information contained in this publication are based on the transaction database, which we regard as reliable. However, we are unable to guarantee the accuracy and completeness of the data. All opinions expressed reflect the current assessment of vdpResearch GmbH. No warranty is given with regard to the content of these opinions and prognoses. In particular, no liability can be assumed for future economic and technical developments. Data and information contained in this publication can change in the future without prior notice.

Copyright

Content, especially where it relates to information, data, texts and maps, is protected by copyright. Reproduction requires the prior consent of vdpResearch GmbH.

Appendix

10-year overview of the real estate market

Market as a whole

	All properties		All residential properties		All commercial properties	
Year	Index	y-o-y change in %	Index	y-o-y change in %	Index	y-o-y change in %
2013	110.7	4.1	110.9	3.9	110.4	4.6
2014	115.9	4.7	116.4	5.0	114.6	3.8
2015	121.7	5.0	123.3	5.9	117.0	2.1
2016	129.5	6.4	131.4	6.5	123.7	5.8
2017	138.3	6.8	140.5	6.9	131.8	6.5
2018	149.4	8.0	152.2	8.3	140.7	6.8
2019	159.0	6.4	162.0	6.5	149.7	6.4
2020	168.4	5.9	173.0	6.8	154.3	3.1
2021	181.6	7.8	190.8	10.3	153.1	-0.8
2022	191.8	5.6	204.5	7.2	152.6	-0.4

Index: 2010 = 100

Housing market

Owner occupied housing

Index: 2010 = 100

Year	Owner occupied housing		Single family houses		Condominiums	
	Index	y-o-y change in %	Index	y-o-y change in %	Index	y-o-y change in %
2013	108.7	3.1	107.5	2.6	113.6	4.9
2014	112.1	3.1	110.8	3.1	117.0	3.0
2015	117.2	4.6	116.0	4.7	121.7	4.0
2016	124.2	6.0	122.8	5.8	129.6	6.5
2017	131.4	5.8	129.6	5.5	138.5	6.8
2018	141.5	7.7	140.2	8.2	146.6	5.8
2019	151.0	6.8	150.0	7.0	155.2	5.9
2020	162.2	7.4	161.4	7.6	165.6	6.7
2021	180.6	11.3	179.5	11.2	185.0	11.7
2022	196.8	9.0	196.0	9.2	200.3	8.3

Multi-family houses

Index: 2010 = 100

Year	Capital value		Residential rents		Cap rate	
	Index	y-o-y change in %	Index	y-o-y change in %	Index	y-o-y change in %
2013	113.1	4.8	109.3	4.2	96.6	-0.5
2014	120.8	6.8	114.5	4.8	94.8	-1.9
2015	129.5	7.3	118.9	3.9	91.8	-3.2
2016	138.7	7.1	123.7	4.0	89.1	-2.9
2017	149.7	7.9	127.7	3.2	85.3	-4.3
2018	163.2	9.0	133.6	4.6	81.9	-4.0
2019	173.2	6.2	139.6	4.5	80.6	-1.6
2020	184.0	6.2	144.3	3.3	78.4	-2.7
2021	201.3	9.4	148.9	3.2	74.0	-5.7
2022	212.3	5.5	156.1	4.9	73.6	-0.6

Top 7 housing market

Owner occupied housing TOP 7

For all the individual figures of the

TOP 7

cities, go to www.vdpresearch.de

Year	Residential properties TOP 7		Owner occupied housing TOP 7	
	Index	y-o-y change in %	Index	y-o-y change in %
2013	124.4	8.3	118.4	5.8
2014	135.3	8.7	125.9	6.3
2015	150.0	10.9	136.7	8.6
2016	167.6	11.7	150.0	9.7
2017	190.5	13.7	167.3	11.5
2018	209.3	9.9	180.7	8.0
2019	218.0	4.2	187.8	3.9
2020	225.7	3.5	197.0	4.9
2021	244.3	8.2	216.3	9.8
2022	262.6	7.5	233.3	7.9

Index: 2010 = 100

Multi-family houses Top 7

Year	Capital value		Residential rents		Cap rate	
	Index	y-o-y change in %	Index	y-o-y change in %	Index	y-o-y change in %
2013	126.2	9.0	117.6	5.6	93.2	-3.1
2014	138,0	9.4	125.0	6.2	90.5	-2.9
2015	153.8	11.4	132.8	6.3	86.4	-4.6
2016	172.6	12.3	142.0	6.9	82.3	-4.8
2017	197.1	14.2	150.7	6.1	76.5	-7.1
2018	217.6	10.4	158.4	5.1	72.8	-4.8
2019	226.8	4.2	163.4	3.1	72.1	-1.0
2020	234.1	3.2	166.3	1.8	71.0	-1.4
2021	252.3	7.8	170.9	2.8	67.8	-4.6
2022	270.9	7.4	180.3	5.5	66.6	-1.8

Index: 2010 = 100

Commercial property market

Office and administrative buildings

Year	Capital value		Office rents		Cap rate	
	Index	y-o-y change in %	Index	y-o-y change in %	Index	y-o-y change in %
2013	116.4	5.9	106.4	2.7	91.5	-3.0
2014	120.9	3.9	108.0	1.5	89.3	-2.3
2015	122.9	1.7	108.7	0.6	88.4	-1.1
2016	132.4	7.7	112.1	3.2	84.7	-4.2
2017	143.6	8.4	115.7	3.2	80.6	-4.9
2018	157.4	9.6	122.1	5.5	77.6	-3.7
2019	172.5	9.6	130.2	6.7	75.5	-2.7
2020	181.5	5.2	134.2	3.1	74.0	-2.1
2021	181.8	0.2	133.3	-0.7	73.3	-0.8
2022	184.8	1.7	138.2	3.7	74.8	2.0

Index: 2010 = 100

Retail properties

Year	Capital value		Retail rents		Cap rate	
	Index	y-o-y change in %	Index	y-o-y change in %	Index	y-o-y change in %
2013	101.3	2.3	102.8	1.6	101.4	-0.8
2014	105.2	3.8	103.7	0.9	98.6	-2.8
2015	108.0	2.7	104.3	0.5	96.6	-2.1
2016	110.6	2.5	105.0	0.7	94.9	-1.7
2017	113.9	2.9	106.4	1.3	93.4	-1.6
2018	115.8	1.7	106.7	0.3	92.1	-1.3
2019	115.5	-0.2	106.3	-0.3	92.1	-0.1
2020	113.6	-1.7	104.5	-1.8	92.0	-0.1
2021	110.0	-3.1	102.7	-1.7	93.3	1.5
2022	104.1	-5.4	99.6	-3.0	95.7	2.6

Index: 2010 = 100

Imprint

The member institutions of the **Association of German Pfandbrief Banks** (Verband deutscher Pfandbriefbanken, vdp) have been the market leaders in commercial real estate finance in Germany and hold sizeable market shares in residential real estate finance as well. As the representative of its member banks, the vdp performs this function vis-à-vis all executive bodies of politics on both the national and the European stage and a wider public.

The vdp's know-how is tailored towards the specific interests of the Pfandbrief issuers, namely, the Pfandbrief business and the underlying business fields property finance, public-sector lending, ship and aircraft finance. The vdp assists its member banks also in regulatory matters and represents them vis-à-vis national regulatory authorities. By means of group governance, member institutions exchange information and experiences in vdp committees, which are then summarized and developed into market standards. The vdp also assists its member banks in the efficient structuring of their specialized loan or issuance businesses.

vdpResearch GmbH, a subsidiary of the Association of German Pfandbrief Banks (vdp), works intensively on compiling, analyzing and forecasting property prices in the context of real estate finance. Its remit includes measuring and forecasting trends in rents and prices in the residential and commercial property sectors at the regional and national level.

To measure the movements of rents and prices, vdpResearch makes use of a unique transaction database that is also used to provide property-related comparative prices, comparative rents and other valuation parameters. These parameters are central to specially developed software solutions for valuing standard and individual properties and are fully compliant with regulations governing market and property valuation.

Today, the products and services of vdpResearch are a key component for many credit institutions in the evaluation and assessment of property and market price risks. The nationwide property price indices that vdpResearch prepares for the Association of German Pfandbrief Banks are geared to an interested public and offer an overview of general price trends in Germany's real estate markets.

Contacts:

Dr. Franz Eilers
Head of Real Estate Research
Tel.: +49 (0)30 206229-16
eilers@vdpresearch.de

Andreas Kunert
Indices Project Manager
Tel.: +49 (0)30 206229-17
kunert@vdpresearch.de