Price Appreciation

Measuring real price growth with paired home sales

Indiana Association of Realtors®

Key Takeaways

This measure of sale-to-sale annualized price appreciation, rather than year-over-year growth in median sale price, more accurately reflects price growth without conflating other dynamics like the mix of homes for sale or buyers on the market.

Price growth was 6.7% in February, down from 6.7% a month ago and 7.4% a year ago. Lower priced homes are appreciating faster (8.7% per year) and their price appreciation has been more resilient against declining price appreciation in the overall market since 2022.

Introduction

When we analyze housing prices, we typically look at the median sale price. This tells us, out of all the homes that sold in a given place and timeframe, what is the middle value. It does not tell us how the price of individual homes are changing. The median sale price can be influenced by factors outside of price appreciation, like the mix of houses on the market or the mix of buyers participating in the market.

To directly measure price appreciation, we need to match home sales across time. When a home sells, if we can identify how much the seller paid, we can calculate an annualized appreciation rate.

This analysis tracks repeat sales to measure price appreciation and segments properties by quartile for a clearer view of market trends. We exclude condos and townhomes due to inconsistent address matching and use exact address, geolocation, and fuzzy address matching to link sales. Price appreciation is annualized based on purchase and sale dates, with filters applied to remove short-term flips, extreme appreciation rates, and rehab properties. Each month represents a three-month rolling average. A detailed breakdown of data sources, filtering methods, and calculations is provided in the appendix.

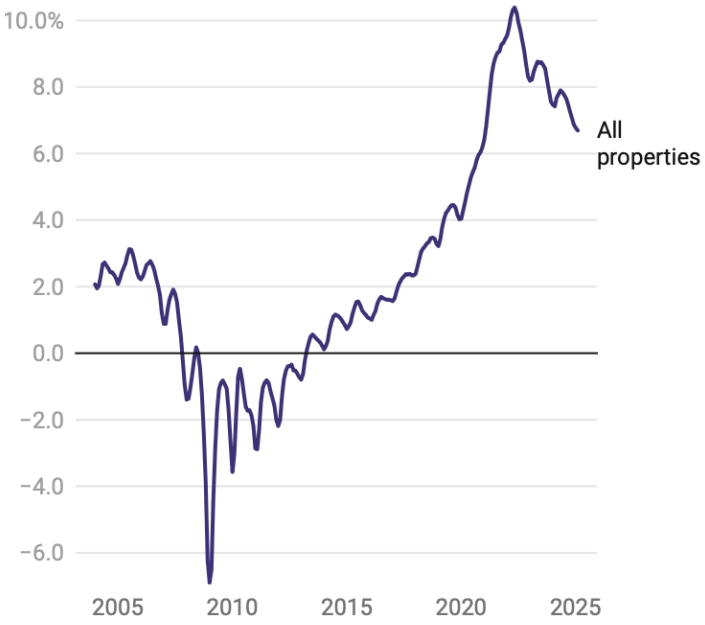
Overall Findings

Price appreciation was 6.7% in February 2025. Sellers in the last three months received 6.7% price growth per year. That is down from 6.8% in January and 7.4% one year ago.

Price appreciation is down from pandemic but higher than pre-pandemic levels. Price growth peaked at 10.4% per year in May of 2022. While price growth has fallen 3.7 percentage points from that peak, it is still higher than before the pandemic. Five years ago, in February 2020, prices were growing at 4.3% annually.

Price growth was accelerating before the pandemic. But the pandemic caused price growth to accelerate even faster. Price growth increased by an average of 0.7 percentage points each year from February 2010 to February 2020, climbing from -2.6% to 4.5% in 10 years. Price growth reached 9.6% in February 2022, accelerating by 3.5 times faster than before the pandemic.

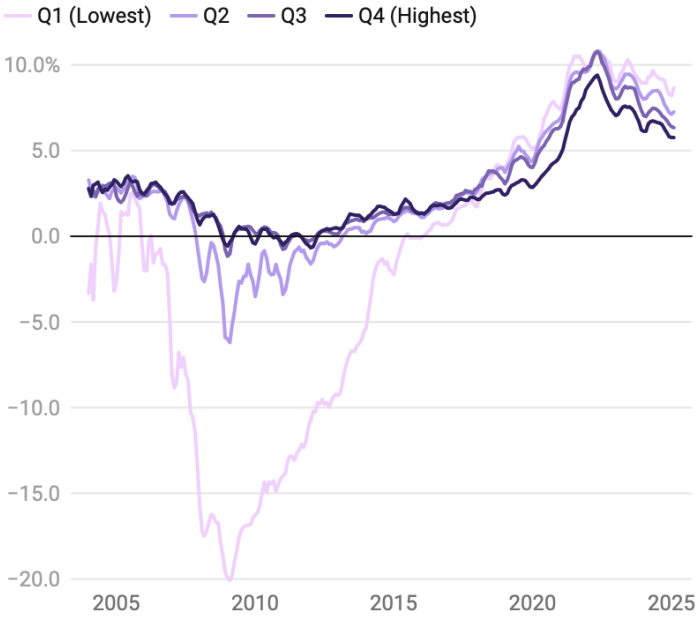
Median annualized price appreciation for homes sold in last three months



Current price growth is where we expected to be if the pandemic had never occurred. If acceleration in price growth had stayed steady through the pandemic, we would now have 6.9% annual price appreciation. We currently have 6.7%. Though buyers have more leverage than they did three years ago, sellers still enjoy strong price appreciation.

Appreciation by Price Segment

Annualized price appreciation for homes sold in last three months



Price quartiles are recalculated each year, so they reflect price segments relative to the current market at the time of each data point.

Lower-priced homes appreciate faster than high-priced homes. In February 2025, the bottom quartile of homes by price are appreciating at 8.7% while homes in the top quartile are growing by only 5.8% annually. This has not always been the case. Through the Great Recession, homes below the median (the bottom two quartiles) were selling at a loss. Appreciation turn positive for the second quartile in 2013 and for the bottom quartile in 2016.

Median Price Appreciation by Price Quartile

Homes priced above the yearly median sale price (quartiles three and four) have long had nearly equal price growth. This changed in 2017. Price growth accelerated for the bottom three quartiles of the market, rising by one point per year. In the high end of the market, price growth rose by only 0.35 points per year.

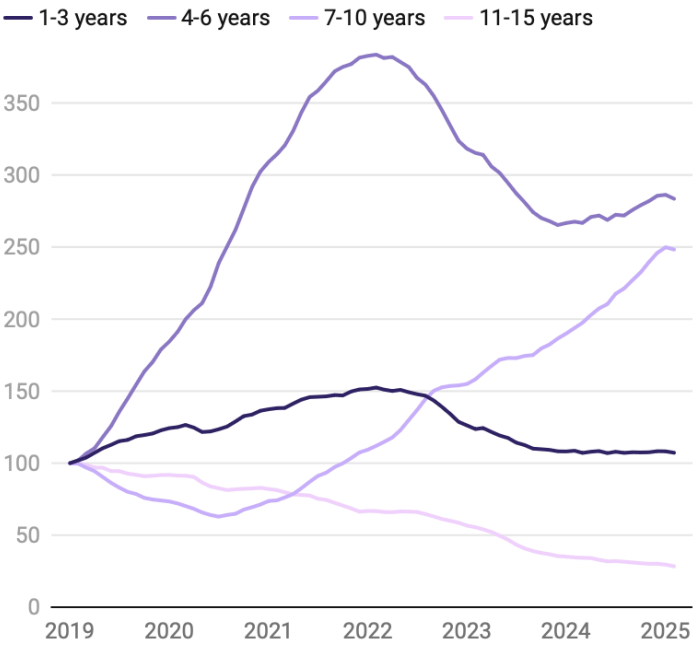
Since 2022, price growth has diverged even more. A new pattern has emerged, where the more expensive a home is, the slower its price grows. In May of 2022, price growth diverged into two groups, the high end (quartile four) and everyone else. By February 2025, there are four very distinct growth rates among the four price quartiles. This came about as price growth slowed significantly for the most expensive homes, but stayed elevated for low-cost homes. At 8.7% annual growth, the lowest quartile is only 2.1 points off its peak price appreciation. Meanwhile, the highest priced homes fell from 9.4% growth to 5.8%, a drop of 3.6 points.

Tenure

Linked sales also let us analyze how long people remain in their homes before moving. Nationally, the median homeowner moves every 12-13 years. That means that half of homeowners stay in their homes longer. Our most complete data only begins around 2004, which means if someone moved before then, we do not capture that data. We could not link that sale to a later sale. Because of this, we cannot calculate an average statistic for how long people live in their homes before moving.

However, we do have enough data to analyze households who moved after 15 years or less. (Fifteen years after 2004 brings us to 2019, where can begin a valid analysis of tenure.)

12-month rolling total sales by years between sales, percent of sales



Includes single-family homes only. Excludes homes held for less than one year, potential rehabs (low-cost and selling for at least 30% more per year), and homes with price appreciation in the top or bottom 2% of the distribution.

Indexed Sales by Tenure

We look at four categories of tenure based on the time between sales. We count sales in category on a 12-month rolling basis and index this to 2019 so we can see how each category has changed relative to that starting point.

From 2019 to 2020, shorter-term moves were already increasing—sales after 4-6 years were up 84% by the start of 2020 and 1-3 years were up 24%. This accelerated during the pandemic. By January 2022, moves after 4-6 years had jumped 283% from their 2019 level. There are two reasons for this—total sales increased overall, which drove sales after 4-6 years up, and shorter term sales grew faster than long term sales. In fact, sales after 11-15 years fell 33% by January 2022.

Beginning in mid-2022, sales started falling for all tenure categories save one: 7-10 years. There are now more sales after 7-10 years than there were in 2022. This does not appear to driven by people staying in their home longer—sales of other tenure categories are steady over the past 18 months. In other words, sales are not just moving from one category to another.

If a seller in 2025 has owned their home for 7-10 years, they purchased it in 2015-2018, meaning they can capitalize on years of very strong price growth. Our analysis suggests these sellers realized an average appreciation of 76% over their initial purchase price; also presuming 7-10 years of consistent mortgage repayment at a rate below 4.5%, they have built equity rivaling their outstanding loan value. For these sellers, current interest rates may not be a financial disincentive to enter the market as they are to someone who purchased their home during or after the pandemic.

Method

We developed a repeat sales methodology, tracking price changes for properties that have sold multiple times. We exclude condos and townhomes—matching these sales using address or geolocation was not very accurate. We matched sales on 1) exact address matches, 2) geolocation matches, and 3) fuzzy address matches. Only sales with matching house numbers and zip codes are included—while fuzzy matching can identify more matches despite spelling variations, we house number and ZIP Code cannot be approximated.

Appreciation is calculated on a sale-to-sale basis and then annualized based on the purchase and sale dates. Sales with holding periods under one year are excluded to remove short-term flips and speculative transactions. Extreme appreciation rates are filtered using percentile-based outlier removal within each year. Additionally, properties flagged as potential rehabs—identified by unusually high appreciation rates and low initial purchase prices—are removed to avoid distorting long-term trends.

TABLE 1. FILTERING RULES

Filter	Rules Applied	Records Filtered
Starting universe	Single-family sales with likely match to a previous sale	Started with 620,055 records
Same-day sales	Remove, as they are likely not arms length or not paired sales	243,817
Property Matching	Only keep fuzzy matches where address number & zip match	22,219
Outlier Removal	Filtered homes with annualized appreciation in the top or bottom 2% for the year it sold	16.300
Holding Period	Exclude sales with a holding period < 1 year	36,575
Rehab Properties	Exclude extreme flips based on price (below median) & appreciation (> 30% annualized)	16,789
Final dataset		337,576

Property Matching

This model identifies repeat sales by matching properties using **both exact and fuzzy matching techniques**. However, to prevent mismatches, **only fuzzy matches where the address number and zip code align are included**. This ensures that properties with similar street names but different locations are not incorrectly paired.

Holding Period Filter

To remove speculative transactions and short-term flips, **sales with a holding period of less than one year are excluded**. This prevents artificially high appreciation rates from distorting long-term trends, ensuring that the model primarily captures sustained market-driven price changes.

Outlier Filtering

Rather than applying a standard z-score threshold across all years, this model **filters extreme appreciation values (top or bottom 2%) within each year using percentile-based trimming**. This approach adjusts for shifting market conditions, preventing extreme values in high-growth or low-growth years from disproportionately influencing the results. Additionally,

properties identified as potential rehabs—characterized by unusually low initial sale prices and extreme appreciation—are removed to avoid distortions caused by major renovations.

Quartile Breakout

To better segment market behavior, **home price quartiles are recalculated annually** rather than using a fixed historical distribution. This allows appreciation trends to be evaluated in the context of each year's price environment, ensuring quartile groupings remain relevant as home values shift over time.

Median vs. Average Appreciation

The model provides two views of appreciation: **an average and a median appreciation rate**, each smoothed using a **three-month rolling average** to reduce volatility. The median is less influenced by extreme values, while the weighted average provides insight into broader market trends. By analyzing both, this model balances **outlier resistance with sensitivity to overall market shifts**, offering a transparent and data-driven measurement of home price appreciation.

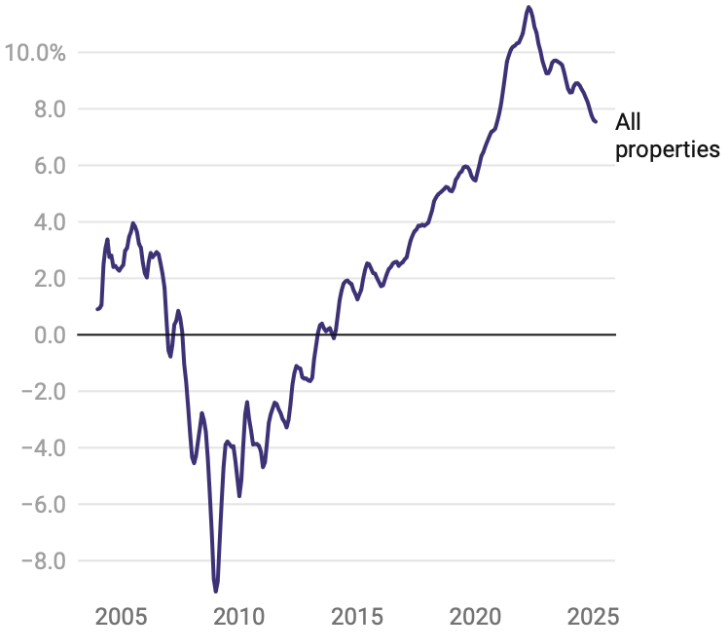
How does this differ from an index like the Case-Shiller Index?

Unlike the **Case-Shiller Index**, which uses a weighted repeat-sales method with an econometric model to smooth price changes and reduce volatility, this analysis directly tracks appreciation on a **sale-to-sale basis** without additional adjustments. We focus on **individual transactions**, applying strict filters to exclude speculative flips, extreme outliers, and non-matching sales, ensuring a cleaner dataset. This approach provides a **more transparent, transaction-level view** of appreciation trends, whereas the Case-Shiller Index aims to model broader market movements with adjustments for seasonality, interest-rate effects, and price-effects.

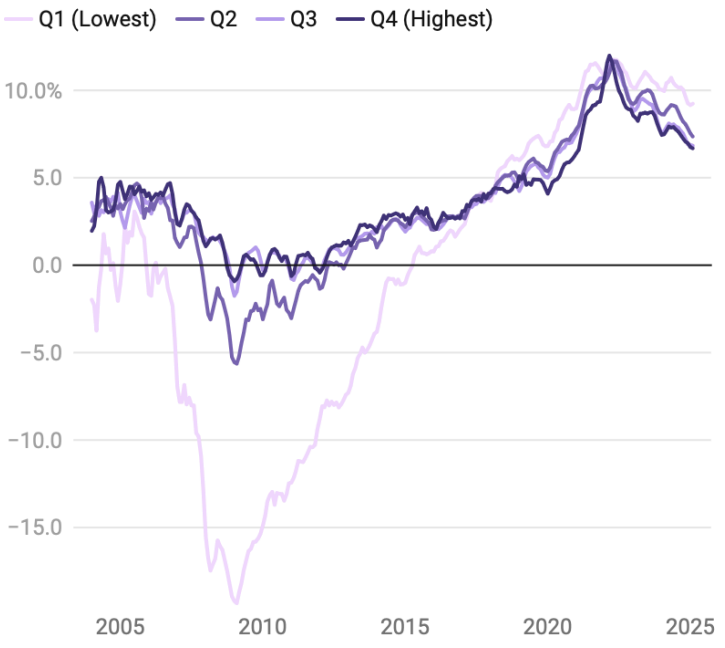
Data Sources

Data is from MLS records via Indiana Association of REALTORS® Data Warehouse. The earliest records begin in 1997.

Mean annualized price appreciation for homes sold in last three months



Mean annualized price appreciation for homes sold in last three months



Price quartiles are recalculated each year, so they reflect price segments relative to the current market at the time of each data point.