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HOUSING POLICY, INFLATION, AND MONETARY POLICY: AN UNORTHODOX VIEW

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ABSTRACT

Rents surged during the post-pandemic period. Given the substantial weight of rent in inflation measures, this surge became a focus for monetary policy. In this paper, we consider whether that focus was appropriate. We argue that, under certain conditions, monetary policy may be more optimal when it places less weight on shelter inflation than its share in consumer expenditure. This conclusion follows from the interplay of stickiness in rents, relatively inelastic housing supply, and search costs as a mechanism for rationing excess demand. We explain why shelter inflation in the U.S. may overstate the importance of rents, at the expense of other factors such as house prices and mortgage costs that affect the cost of owning but do not directly affect the measurement of shelter inflation. We clarify when monetary policy might "look through" structural reforms to boost housing supply. Furthermore, we assess the relationship between monetary policy and housing costs. On one hand, lower interest rates reduce builders' financing costs. On the other hand, more accommodative monetary policy increases demand for housing (along with other goods and services), which in turn puts upward pressure on the price of housing. We find that, on net, more accommodative monetary policy increases the cost of housing. We discuss these arguments in the specific contexts of the 2000s housing boom and bust and the post-pandemic surge.

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The views here represent those of the authors and do not represent the Federal Reserve Bank of Minneapolis or the Federal Reserve System.

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1. Introduction

Since the early 1980s, the measurement of inflation and conduct of monetary policy in the United States have reflected three core tenets:

1. The price index targeted by monetary policymakers puts substantial weight on changes in the cost of rent.
2. House prices and mortgage interest rates do not directly affect the consumer price index that summarizes the inflation rate faced by households.
3. Policy tools to expand housing supply mostly do not affect the conduct of monetary policy.

We reexamine the wisdom of all three of these features.

Section II sets the stage by reviewing the measurement of consumer inflation in the United States. The Consumer Price Index (CPI) does not directly include any cost of purchasing a house or acquiring a mortgage. Rather, it includes "owners' equivalent rent," (OER) which reweights the components underlying the series "rent of tenant-occupied nonfarm housing" for rental-occupied housing so that the composition of units more closely resembles owner-occupied housing instead. The Federal Reserve's preferred measure of inflation, the price index for personal consumption expenditure (PCE), contains the same treatment. The combined weight associated with changes in rent is about 1/3 in the CPI and 1/6 in the PCE. The Federal Reserve's price stability mandate, as implemented through an inflation target of 2% per year, thus requires paying careful attention and responding to changes in the cost of renting shelter.

The substantial weight of rent and owner's equivalent rent in CPI and PCE were particularly salient for policymakers in 2023 and 2024 as inflation in excess of target was mostly accounted for by shelter inflation. Policymakers were confronted with the question of how restrictive policy should remain to restrain shelter inflation when non-housing inflation had normalized.

In Section III, we review recent research by Bianchi, Mehrotra, and McKay (2025) arguing that optimal monetary policy should ignore shelter inflation due to the interplay of stickiness in rents, relatively inelastic housing supply, and search costs as the primary way demand imbalances are rationed in housing markets. We discuss evidence for both stickiness in rents and inelastic supply, meaning that shifts in demand for housing can trigger a substantial imbalance between demand and supply.

However, when this demand imbalance is absorbed via more intensive search effort from households and congestion in housing markets, the result mimics the efficient outcome—a sharp increase in the effective price of housing. In this case, optimal monetary policy

has little role left to play and can instead remain focused on stabilizing non-housing inflation and avoiding an inefficient output gap in the non-housing side of the economy. This prescription for optimal policy differs from more conventional treatments of inflation driven by a particular industry or sector, and it reflects the special role in housing of search frictions in rationing excess demand and the limited scope for large immediate increases in supply. Section III walks through the logic of how monetary policy should respond to shelter driven inflation given the interplay of price rigidity, inelastic supply, and search frictions.[1]

The second core tenet is that mortgage rates and house prices do not directly affect consumer inflation. Section IV discusses difficulties with this approach. The theoretical rationale for using owners' equivalent rent in place of direct measurement of the cost of owning (such as the user cost) is that, absent transaction costs, a person wanting to consume shelter can either pay rent or own. If owning and renting the same property provided the same service flow, then measuring the cost of renting would be sufficient.

The problem with this method is that the time series of rent and direct measurement of costs of owning look very different. An example illustrates why. In the monetary policy tightening cycle from 2022-2024, mortgage rates more than doubled from below 3% to close to 7%, driving up the required monthly mortgage payment for new buyers. As a result, the number of first-time home buyers in 2023 was 20% below the level in 2019 and 36% below the level in 2021. Yet, the price index for shelter did not directly reflect any change from higher mortgage rates.

How should a price index for consumers account for mortgage and other direct costs of owning and how would this affect the conduct of monetary policy? Ongoing work by Chodorow-Reich et al. (2026) argues that the pecuniary costs of a durable asset such as shelter, whether owned or rented and inclusive of mortgage costs, should be capitalized and smoothed over time in a cost-of-living index. In this case, changes in mortgage rates directly affect consumer inflation. This feature creates a potentially awkward challenge for monetary policy, since raising interest rates would directly increase inflation.

As with rent changes, however, the Federal Reserve need not react to changes in the inflation rate due to mortgage costs. Indeed, the case for excluding such costs is straightforward. While higher mortgage costs increase the cost of living, they also exhibit the classic features of a cost-push shock. The Federal Reserve has an established history of "looking through" such cost-push shocks; in fact, relative to energy price changes or

[1] It is important to note that our treatment and the literature on optimal monetary policy do not include intrinsic costs of inflation (i.e., direct disutility from increases in the price level). Households dislike inflation because of misallocation of resources, unemployment or idleness, or inefficient levels of search. Thus, for example, these models are generally silent on the appropriate level of the inflation target.

tariffs, residential mortgage rates likely have even smaller spillovers to other sectors through the supply chain, limiting concerns of their effect on broader inflation expectations. Thus, the Fed could target an inflation rate without mortgage costs, just as it currently does.

Section V examines housing supply in more detail, with particular emphasis on current and future issues. Economists and policy makers across the political spectrum agree the U.S. currently has a shortage of housing. This conclusion has motivated a raft of supply-side policy proposals, from reducing zoning restrictions to making cheaper financing available to builders. These changes should reduce the price of housing as well as housing inflation by reducing the marginal cost of producing additional housing units. They may also flatten the housing supply curve (how much the marginal cost varies with the amount produced). Such a flattening would matter for monetary policy: If price stickiness means that builders do not get the right signal and the result is much more or less housing than would otherwise be built, monetary policy must pay closer attention to shelter inflation.

Some commentators have even linked cheaper housing to looser monetary policy via the direct effect of lower interest rates on the cost of capital for homebuilders. This link echoes an extensive literature studying a cost-push channel of monetary policy. In the extreme version, the expansion of supply due to a lower cost of capital outweighs the higher demand for housing, resulting in lower house prices. However, we find that growth in house prices, rents, and costs of residential investment all fell after the 2022 interest rate increase, more consistent with the conventional view that higher interest rates act on rents and house prices primarily by dampening demand.

Section VI discusses other links between housing markets and monetary policy, using the 2000s housing boom and bust as a case study. That episode witnessed a rise in residential construction employment in the boom and a fall in the bust that led to the Great Recession. Yet, the direct contribution from construction employment and investment was far too small to account for the aggregate macroeconomic dynamics. Much more important were the indirect consequences of the housing boom and bust, including fluctuations in household consumption tied to housing wealth and the exposure of systemically important financial institutions to losses on securities tied to the residential sector. These vulnerabilities give rise to an alternative and important reason for policy makers to pay close attention to housing costs.

2. Measurement of shelter inflation: Current practice

This section sets the stage by explaining the key concepts in the measurement of shelter inflation.

2.1. Shelter inflation in the United States

In this paper, shelter inflation refers to the change in the cost of occupying a home.[2] Occupancy may occur either by renting or owning. The Bureau of Labor Statistics (BLS) measures changes in the cost of renting using the CPI Housing Survey, which is a rotating panel survey of rental properties that collects rent information from sampled units every six months.[3] Reported rents are adjusted for certain quality changes (e.g., a new bathroom) and unit aging. Vacant units receive an imputed rent equal to the last observed rent multiplied by average gross inflation of newly occupied units. Monthly inflation of rent of primary residences equals the sixth root of the six-month change in total rent or imputed rent of the sampled units. Therefore, rent inflation reflects both continued and new leases, albeit with a short lag due to the six-month sampling interval.

Measuring the cost of occupying an owned home involves additional complications. The BLS uses a concept referred to as owners' equivalent rent (the Bureau of Economic Analysis (BEA) refers to this concept as imputed-rental of owner-occupied housing), which aims to assign to each owner-occupied property the value that the property would command if rented on the open market.[4] The conceptual rationale for owners' equivalent rent will be discussed and critiqued in Section IV. The practical application involves reweighting each unit in the CPI Housing Survey to make the sample reflect the stock of owned rather than rented housing. Monthly owners' equivalent rent inflation is the sixth root of the six-month change in the reweighted rents.[5] Therefore, owners' equivalent rent inflation is based on simply reweighting the rental properties used to compute inflation in tenants' rent.

Figure 1 shows annual inflation in rent, owners' equivalent rent, and non-shelter CPI. If rent tracked non-shelter CPI, whether the Federal Reserve paid attention to rent or not would not matter. In practice, the series differ substantially at both low and high frequencies. Shelter inflation has generally exceeded non-shelter inflation, but with large differences at important points of the business cycle.

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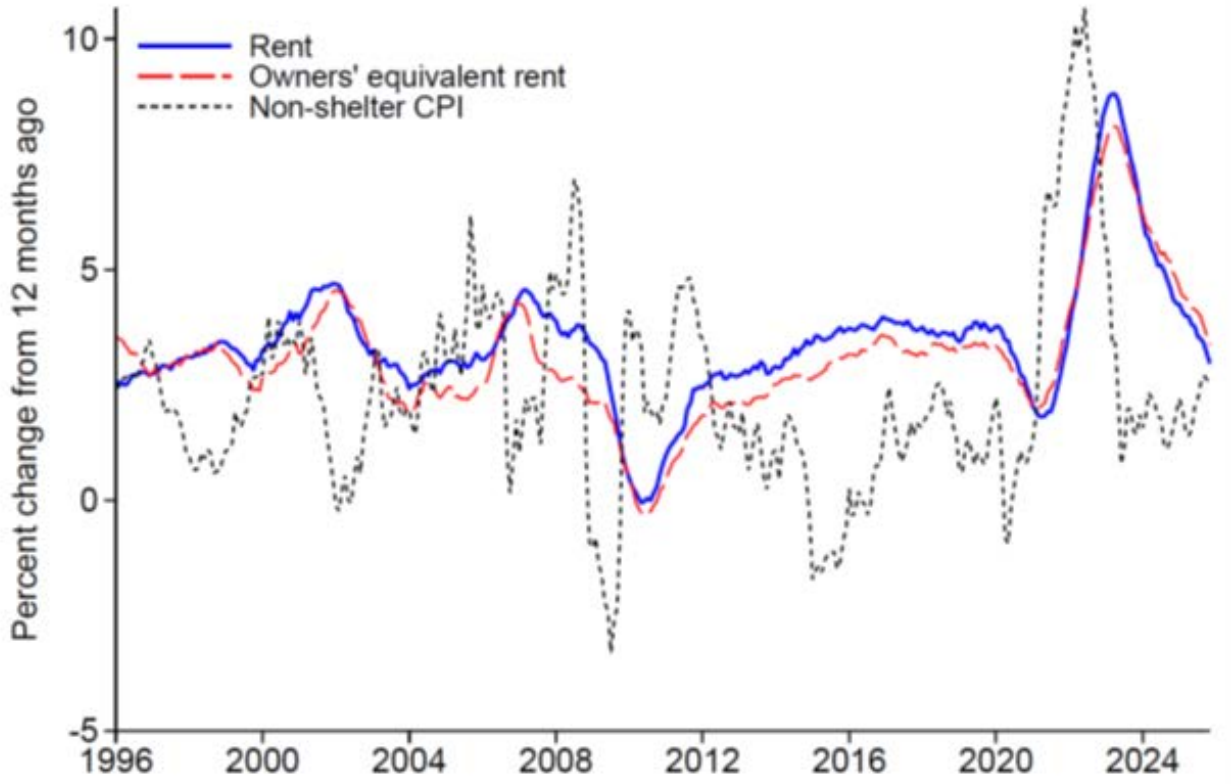
[2] The CPI defines the category "Shelter Inflation" to include rent of primary residence, lodging away from home, owners' equivalent rent of primary and secondary residences, and tenants' and household insurance. The PCE defines the category "Housing" to include rental value of tenant-occupied housing, imputed-rental of owner-occupied housing, and group housing.

[3] See https://www.bls.gov/cpi/factsheets/owners-equivalent-rent-and-rent.htm for a description of current practice and Crone et al. 2010 for a history of the measurement of rent of primary residence.

[4] See https://www.bls.gov/cpi/factsheets/owners-equivalent-rent-and-rent.htm for a description of current practice and Chodorow-Reich et al. (2026) for a history of the treatment of owner-occupied housing in the CPI.

[5] The BLS also makes a minor adjustment to remove utility costs from rent.

Figure 1. Inflation in rent, owners' equivalent rent, and non-shelter CPI



Source: BLS

The expenditure weights in the CPI for tenant and owners' equivalent rent come from the separate Consumer Expenditure Survey (CEX). The tenant rent weight comes from the question: "What was your total rental payment for this month for this unit?" The owners' equivalent rent weight comes from the question: "If someone were to rent your home today, how much do you think it would rent for monthly, unfurnished and without utilities?" In principle, BLS could have used the CEX question to also measure changes in owners' equivalent rent, but instead it uses this question only to obtain the expenditure weight and measures inflation using the reweighted Housing Survey, as described above.

The PCE price index uses the same measures of rent of primary residence and owners' equivalent rent as the CPI. The expenditure weights, however, differ. The PCE price index obtains the expenditure weight for renters by multiplying average rent paid and the number of tenant-occupied units in the American Housing Survey. It obtains the expenditure weight for owners by applying hedonic regression coefficients (for structure type, number of rooms, number of bedrooms, and structure age) estimated in rental units to the characteristics of owner-occupied units along with an additional owner premium.[6]

[6] See https://www.bea.gov/resources/methodologies/nipa-handbook/pdf/chapter-05.pdf.

Of course, the denominator of total expenditure also differs between the CPI and PCE price index.

2.2. Shelter inflation around the world

The treatment of owner-occupied housing in the U.S. CPI differs from the practice in some other statistical agencies including Canada and the Euro Area. Table 1 summarizes. Canada calculates a partial user cost that includes mortgage interest, depreciation, property taxes, and real estate commissions. The Euro Area excludes owner-occupied housing entirely, although a recent European Central Bank (ECB) review recommended changes on this front.

Table 1. Measurement of shelter inflation around the world

Price index	Rent concept	Rent weight	Owners concept	Owners weight
U.S. CPI	Rent of primary residence, new and existing leases	7.5%	Implicit rent that owner occupants would have to pay if they were renting their homes	25.1%
U.S. PCE	Rent of primary residence, new and existing leases	3.7%	Implicit rent that owner occupants would have to pay if they were renting their homes	11.9%
Canada	Rent of primary residence, new and existing leases	7.6%	Mortgage interest, replace cost (i.e., depreciation), property taxes, insurance, maintenance and repairs, real estate commissions	18.8%
Euro Area	Rent of primary residence, new and existing leases	5.9%	NA	0%

Notes: CPI and PCE weights for December 2024.

These differences in the measurement of shelter inflation reflect gaps in the conceptual understanding of the cost of shelter. They also mean that monetary policy in different countries has different practical targets. These issues demand a critical analysis of the proper role of shelter inflation in price indexes and in monetary policy, which we perform in the remainder of this paper.

3. Rental costs and monetary policy

In this section, we explain why optimal monetary policy might ignore inflation driven by rental price increases. Here, we maintain the assumption that rental inflation (whether for tenants or owner's equivalent rent) appropriately measures changes in the cost of shelter.

High rent inflation was a key issue facing U.S. policymakers in 2023 and 2024 as price increases rapidly normalized in the non-housing components of core PCE inflation, leaving core PCE inflation increasingly driven by high rent inflation. The argument for ignoring rent inflation depends on the interplay of three factors: 1) substantial price stickiness in rents, 2) inelastic housing supply, and 3) search costs for housing as the mechanism through which excess demand in housing is rationed. These factors distinguish housing from other sectors of the economy.

3.1. Contribution of rents to core PCE inflation

By late 2023, core CPI excluding shelter was running at around 2% as the price increases seen across a wide range of goods and services during the pandemic faded.[7] Shelter inflation, by contrast, was running at over 6%. With a weight of over 40% in core CPI, excess inflation in shelter was adding more than a percentage point to overall core CPI inflation. The divergence was less stark for core PCE inflation, but it was still the case that the overshoot in core PCE inflation above the Federal Reserve's 2% target was mostly accounted for via excess shelter inflation.

This posed a question for monetary policy. Should a restrictive stance on monetary policy be maintained to exert further restraint on the housing market or should policy ignore excess inflation in shelter and focus primarily on maintaining price stability in the non-housing sectors of the economy? In the latter case, this would likely require reducing rates toward a more neutral level.

3.2. Price rigidity in rents

One rational for ignoring inflation coming from a particular sector or industry is evidence that prices are set flexibly. For instance, food and energy prices are excluded from the Federal Reserve's inflation target because these prices are volatile and arguably determined in markets with minimal price stickiness. Since prices adjust flexibly in these markets, factors of production like labor and other intermediate inputs are not misallocated due to prices that are too high or too low. This is not the basis for the argument to exclude shelter inflation. But, as we describe below, price stickiness interacts with other characteristics of this market.

[7] Core CPI ex shelter on a year-over-year basis was 1.9 percent in September 2023 and was 2.0 percent for 2024.

How flexible are rents in the housing market? Rents for listed units appear to respond quickly to changes in demand. The Zillow rent index rose sharply and quickly in 2021 and 2022 in line with other goods and services prices. However, the official CPI index of rent for primary residences (or OER which is a reweighting of CPI rent) moved much more sluggishly. The Zillow index measures changes in market rents—rents for listed units that change tenants. By contrast, the CPI attempts to measure changes in the rent of all units.

The sluggishness of CPI rents relative to market rents reflects that typically leases are fixed in nominal terms for a year, and the CPI also measures rents every six months, imparting some stickiness in rents for mechanical reasons. However, it also appears to be the case that landlords smooth out rents for tenants who choose to renew their lease. Put another way, continuing tenants do not experience the same rent increase as tenants who switch units. As Bianchi, McKay, and Mehrotra (2024) and Ball and Koh (2025) document, this stickiness in rents can be considerable. Ball and Koh (2025) find an average lag of 26 months in their empirical estimates.[8] A quicker passthrough to price would induce a better allocation of units across renters; renters who need more space could more quickly find those units as other renters downsize rather than hanging onto favorable leases. This “hanging on” is the rental market equivalent of the mortgage lock-in effect currently observed in the market for existing home sales.

The possibility of misallocation in housing markets and inefficient levels of search driven by slow adjustment in rents is a real cost that monetary policy may want to alleviate via restrictive policy. However, policymakers must balance these costs against the risks of lower output and employment in the non-housing sectors of the economy.

3.3. Optimal monetary policy with shelter inflation

The inelastic supply of housing—low levels of vacancies, structural impediments to housing construction, and sharply increasing construction costs after the pandemic—along with search costs as an important rationing mechanism in housing means that the efficiency losses from ignoring housing inflation are less acute in housing relative to other sectors.

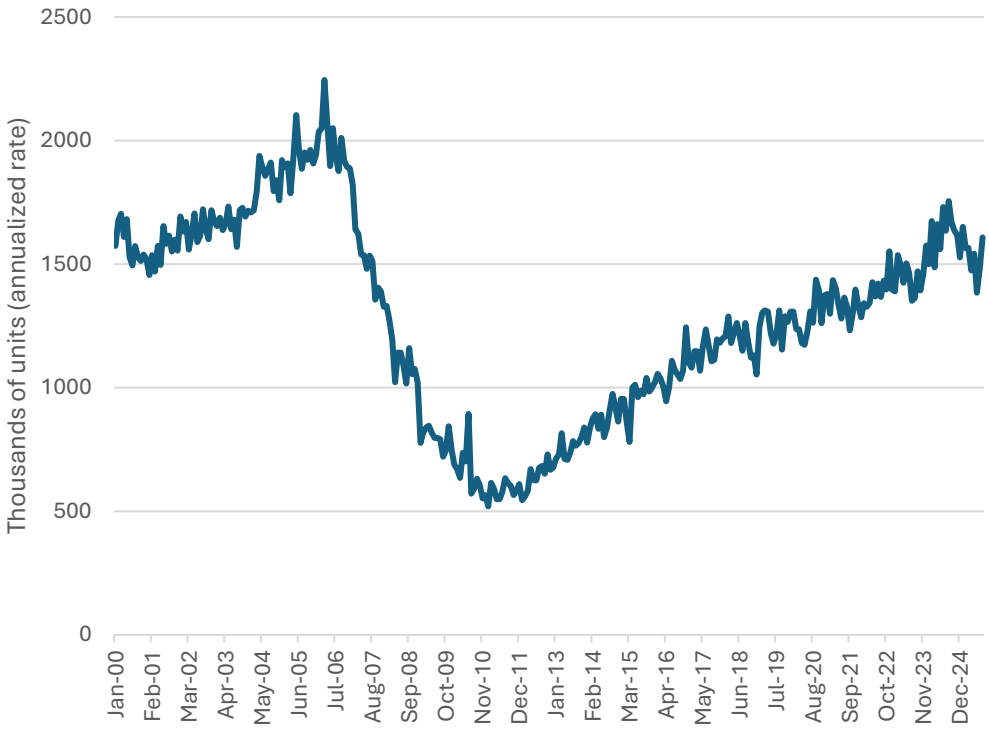
The argument described here follows Bianchi, McKay, and Mehrotra (2025), which argues that in circumstances where shelter inflation accounts disproportionately for overall inflation, optimal monetary policy ignores shelter inflation and instead focuses on stabilizing inflation in the non-housing sector. A concrete implication of their model is that in late 2023 and through 2024, more accommodative policy was justified given that non-housing inflation had stabilized at levels consistent with the Fed’s inflation target.

Since the Global Financial Crisis (GFC), housing construction has been low in the U.S. leading to a chronic shortage of housing. Some housing markets in the Northeast and

[8] This is the weighted average of the fraction of market rents increase in the current month passed through in subsequent months.

West place onerous restrictions on housing construction leading to rising prices and declining affordability. In 2024, housing completions averaged 1.62 million units (annualized rate) or just over 1% of the total stock of housing units. In the decade after the GFC, housing production remained substantially lower, falling to a low of just 585,000 units (average, annualized rate) in 2011 and remaining well below its pre-GFC peak (see figure below). This level of homebuilding was insufficient to offset depreciation and keep up with population growth.

Figure 2. US housing unit completions



Source: U.S. Census Bureau

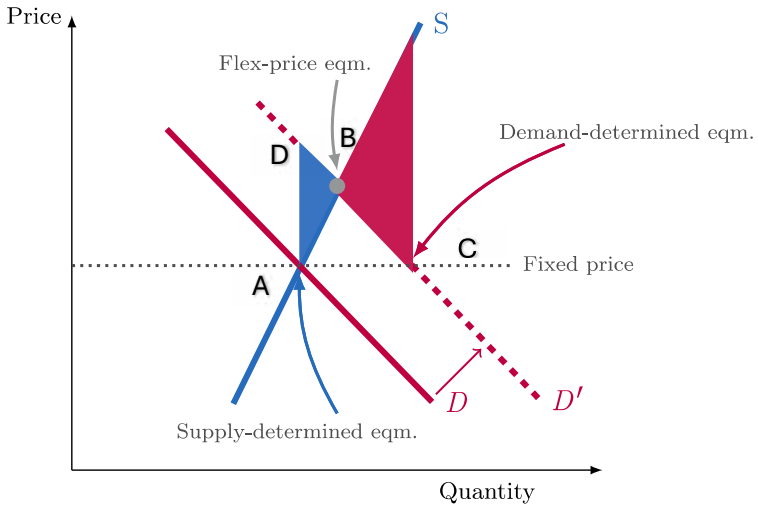
Stock-flow relationships also imply that housing demand shocks are likely to move into the inelastic part of the housing supply curve. In a typical year, housing construction is about 1% of the stock of housing. If housing demand increases 5%, housing construction would require a 500% increase in housing investment to meet increased demand in a year. For more typical goods and services, increases in demand of this order of magnitude can more easily be met via inventory reduction or by more fully using existing capacity.

The pandemic was unique in that it saw a sharp increase in the demand for housing as offices closed, schools shifted to remote learning, and social distancing required less crowding. In one analysis, Mondragon and Wieland (2022) find that the shift to remote work accounted for nearly half the increase in national house prices experienced over the course of the pandemic.

On its own, inelastic supply and sticky prices are not sufficient reason to ignore shelter inflation. As Bianchi, McKay, and Mehrotra (2025) emphasize, search frictions in housing are the critical final ingredient. Search frictions mitigate the potential costs of excess demand in housing, reducing the need for a central bank to respond aggressively to shelter inflation.

To illustrate how this works, Figure 3 below shows a canonical supply and demand diagram for housing where housing supply is relatively inelastic. Consider the obviously extreme case of fixed prices. When housing demand rises but prices are fixed, housing demand exceeds housing supply. Assuming housing supply is unaffected, the excess demand for housing is the difference between point C and point A.

Figure 3. Housing supply and demand diagram with price rigidity



As Bianchi, McKay, and Mehrotra (2025) show, the presence of search frictions in housing has important implications for welfare losses from sticky prices in the housing market. When demand exceeds supply, consumers expend more effort searching for housing, and producers face a lower likelihood of vacancies. Congestion from search serves as the mechanism to ration the limited quantity. That is to say, potential buyers must search longer to buy a home and the all-in effective price, including the cost of that search, is the price associated with point D.

More restrictive monetary policy can reduce the excessive search and congestion in the housing market but risks increasing the output gap in the non-housing sector of the economy.

The loss in surplus relative to the world where both price and quantity adjusts (point B) is the blue triangle. Some of that surplus would have gone to renters (who get more housing at a lower all-in cost including search) and some would have gone to suppliers (who would rent out more housing at a higher price).

Because the supply curve is very steep, which is consistent with construction responding only modestly to increases in demand, the size of the blue triangle is small. In other words, if policymakers could somehow implement policy to move the world to point B instead of point D, the gains would be only modest.

Optimal monetary policy must balance the costs of excessive search (i.e., point D) in housing with inefficiently low production in the non-housing side of the economy. Bianchi, McKay, and Mehrotra (2025) find that, as a quantitative matter, the welfare costs from excessive search are small, implying that optimal policy essentially disregards shelter inflation. The logic here is that only a small fraction of renters and homeowners are searching at any given time, and the resources employed in this activity are modest.

The implications for optimal policy would be much different if suppliers were obligated to increase supply and meet demand at posted prices (i.e., point C). Using the terminology of Barro and Grossman (1971), that would mean the equilibrium quantities would be demand-determined instead of supply-determined. A supply-determined equilibrium is one in which producers do not change their production and, hence, some consumers are rationed. A demand-determined equilibrium is one in which producers increase production to meet the increased demand at the fixed price.

In this case, costs rise significantly when building increases, builders face frictions in raising prices, and, nonetheless, builders increase production to meet greater demand. Producers would accept lower margins until they can increase prices. [9] As a result, the inefficient equilibrium at C would mean a significant loss in surplus—the red triangle—which would be borne by suppliers. Costly labor and intermediate inputs are used to produce housing that is sold below cost. If policymakers could move from point C to point A, the gains are substantially greater than moving from point D to C. As a result, the standard policy prescription is that monetary policy should focus more on inflation in sectors with relatively inelastic supply (i.e., Eusepi, Hobijn, and Tambalotti (2011)).

3.4. Summary

To summarize, in this section we have shown that shelter inflation accounted for a disproportionate share of overall core PCE inflation by the end of 2023 and throughout 2024. Policymakers face a tradeoff between lower shelter inflation at the cost of increasing the output gap in the non-housing sector. Given evidence of price stickiness in rent setting and relatively inelastic supply in the housing market, optimal monetary policy should put less weight on shelter inflation and instead focus on stabilizing inflation in the non-housing sector.

[9] The assumption that firms continue to meet demand at posted prices may seem curious but can be justified for small changes in demand due to menu costs, informational frictions, and/or the presence of markups. For large shocks, however, this assumption means that firms are making losses.

4. Shelter inflation beyond rental costs

This section explains how the current measurement of shelter inflation omits factors that affect household welfare and the cost of living and discusses implications for monetary policy.

4.1. The conceptual rationale for owners' equivalent rent

Housing is a durable asset. This fact may call for distinguishing the service flow from housing from the asset itself. In fact, the CPI treats housing differently even from other consumer durables such as cars or furniture, just as the National Income and Product Accounts (NIPA) classifies housing as a fixed asset, with increments to the housing stock counted as investment rather than consumption expenditure. The reason is that housing is both much larger and more durable than durable goods, with a depreciation rate of just over 1% per year.[10]

Still, durability by itself does not necessarily pose difficulty to price index theory. Since Steiner (1961), economists have understood the one-period cost of consuming a durable good to be the user cost—in the case of housing, typically the value of the down payment, mortgage payment, and property taxes and insurance less the discounted proceeds from selling the house at the end of the period and repaying the mortgage. Absent transaction costs, a person wanting to consume shelter can either pay rent or the user cost. If owning and renting the same property provide the same service flow, then any market equilibrium with both renters and owners must have the user cost equal the rental rate. Given the measurement challenges associated with the user cost (e.g., expectations of future house prices), the BLS effectively assumes this equivalence and uses the rental rate in place of the user cost.

4.2. Problems with the approach

An immediate problem with the owners' equivalent rent approach is that rents and user costs appear to be very different in the data. Gillingham (1983) first noted this problem. Verbrugge (2009) updated and expanded these calculations in a BLS working paper aptly titled "The Puzzling Divergence of Rents and User Costs." Chodorow-Reich et al. (2026) further update this calculation. User costs and rents vary in levels and both high and low frequency time series behavior.

Why do rental rates and user costs diverge in the data? The textbook equivalence of the rental rate and user cost misses two key features that affect the cost of shelter. First, moving involves substantial transaction costs. These costs include the commission paid

[10] For example, the BEA depreciates autos at a rate of 23% per year, furniture at 14% per year, and all consumer durable goods (which exclude housing) at 20% per year. Thus, housing is qualitatively different in the degree of durability. The stock of housing also exceeds the value of all consumer durables by a factor of 3.

to a real estate broker when selling a home or (in some cases) starting a new rental, as well as other search and moving costs. As a result, more than 80% of renters and more than 95% of owners remain in their same residence for more than a year. That is, almost no one actually rents or owns for a single unit of time. Second, people do not generally consider owning and renting of the same property to yield the same service flow. For example, rental contracts typically allow the landlord to inspect the property on demand, reducing the privacy of the occupant. And owners can fully customize the property, such as choosing the paint color or updating a bathroom.

The behavior of rents, house prices, and mortgage rates since 2020 contains a specific warning. Both rent and owners' equivalent rent fell relative to non-shelter CPI during the 2021-2022 inflation surge (see figure 1). Both series then rose faster than non-shelter CPI, but from December 2019 to June 2025, they increased a cumulative 6% in relative terms, about their trend growth over the preceding two decades. Over the same 6-year span, the real (deflated by non-shelter CPI) S&P Cotality Case-Shiller U.S. National Home Price Index rose 25%, and the 30 year mortgage rate increased from 3.7% to 6.8%. Meanwhile, the median respondent to the New York Fed Survey of Consumer Expectations reported expected nominal home growth of about 3% in December 2019 and June 2025. The combination of a higher purchase price and mortgage rate and unchanged expectations implies a sharply higher cost of owning, as reflected by the traditional user cost. To make the same point in slightly different terms, according to Zillow the median price of homes sold in the December 2019 equaled $243k, implying a monthly mortgage payment on a 30-year fixed rate mortgage of about $900. A rise in the real house price of 25% and of the mortgage rate to 6.8% implies a real increase in the monthly mortgage payment to $1600, or a nearly 80% increase. A monetary policy focused on CPI or PCE inflation and the attendant focus on changes in rents misses the effect of these changes on household purchasing power.

Of course, higher house prices benefit incumbent owners, who also are insulated from rising mortgage rates given the prevalence of fixed rate mortgages in the U.S. But these considerations do not make house prices and mortgage rates irrelevant. First, the normal churn of renters and owners means that some households face the higher mortgage payments that result from both higher purchase prices and mortgage rates. Even in 2023, 3.2 million purchase mortgage loans were originated. Second, rising mortgage rates create a wedge between the cost paid by new buyers and by incumbent owners. This wedge affects allocations; the number of first-time home buyers in 2023 was 20% below the level in 2019 and 36% below the level in 2021. Thus, mostly younger households looking to purchase their first home (and perhaps move to a preferred neighborhood dominated by owner-occupied housing) remained renters instead. Owners' equivalent rent misses these effects.

4.3. An alternative approach

How should a price index for consumers account for mortgage and other direct costs of owning, and how would this affect the conduct of monetary policy? Ongoing work by Chodorow-Reich et al. (2026) argues that the pecuniary costs of a durable asset such as shelter, whether owned or rented and inclusive of mortgage costs, should be capitalized and smoothed over time in a cost-of-living index. Their reasoning stems from the relationship between changes in welfare in economic models with durable goods and transaction costs and the textbook approach that derives the price index as the solution to a static expenditure minimization problem.

The textbook approach considers a (representative) consumer who faces a set of prices {p1,p2,…}. In this environment, the cost of living is the minimum expenditure required for this consumer to achieve a pre-set utility level. As the prices change over time, the cost of living also changes, giving rise to a welfare-based price index that tracks the income required to keep utility fixed period-by-period.

With transaction costs, no explicit per-period price of shelter exists, since occupying a property involves a multi-period decision. Instead, changes to mortgage rates or house prices affect expenditure on shelter over multiple periods. Nonetheless, there still exists a per-period transfer payment that keeps utility fixed period-by-period, as in the static case. That sequence of transfers sums to the change in the capitalized value of spending on shelter. Under the additional assumption of smoothing of non-housing consumption, this component of shelter inflation would simply equal the annuitized value of the unexpected change in all future shelter outlays.

An increase in mortgage rates provides a practical example of how this approach would work. When mortgage rates increase, owning costs increase immediately for new buyers or households with variable rate mortgages. For prospective future buyers, whether current renters or owners anticipating an own-to-own move, the higher mortgage rates do not directly affect their current shelter outlays but do increase their expected present value of spending on shelter. The smoothed (or annuitized) value of the aggregate increase in the present value of spending on shelter constitutes the pecuniary contribution to the price index.

Chodorow-Reich et al. (2026) also consider a second dimension of shelter expenditure that stems from the general preference of households to own rather than rent for non-pecuniary reasons such as enhanced privacy. In this case, changes in the homeownership rate and in the mix of who owns and rents additionally affect a welfare-based price index. Of course, measuring these non-pecuniary contributions as well as the present value of pecuniary shelter outlays introduces practical challenges for the BLS, which we do not discuss further here.

4.4. Implications for monetary policy

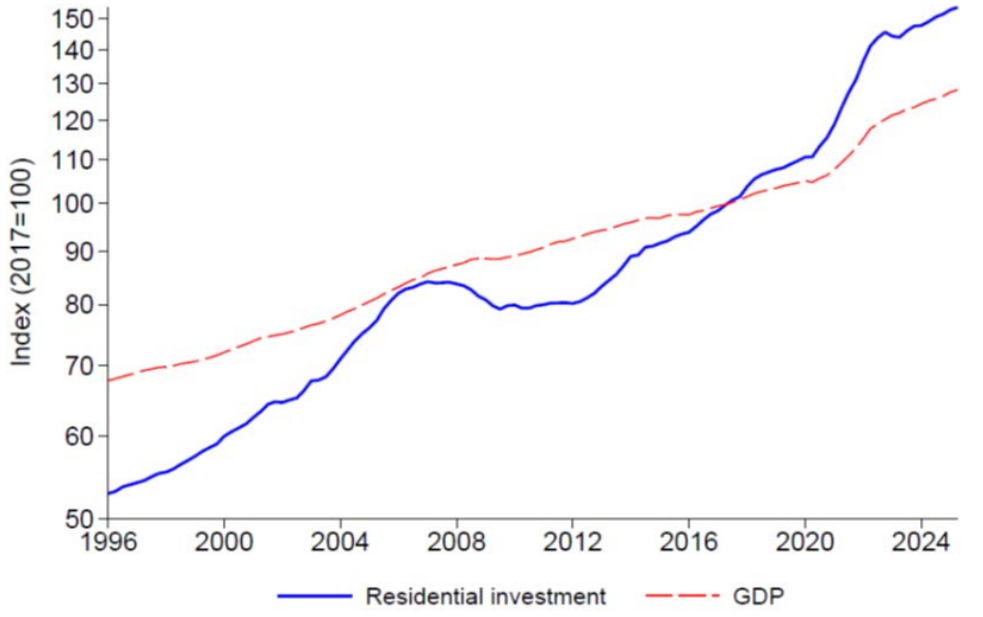
In the approach just outlined, changes in mortgage rates directly affect consumer inflation. This feature creates a potentially awkward challenge for monetary policy, since raising interest rates would directly increase inflation.

However, the Federal Reserve need not target an inflation rate inclusive of mortgage costs. The case for excluding such costs is straightforward. While higher mortgage costs increase the cost of living, they exhibit the classic features of a cost-push shock that generates a one-time increase in the price level. The Federal Reserve has an established history of "looking through" such cost-push shocks. In fact, relative to other cost-push shocks such as energy price changes or tariffs, residential mortgage rates likely have even smaller spillovers to other sectors through the supply chain, limiting concerns of their effect on broader inflation expectations. Thus, the Fed could ignore mortgage costs, just as it does now.

5. Supply-side interventions in housing markets

The cost of building new housing has increased over time. Figure 4 shows the BEA price index for residential investment, along with the overall GDP price index for comparison. The cost of building new housing has nearly tripled over the past 30 years, during which time it has grown twice as fast as the price index for overall GDP. Notably, this index primarily tracks the cost of building and not the additional land cost of a home.

Figure 4. Price index for residential investment and GDP price index



Source: BEA

Reducing building costs and increasing the total amount of housing is an expressed goal of both political parties and several influential commentaries. This section addresses how policies aimed at making it easier or cheaper to build would affect monetary policy.

5.1. Increasing housing elasticity

As noted earlier, the supply of housing is very inelastic in much of the U.S. Partly, this is inherent to the long-lived nature of housing. For an asset that can have a lifetime of 40 years or longer, the number of units that need to be constructed to offset depreciation and match population growth can be quite low. Since investment is small relative to the stock, small changes in national demand for housing or local demand for housing can have large impacts on prices.

However, in many parts of the U.S., supply-side constraints contribute to the low supply elasticity of housing. A thicket of local regulations such as parking minimums, lot size requirements, and restrictions on density raise the cost of building new housing or building infill housing (Gyourko, Hartley, Krimmel, 2019). Permitting requirements can also add costs in the form of time to completing new housing projects. The YIMBY ("Yes in my back yard") movement has pushed for changes in regulations to lower the cost of building new housing.

How would land-use and permitting reforms affect shelter inflation and monetary policy? It is important to distinguish between level and slope effects. YIMBY reforms would have a positive level effect on productivity in the construction sector, raising output and lowering prices. Like most one-off supply shocks, monetary policy would likely look through the transitory effects on output growth and inflation. Likewise, building more housing in high cost, high productivity areas such as San Francisco or Boston could increase aggregate efficiency by allowing more workers to live in high productivity areas (Hsieh and Moretti, 2019). While this development would be good for workers' real incomes, it need not affect the conduct of monetary policy.

Land-use liberalization may also increase the elasticity of housing supply, making it less costly to quickly expand the number of units built when demand is high. In this case, monetary policy may need to pay closer attention to effective housing inflation including search costs. The rationale is that consequences of sticky prices in housing for misallocation of labor and other inputs is more acute with more elastic supply. If price stickiness means that builders do not get the right signal and the result is much more or less housing than would otherwise be built, the efficiency losses are larger. While building too much housing may seem like an unlikely problem in the current environment, an unwarranted construction boom could easily crowd-out other national priorities of a future administration.

5.2. Interest cost channel

The surge in shelter inflation during and after the pandemic prompted some commentators to argue that Federal Reserve interest rate hikes may be counterproductive for the cost of housing because they raise interest costs for homebuilders. Higher cost of capital for homebuilders and developers results in fewer housing starts, thus dampening future supply.

The possibility that tighter monetary policy can raise production costs and hence further raise prices has been well studied in settings not focused on housing. For instance, Barth and Ramey (2001) provide industry evidence for this cost channel, and the mechanism has been incorporated in medium-scale dynamic stochastic general equilibrium models in the spirit of Christiano et al. (2005). Ravenna and Walsh (2006) characterize optimal monetary policy in the presence of a cost-push shock in a one sector model and show that it breaks the "divine coincidence" result that optimal monetary policy can stabilize both inflation and the output gap. Still, most economists would agree that the disinflationary effects of lower demand outweigh any increases in financing costs in the typical case.

Whether housing poses special considerations remains an open question. In a model with a housing and non-housing sector, it is conceivable that interest rates may raise construction costs and thereby raise inflation or worsen the output gap by lowering potential output. However, we are not aware of quantitative work that suggests this channel is significant in the case of housing or would meaningfully alter the conduct of optimal policy. Just as in the typical case, higher interest rates also dampen demand for new construction, providing a strong, countervailing force to higher financing costs for builders.

In the case of the rate hike cycle starting in 2022, the evidence points toward higher rates reducing housing and construction costs on net. Figure 5 shows 6-month growth rates in the Case-Shiller house price index, in the BLS index for new tenant rent (to avoid the time lags in the rent index as discussed above), and in the Census Bureau's price index for the cost of constructing a new single family home.[11] The fact that higher interest rates quickly arrested the high growth rate of house prices has received substantial attention. Perhaps less well known, they also quickly reduced the growth rate of new tenant rents and, especially, of construction costs. Construction costs grew rapidly in 2020 and 2021, as high demand drove up raw material costs (such as lumber) and labor costs. Higher interest rates brought down this demand, easing congestion problems and reducing costs.

[11] This index is used by the Bureau of Economic Analysis to construct its price index for residential investment, shown in figure 4.

Figure 5. House prices, rent, and construction costs in 2020s

Source: S&P Dow Jones Indices LLC, BLS, U.S. Census Bureau

The finding that higher interest rates reduce house prices survives more systematic time series analysis (Gorea et al., 2024). The result that short-run increases in residential investment further drive prices above their long-run level also appears in earlier episodes such as the 1997-2006 housing boom (Chodorow-Reich et al., 2024). Thus, the empirical evidence supports the conventional wisdom that higher interest rates lead to lower house prices and construction costs, at least in the short-run. Of course, they also come with higher costs of owning through higher mortgage costs, as discussed in section IV.

6. Monetary policy and 2000s housing boom

Our argument that shelter inflation should draw relatively less attention from monetary policy raises the question of how to understand the 2000s housing boom. Some have argued that the Fed erred by keeping policy too accommodative as the housing bubble inflated. The subsequent crash in housing prices resulted in the worst financial crisis and worst recession since the Great Depression.

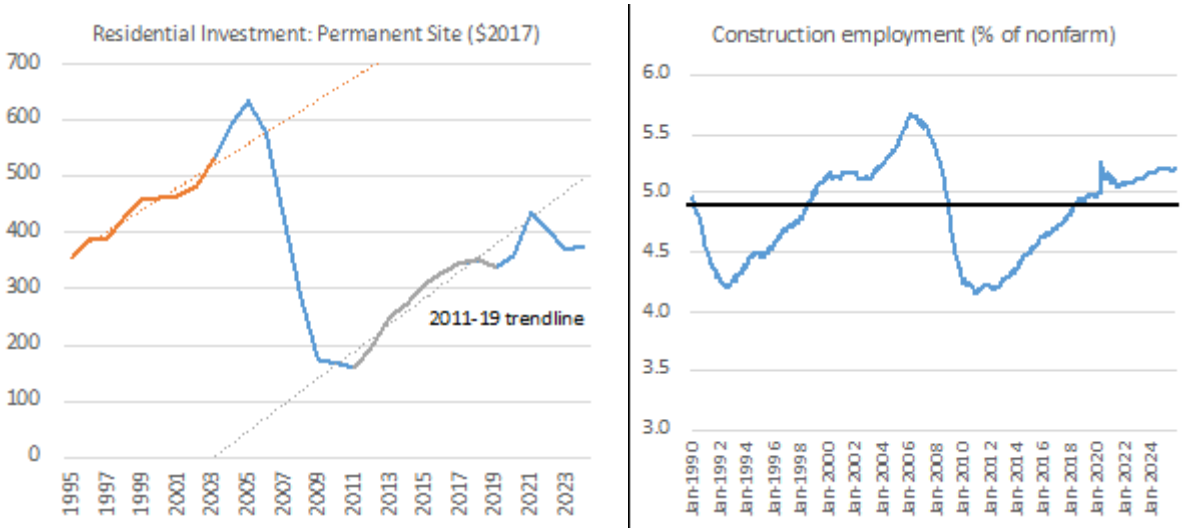
The 2000s housing boom differed from the pandemic housing boom in two dimensions that may have required monetary policy to put somewhat higher weight on the housing market. First, the housing market displayed greater supply elasticity with a stronger response of construction activity and labor to the housing boom in the 2000s relative to the pandemic. Second, the housing boom led to increased fragility in the financial system via exposure to losses on mortgage-backed securities. To preview, in our view the depth

of 2008 recession reflected primarily spillovers to the financial sector rather than the boom and bust in housing construction per se.

We start by reviewing the real response. Figure 1 showed a modest increase in rents relative to non-shelter CPI in the early part of the 2000s housing boom. By contrast, the 2023/2024 post-pandemic period saw a much sharper increase in housing inflation. Overall core PCE inflation was only slightly above the 2% target in the mid-2000s; by contrast, in 2023 and 2024, core PCE inflation was above 3% with a significant contribution coming from core PCE's housing component.

In contrast to the pandemic, quantities rose more sharply in the mid 2000s housing boom. The left-hand side panel of Figure 6 below shows real residential investment in permanent structures.[12] The 2000s saw a greater response in terms of construction and housing supply relative to trend. The right-hand side shows employment in construction as a share of total employment. Again, the 2000s housing boom saw a more substantial increase in construction share in comparison to the pandemic housing boom.

Figure 6. Residential investment and construction employment



Source: BEA and BLS

As emphasized in the previous section, the conclusion that monetary policy should focus less on the housing market depends on the degree to which excess demand is rationed via congestion and price increases. When housing supply is highly inelastic, rationing is more likely via these channels. To the extent that excess demand is resulting in the misallocation of real resources—goods and labor—as construction responds to high demand, a more conventional monetary policy response is warranted.

[12] Residential investment in the national accounts includes brokers' commissions and real estate fees and improvements to existing structures. The measure shown here excludes those components.

Yet, even the 2000s construction boom seems unlikely on its own to have directly caused the macroeconomic damage that followed. The declines in construction employment and activity preceded the financial crisis by about a year, and reduction in employment and activity directly associated with housing construction were a modest part of the overall contraction. At its peak, construction employment was less than 1 percentage point above its 1990-2024 average (5.7% v. 4.8% share of nonfarm payrolls). Put another way, if this excess employment in construction all flowed into unemployment after the housing bust, displaced construction workers would have added less than 0.8 percentage points to the unemployment rate. Employment in information services displayed a similar boom around the tech bubble in the late 1990s with a similar increase in its employment share, with modest direct effects from its unraveling.

Swings in residential investment as a share of GDP were more pronounced, but the analogy to the tech bubble is again instructive. Residential investment peaked in late 2005 at 6.7% of GDP—about 2.5 percentage points above its 1990s levels. Nonresidential investment was similarly about 2 percentage points above its 1990 levels at the peak of the tech bubble. Additionally, residential investment was back to its pre-boom levels by late 2007, well before much economic damage had been experienced.

In our view, the indirect financial consequences of the housing boom proved much more disastrous. These consequences include a boom and bust in household consumption associated with fluctuations in housing wealth (Mian and Sufi, 2014) and the freezing of the financial system and associated cut off of credit due to concentrated losses from mortgage-backed securities and other housing-related investments (Chodorow-Reich, 2014). We certainly do not deny a role to monetary policymakers in seeking to curb these vulnerabilities from fluctuations in the housing market.

The analogy to the tech bubble again suggests lessons. Both episodes involved early excesses around long-term changes, in the role of information technology and computers in the tech case and in a long-term rise in house prices and rents in the other. In the tech case, these early excesses did not involve substantial debt and resulted in the mild recession of 2000. Thus, the case for monetary policy to focus on housing rests more on macroprudential and financial stability grounds that direct implications of either shelter inflation or booms and busts in housing activity and construction employment.

7. Summary of lessons for policymakers

The rise in shelter inflation during the pandemic has raised important questions on both how to properly measure housing inflation and how to conduct monetary policy in circumstances where housing inflation is making a disproportionate contribution to overall inflation.

We emphasize that there is a case for broadening the concept of shelter costs to include mortgage rates. As a measure of the cost of living, the mortgage rate is relevant for the cost of shelter and would reflect material changes in the cost of living arising from the sharp increase in mortgage rates during the pandemic. However, for the purposes of monetary policy, this mechanical effect of mortgage rates into inflation may be ignored, with policymakers focused on stabilizing inflation excluding mortgage costs.

We also suggest that policymakers need to think about the costs of inflation and whether shelter inflation is driving underlying misallocation in goods or search intensities across the economy. Drawing on the work of Bianchi, McKay, and Mehrotra (2024), we have emphasized that there are reasons that the structure of housing markets implies that imbalances in housing demand are less distortionary. Moreover, to the extent that monetary policy has a large cost channel effect on housing production, policymakers may also wish to lower their weight on shelter inflation. A throughline in these results is that policymakers ought to consider more ways in which their inflation target should differ from measures of cost of living.

It is important to emphasize that models of optimal monetary policy typically do not include intrinsic costs of inflation. That is, households suffer from misallocations induced by excess demand or supply (i.e., overheating or too much unemployment) but do not experience disutility over inflation per se. The proposition that monetary policy should ignore inflation in housing may be quite different if households have direct disutility from inflation that could dominate the misallocation effects in the labor market or in terms of search effort.

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