GREIX Insight

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Is There Any Room to Negotiate on the Price?

Heterogeneity in Seller Behavior following the Interest-Rate Reversal

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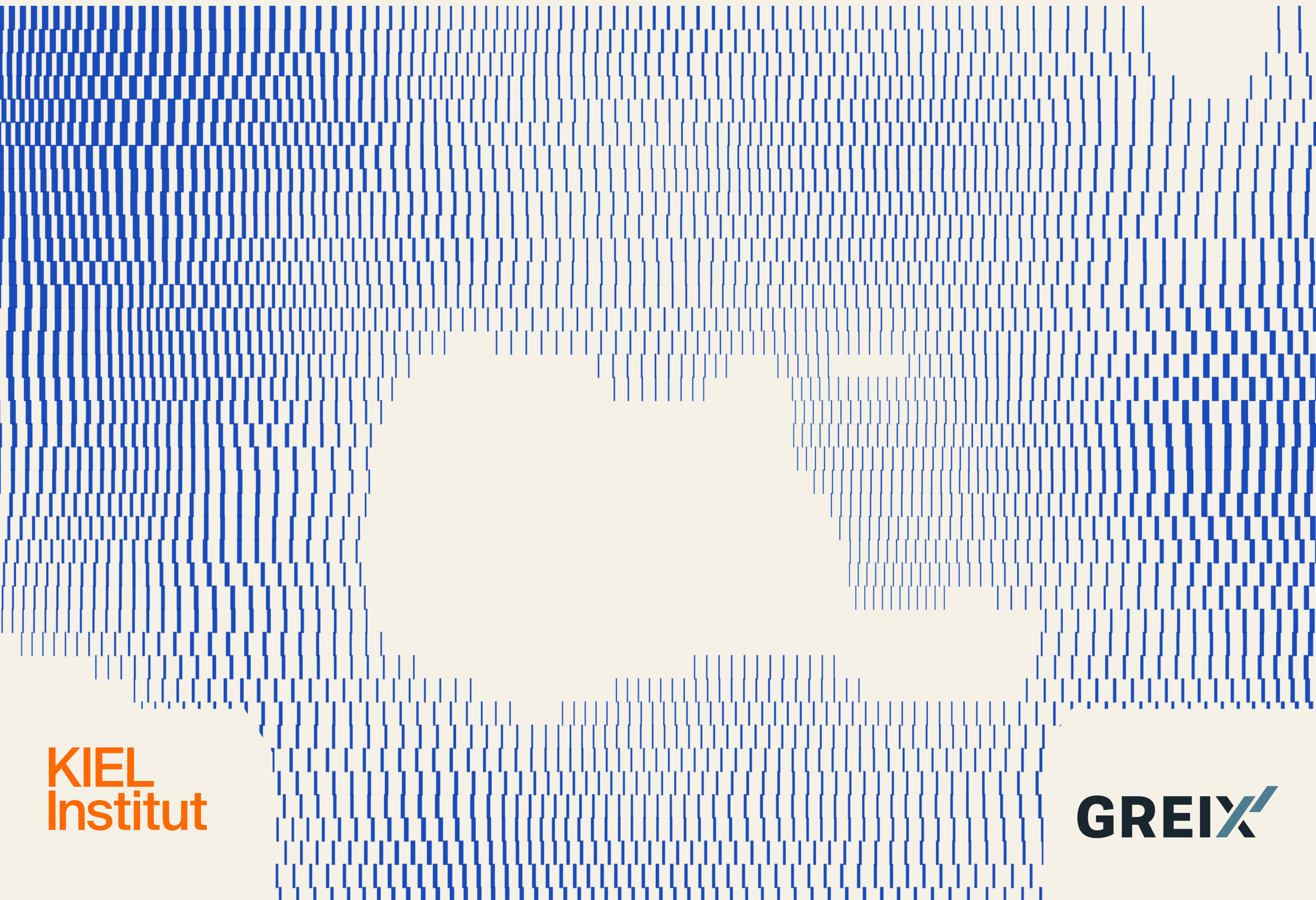

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Overview

- The rise in interest rates since early 2022 has affected the apartment market primarily through the number of sales. Transactions declined by just over 30 percent, while prices fell by only around 15 percent.
- Behind this aggregate pattern lie markedly different adjustment dynamics. In the highest-quality segment, the number of transactions fell by almost half, while prices declined by only around 9 percent. In the lowest-quality segment, the decline in transactions was considerably smaller, whereas the price decline was substantially larger.
- This opposing pattern cannot be explained by differences in the size of the demand shock alone and points to differences in the supply response. Listing data support this interpretation: Sellers of high-quality properties adjust their asking prices less frequently, without the properties remaining on the market for longer. At the same time, the data suggest that particularly many listings in this segment end without a corresponding sale.
- Price indices therefore reflect only a selective set of successfully completed transactions, particularly in the highest-quality segment. The adjustment there is less visible in prices than in market liquidity. In the event of a recovery, the number of transactions in the high-quality segment should therefore increase before prices respond more strongly.

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1 Introduction

The sharp rise in interest rates since early 2022 has fundamentally changed the German residential real estate market within a short period of time. What stands out, however, is how differently prices and quantities responded: While transactions declined by just over 30 percent, prices fell by only around 15 percent. A substantial part of the adjustment therefore occurred through foregone sales rather than lower prices.

This report examines how the adjustment to the interest rate reversal differs across quality segments. A clear pattern emerges: For high-quality properties, the number of transactions fell by almost half by early 2024, while prices declined by only around 9 percent. In the lowest-quality segment, by contrast, prices responded more strongly and the number of sales considerably less. Put simply, adjustment at the upper end of the market occurred more through quantities, while adjustment at the lower end occurred more through prices.

Differences in the size of the demand decline across quality segments alone cannot explain this pattern. As long as the supply side does not differ across segments, a stronger demand shock should lead to both a larger decline in quantities and a larger decline in prices. The fact that transactions fall particularly strongly while prices fall particularly little in the high-quality segment therefore points to differences on the supply side.

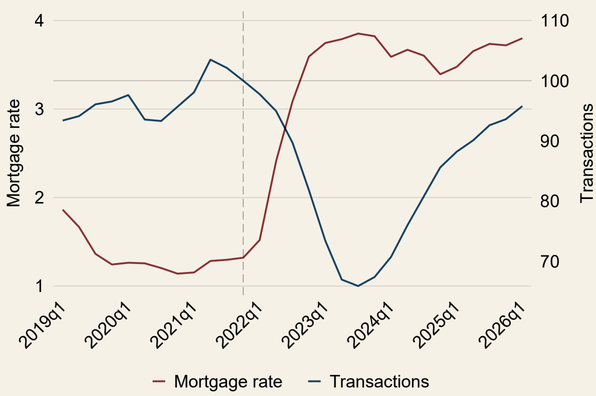
To examine the supply side more closely, we complement the transaction data with real estate listings. Sellers of high-quality properties reduce their asking prices less frequently after the interest rate reversal than sellers in other segments. At the same time, their properties do not remain listed for longer. Instead, the data suggest that particularly many listings in the highest-quality segment end without a corresponding sale. This indicates that owners are more likely to forgo a sale when their price expectations cannot be met.

This has consequences for the interpretation of real estate prices. A price index observes only those properties for which buyers and sellers actually reach an agreement. Relatively stable prices can therefore coincide with a substantial loss of market liquidity. Prices, transactions, and other liquidity indicators such as price adjustments or time on market should therefore be considered jointly. In the event of a further recovery, activity in the high-quality segment should initially become more visible in rising transaction numbers than in rising prices.

2 Price and Quantity Adjustment after the Interest Rate Reversal

Rising Interest Rates and the Decline in Transactions. The interest rate reversal shifted the German residential real estate market within a short period of time from a boom into a period of unusually low transaction activity. Figure 1 shows the mortgage rate for loans with an interest rate fixation of more than ten years together with the number of transactions over time. The transaction data cover the universe of transactions recorded by the local expert committees (*Gutachterausschüsse*) in the respective cities.[1] Between early 2022 and mid-2023, the mortgage rate rose from just under 1.5 percent to 3.9 percent, an increase of around 2.4 percentage points. Market activity responded immediately and substantially: Between the fourth quarter of 2021 and the first quarter of 2023, the number of transactions fell by 30 percent. Since 2024, the market has been recovering despite largely unchanged interest rates, but transaction activity remains below its pre-reversal level.

Figure 1: Mortgage Rates and Transactions



Note: Mortgage rates refer to loans with an interest rate fixation of more than ten years. The number of transactions is shown as an index with 2021Q4=100 and is smoothed using a rolling four-quarter average.
Source: GREIX (number of transactions), Deutsche Bundesbank (mortgage rates).

Defining the Quality Segments. Each apartment[2] is assigned to a quality segment based on a hedonic regression. For each city, we estimate a hedonic regression of the transaction price on property characteristics, location variables, and quarter fixed ef-

[1]The analysis includes the following cities and regions, which we observe throughout the entire period from 2019Q1 to 2026Q1: Bonn, Bochum, Bocholt, Cologne, Düsseldorf, Dortmund, Duisburg, Erfurt, Frankfurt, Hamm, Lübeck, Karlsruhe, Leipzig, Ludwigslust-Parchim, Munich, Mettmann, Münster, Potsdam, Rhein-Erft-Kreis, and Stuttgart. As a robustness check, we extend the sample to cities for which transaction data are not available over the entire period, including Berlin and Hamburg. Including these additional cities does not change the qualitative results.

[2]We additionally conduct the main analyses for single-family houses. The same qualitative pattern emerges, with stronger quantity adjustment and weaker price adjustment in the upper quality segment.

fects. We then predict the price of each transaction using only the property characteristics and location variables, excluding the quarter fixed effects. This procedure ensures that assignment to a quality segment does not depend on the timing of the transaction. The predicted prices are then divided into quartiles within each city.

Properties in these quality segments differ markedly in their typical characteristics. Properties in the lower-quality segments are smaller and older on average and more frequently have simpler features and an average condition. Properties in the high-quality segment, by contrast, are substantially larger, newer or in near-new condition, and more frequently have upscale or high-quality features. The median floor area, for example, increases from 48 square meters in the lowest-quality segment to 117 square meters in the highest-quality segment. While almost half of the properties in the lowest-quality segment were built between 1950 and 1977, newer properties, especially new construction, are substantially more prevalent in the high-quality segment. Energy efficiency also improves with quality: Among observations for which an energy rating is available, classes D and E dominate in the lower-quality segments, whereas B and C are most common in the highest-quality segment.[3]

Quantity Adjustment at the Top, Price Adjustment at the Bottom. Market activity declined to very different degrees across the quality segments.

Figure 2(a) shows that the number of transactions in the highest-quality segment fell by 48 percent by the end of 2023, compared with 25 percent in the lowest-quality segment. Transactions have increased across all segments since 2024, but they currently remain around 23 percent below their 2021Q4 level in the highest-quality segment and around 5 percent below that level in the lowest-quality segment.

For prices, the ranking is reversed. Figure 2(b) shows that prices in the high-quality segment fell by only 9 percent from their peak in mid-2022 to the market trough at the end of 2023. The segment with the largest decline in transactions therefore experienced the smallest price decline, around 40 percent smaller than in the rest of the market.[4]

3 The Role of Supply

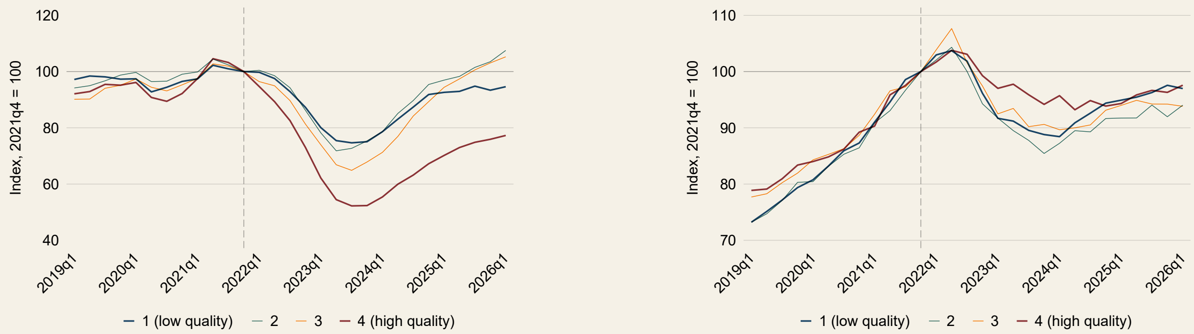
Why Differences in Demand Are Not Enough. One intuitive explanation for the decline in prices following the interest rate reversal is that higher mortgage rates affect

[3] This characterization is based on the listing data because property characteristics are recorded particularly consistently across the cities in that dataset. For characteristics available in both the listing and transaction data, however, the patterns are very similar. For categorical characteristics, the most common categories largely coincide across the two datasets; for continuous characteristics such as floor area, the ordering across quality segments is the same and the average values differ only modestly. We therefore consider the characterization of the segments based on the listing data to be transferable to the transaction data.

[4] The result is not driven solely by newly built or planned properties in the high-quality segment. When we exclude these observations separately from the analysis, the differences across quality segments become somewhat smaller, but the qualitative pattern remains unchanged: Transaction activity continues to respond more strongly and prices more weakly in the high-quality segment than in the lower-quality segments.

Figure 2: Transactions and Prices by Quality Segment

(a) Number of Transactions   (b) Transaction Prices



Note: Index, 2021Q4=100. The segments correspond to quartiles of the price predicted from property characteristics, with the first quartile representing the lowest quality and the fourth quartile the highest quality. Panel (b) shows hedonic price indices estimated at the city level and aggregated across cities using transaction counts as weights.
Source: GREIX.

lower-income households more strongly than higher-income households. Demand for less expensive apartments, which tend to be of lower quality, might therefore decline more strongly than demand for more expensive, typically higher-quality properties that are more often purchased by higher-income households. This observation, however, is not sufficient to explain the pattern. A shift in demand moves prices and quantities along the supply curve and therefore in the same direction. With the same supply elasticity and otherwise comparable market conditions, a larger decline in demand should generate both a larger decline in quantities and a larger decline in prices. Figure 3 illustrates this using a weak and a strong demand shock. With the same supply elasticity, the two shocks generate responses of different magnitudes, but the relative relationship between the quantity and price responses remains unchanged. The combination of a larger decline in completed transactions and a smaller decline in prices in the high-quality segment therefore shows that differences in demand alone cannot account for the observed pattern.

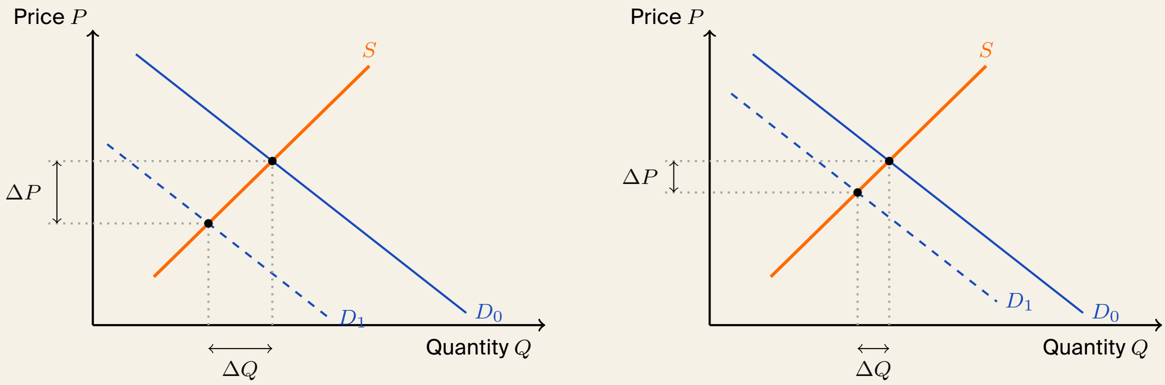
The larger decline in the number of transactions in the highest-quality segment relative to the lowest-quality segment, combined with the smaller decline in prices, suggests that the supply response differs across segments. Figure 4 illustrates this logic using two price–quantity diagrams with the same decline in demand but different supply elasticities. Both panels show the same shift in the demand curve from D_0 to D_1 as a result of higher mortgage rates. Figure 4(a) depicts a supply curve S with a lower elasticity than in Figure 4(b). This difference in supply elasticity can explain the observed combination of a larger decline in transactions and a smaller decline in prices in the highest-quality segment. When supply is relatively inelastic, the decline in demand is reflected more strongly in prices and less strongly in quantities. With more elastic supply, by contrast, the quantity response is larger and the price response smaller.

More elastic supply may indicate that sales decisions in the highest-quality segment are more discretionary for owners. Sellers of high-quality properties may be better able to

Figure 3: Demand Shocks of Different Magnitudes with the Same Supply Elasticity

(a) Large Demand Shock

(b) Small Demand Shock

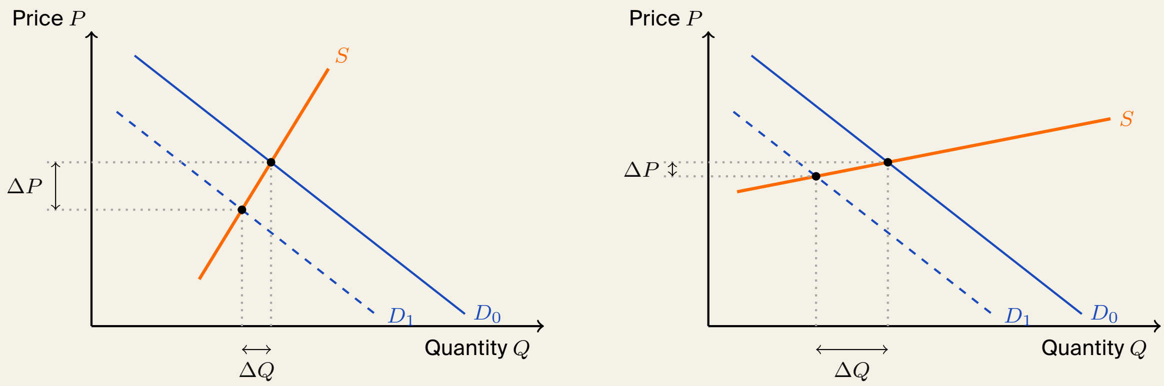


Note: A larger shock causes both prices and quantities to decline more strongly, but the relationship between the two responses remains unchanged. Segments may therefore differ in the magnitude of the downturn, but not in how the adjustment is divided between prices and quantities.

Figure 4: The Same Demand Shock with Different Supply Elasticities

(a) Inelastic Supply (Lowest-Quality Segment)

(b) Elastic Supply (Highest-Quality Segment)



Note: With inelastic supply, the price response dominates; with elastic supply, the quantity response dominates. Both panels assume the same shift in demand from D_0 to D_1 and the same initial equilibrium.

postpone a sale and wait for market conditions to improve, whereas sales in the lower-quality segment may be less easily postponed. The larger decline in transactions in the highest-quality segment would then not merely reflect the decline in demand, but also a stronger response by sellers, who are more likely to forgo a sale rather than accept larger price reductions.[5]

[5] Alternatively, the pattern could also be explained by a larger leftward shift of the supply curve in the highest-quality segment while supply elasticities are the same across segments—that is, fewer transactions combined with a smaller price decline. Such a shift could arise, for example, if sellers intend to purchase another property themselves and are reluctant to give up favorable existing financing terms, and if this mechanism is stronger for high-quality properties. The available data do not allow us to distinguish between differences in supply elasticity and differences in the magnitude of the supply shift. For the central conclusion of the report, however, this distinction is not decisive: In both cases, the explanation for the

What the Listing Data Show. To examine whether the supply of high-quality properties indeed responds more strongly to the interest rate reversal, we additionally analyze listing data from the Value Marktdatenbank.[6] Figure 5(a) first shows how many sellers adjust their asking price while the property is listed on the platform. Before the interest rate reversal, prices were adjusted for around 14 percent of listings in all segments. By the end of 2023, this share had increased to between 27 and 29 percent in the lower three quality segments, but to only 22 percent in the highest-quality segment. The increase in sellers' willingness to adjust their asking price during the marketing process was therefore around one-third smaller in the high-quality segment than in the rest of the market.

The average price revision in Figure 5(b) shows the same pattern as a percentage of the initial asking price. Average discounts increased from 0.6 to 2.7 percent in the lowest-quality segment, but only from 0.4 to 1.9 percent in the highest-quality segment. This difference arises almost entirely because sellers in the high-quality segment are less likely to adjust their price at all. Conditional on changing the price, however, they reduce it by a similar amount as sellers in the other quality segments.[7]

Time on market adds another dimension to the picture. As Figure 5(c) shows, it increased substantially in all segments and reached its peak in the third quarter of 2024. Yet the increase was weakest in the high-quality segment, at 43 percent, compared with 76 percent in the lowest-quality segment. Thus, precisely where the number of transactions declined most strongly, listings remained visible on the market for the shortest period relative to their initial level. If demand declines in a segment while sellers hold on to their asking prices, one would expect listings to remain on the market for longer, not shorter.

This apparent contradiction can be resolved if listings in the high-quality segment are more likely to end without resulting in a sale. Figure 5(d) relates transactions to listings and supports precisely this interpretation. The transaction-to-listing ratio fell sharply in all segments relative to the end of 2021, but the decline was largest in the highest-quality segment at 60 percent, compared with 47 percent in the lowest-quality segment. The higher the quality, the less frequently a listing is associated with a sale. In levels, the ratio in the high-quality segment fell from 1.1 to 0.44, below the threshold of one at which more listings end than sales take place. At the trough, there were just over two ended listings for every sale in the high-quality segment, compared with around 1.3 in the lowest-quality segment.[8]

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observed pattern lies on the supply side.

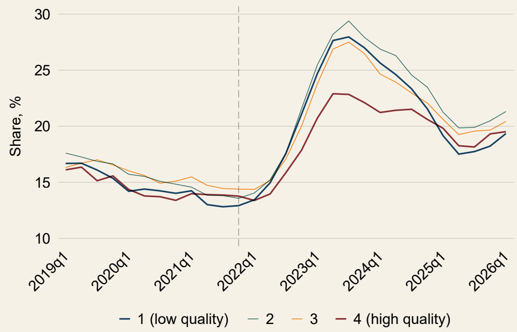
[6] As a robustness check, we also calculate the liquidity indicators presented below using listing data for all 25 cities currently covered by GREIX. The qualitative pattern across quality segments remains unchanged.

[7] In economics, this distinction is commonly described in terms of the extensive and intensive margins. The extensive margin captures whether an adjustment occurs at all, whereas the intensive margin describes the magnitude of the adjustment conditional on it occurring. The difference observed here therefore arises primarily along the extensive margin.

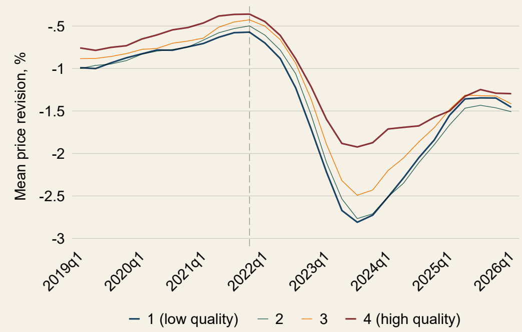
[8] Both series are quarterly flows referring to the same point in time: Listings are counted by their end date and transactions by their contract date, and only closed listings are included. Because the transaction data cover all sales while the listing data cover only advertised properties, the ratio constitutes an upper bound on the share of listings that result in a sale. During the boom, the ratio exceeds one, reflecting the incomplete coverage of real estate portals. Multiple listings of the same property reduce the ratio further.

Figure 5: Price Adjustments, Time on Market, and Transaction-to-Listing Ratio by Quality Segment

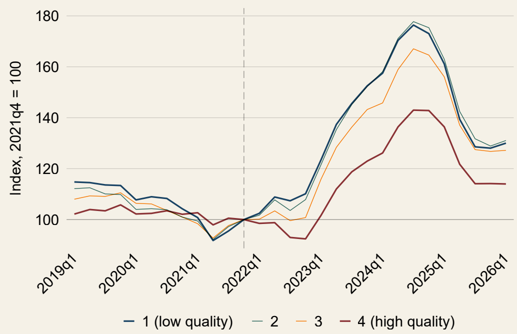
(a) Listings with a Price Change



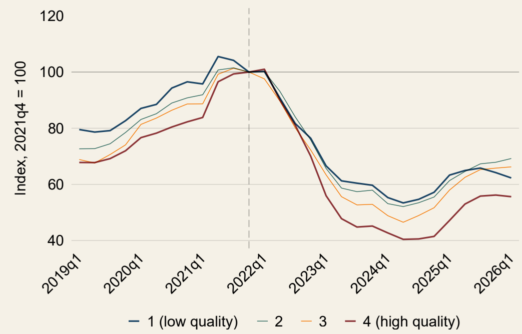
(b) Average Price Revision



(c) Time on Market



(d) Transactions per Listing



Note: The price revision measures the average percentage difference between the final and initial asking price of a listing. Panel (d) applies identical segment boundaries to transactions and listings.
Source: Value Marktdatenbank.

The pieces therefore fit together. Sellers in the high-quality segment apparently forgo a sale more frequently rather than accept larger price reductions. The remaining transactions consequently represent a selective set of successful sales. The measured price decline of 9 percent therefore captures the deterioration in market conditions in the high-quality segment only incompletely.[9]

4 Implications

Differences in seller behavior across market segments have direct implications for the interpretation of price indices. A price index measures only transactions that actually take place. As observed following the interest rate reversal, relatively stable prices can coincide with a substantial loss of market liquidity when owners in the highest-quality

The interpretation only requires that portal coverage within each segment remains reasonably stable over time.

[9] In addition, we examine the evolution of the indicators within individual cities and calculate city-specific correlations across quality segments. The results show that the patterns presented here are not driven by a small number of individual cities but are broadly present across the local markets in the sample.

segment are more likely to forgo a sale. Precisely where the number of transactions declines most strongly, the price index therefore reflects only a selective set of successful sales. A stable price series does not necessarily imply that a property can actually be sold at the desired price within a given period of time. While adjustment in the lowest-quality segment is more visible in prices and price discounts, adjustment in the high-quality segment is more visible in transactions that fail to materialize. Prices and liquidity indicators such as transaction counts, price adjustments, and time on market should therefore be considered jointly.

This gives rise to a hypothesis for a renewed increase in demand that can be tested as the market evolves. In the high-quality segment, the number of transactions should initially increase while prices respond comparatively little. This would be particularly likely if previously withheld properties return to the market as conditions improve. In the lowest-quality segment, the same demand impulse should instead be reflected more strongly in prices than in quantities. At the aggregate level, this could result in a quantity-driven recovery in which transaction activity increases earlier and more strongly than the price index. From the perspective of individual market participants, this could create the impression that high-quality properties are currently selling relatively well. Such a perception is consistent with our findings: Properties currently listed in the high-quality segment may represent a selective group of sellers with a comparatively high willingness to reduce their asking price, while other owners appear more likely to forgo a sale if no agreement can be reached. A relatively short time on market therefore does not necessarily imply that the segment as a whole is more liquid. Whether properties withheld since the interest rate reversal will actually return to the market during a further recovery remains an open question. Owners may instead abandon a postponed sale permanently, rent out the property, or transfer it within the family.

Beyond the outlook, the findings also raise practical questions. First, they matter for demand-side policies. Subsidies for (first-time) buyers, which are typically intended to target the more affordable segment, could be capitalized more strongly into prices when the supply response in that segment is weaker and may therefore benefit sellers rather than buyers.[10] Second, the findings matter for collateral valuation. Using a price index to update property or collateral values carries over the selection inherent in the index and may therefore understate the risk that the property cannot be sold at the expected price when needed. This is particularly relevant in the high-quality, typically most expensive segment when valuations are based exclusively on the remaining transactions. In that segment, the key risk may lie less in the observed price itself than in whether the property can be sold within a given time horizon.

[10] This would be the case if supply elasticities are symmetric for positive and negative demand shocks.