

Housing Prices and Inflation November 29, 2021

When people complain about rising inflation, as they are doing right now, they often speak about housing prices, along with prices for gasoline or furniture or dry-cleaning and whatever else is increasing sharply at the time. However, housing prices as such are not actually in our inflation numbers. Rents are included in our inflation index, but measuring the cost of owner-occupied housing poses a challenge for statistical agencies.

The Challenge of Owner-occupied Housing

The problem is that owner-occupied housing has a large investment component. Housing lasts many years, during which owners enjoy the benefits of the housing services provided. While people buy houses primarily for these housing services, they often do so expecting that the price of the house will rise and they will enjoy a capital gain. They may even buy a more expensive house to take advantage of the potential for appreciation. Cars, furniture, and other consumer durables also deliver services over years and can be resold; yet we are content to treat them as though they were consumed in the year purchased. But houses last much longer than cars and the investment component is much larger for housing.

Why does this matter?

Expenditures on owner-occupied housing absorb a large share of household income. Thus, changes in the cost of owner-occupied housing are important to consumers' economic well-being. Moreover, however the cost of owner-occupied housing is measured it will have a substantial weight in the inflation index and will influence perceptions of inflation.

The consumption-investment distinction is also important because public attitudes towards rising prices for consumer goods are different from their views about rising asset prices. People dislike inflation: they think higher prices for the goods and services they consume undermine their standard of living. While incomes generally increase along with prices, this is not true for everyone; and even those whose incomes keep up with inflation may be disappointed that their income gains, which they often attribute to their personal merit, are offset by higher prices.

In contrast, people like to see the value of their investments increase. Higher asset prices increase their owners' potential consumption of goods and services. If you are a homeowner, higher housing prices increase your owners' equity and net worth. You can tap into this increased equity by selling and moving to a lesser value house or rental unit, perhaps when children leave the nest or you move to a lower-cost region. You may also be able to borrow against your increased home equity, boosting consumption today, while still enjoying your current home. Of course, if you are an aspiring homebuyer, higher housing prices put both the consumption and investment components of owner-occupied housing further out of reach.

How is Owner-occupied Housing Treated in Inflation Indexes?

So how do the statistical agencies deal with housing in their inflation measures? For rental housing there is no issue, although the actual calculations may be complicated. The monthly contract rent is the relevant measure of the cost to the consumer of housing services or shelter. In the United States, this is called “rent of primary residence.” For owner-occupied housing, countries take different approaches.

In the United States, the Bureau of Labor Statistics (BLS) uses an approach called rental equivalence. BLS estimates what owner-occupied houses would rent for if homeowners rented their houses to one another rather than owning and living in the houses themselves. To establish an appropriate base year weight for owner-occupied housing, a sample of homeowners is surveyed to find out what they think their homes would rent for. This base is then updated using changes in the rents of comparable rental properties. In other words, BLS tries to treat owner-occupied housing as equivalent to rental housing units, by looking at changes in the cost of renting the housing services these owner-occupied units provide. This cost is called “owners’ equivalent rent.” The Personal Consumption Expenditures (PCE) index, which is the Federal Reserve’s preferred measure of inflation, uses the same approach.

Other countries use the same approach as the United States, but some do not. Canada follows what it calls a partial user cost approach. A user cost approach can be viewed as the landlords’ side of owner’s equivalent rent. It looks at the financial, depreciation and other costs that households would incur if they were landlords renting out their housing units. Australia and New Zealand, on the other hand, treat housing the same way as automobiles and consumer durables – and also nondurables and services - are treated. This is called the net acquisitions approach. The base is the value of houses newly acquired by the household sector. Sales of existing homes by one household to another are not included. Land costs should be excluded because land is considered investment.

The Euro area is notable in not including owner occupied housing in its primary inflation measure at all, although Eurostat, the area’s statistical agency, has been studying the adoption of the net acquisitions approach for the past ten years. They favor net acquisitions over a user cost approach because the latter entails many imputations and does not, in their view, reflect observed transactions. Also, as discussed below, they consider rental and owner-occupied housing markets too different to use owners’ equivalent rent.

The treatment of owner-occupied housing in our inflation measures is important because using any approach other than omission, it has a substantial weight in the overall inflation index. In the United States owners’ equivalent rent had a weight of about 24 percent in 2020. In Canada, with its partial user cost approach, “owners’ accommodation,” excluding utilities, had a weight of 13 percent. In Australia “new dwelling purchases” had a weight of 8 percent.

Implications of Owners' Equivalent Rent

The United States adopted the owners' equivalent rent approach to housing costs in the early 1980s. Before then, it had used a "payments" approach, which measured changes in various out-of-pocket costs associated with homeownership. These payments included the net value of households' home purchases (purchases less sales), contracted interest payments on home purchase mortgages, expenditures on maintenance and insurance.

The payments measure of the cost of owner-occupied housing was quite volatile, particularly in the high-inflation 1970s. Also, because it included mortgage interest payments, it had the undesirable feature that when the Fed raised interest rates to combat rising inflation, the measured rate of inflation increased. By shifting to owners' equivalent rent, this rather perverse feature of the inflation index was removed. Owner's equivalent rent was also an intellectually appealing concept because it seemed to capture the consumption portion of expenditures on owner-occupied housing, without the investment component.¹

The problem is that the markets for rental housing and owner-occupied housing are segmented. In the United States, owner-occupied housing is almost entirely single-family housing. In contrast, about half of rental housing is in multi-unit buildings and a much larger share of the single-family housing that is available for rent is attached than is the case for owner occupied units. Owner-occupied and rental housing are found in different locations and are occupied by people in different phases of their lives. Thus, it is doubtful that homeowners have a good sense of what their houses would rent for, calling into question the validity of the base year weights. And finding rental units that are representative of the owner-occupied housing stock and where changes in rents adequately proxy for changes in the cost of ownership is also difficult. The BLS has made repeated adjustments to its sample, trying to identify rental units that capture the key features of the owner-occupied housing stock. However, the bottom line is that owner's occupied rent is based largely on what is happening in the market for rental housing, not owner-occupied housing.

The resulting measure of owner-occupied housing costs tracks "rent of primary residence" very closely. Differences are due largely to some contract rents covering energy and utility costs in addition to payment for housing services. For owner-occupied housing, energy and utility costs are separate consumption items.

Rents and thus, owners' equivalent rent are relatively stable. They may or may not reflect a housing boom that drives up housing prices. If the boom is due to a general demand for shelter that increases the demand for both owner-occupied and rental housing, owners' equivalent rent index will show an increase – because rents have gone up. However, if

¹ Robert Gillingham and Walter Lane summarize the rationale for the change in "Changing the treatment of shelter costs for homeowners in the CPI," *Monthly Labor Review* (June 1982) 9-14. They stress the conceptual appeal of rental equivalence and the effect of innovations in mortgage financing and rising home prices on BLS' ability to estimate costs.

rising housing prices are due to increased demand for owner-occupied housing, *compared to rental*, the index may fall – because rents are falling. Such a shift in housing preferences could occur because houses have become a more attractive investment; but it could also reflect changing patterns of housing consumption, if, for example, large numbers of younger adults who were formerly renters have children and seek the added space of single-family homes.

The index for owners' equivalent rent was very stable during the U.S. housing bubble from 2000-2006, even though house prices were rising rapidly. When the bubble collapsed and housing prices declined, a few analysts raised the concern that rising foreclosures of single-family homes and a shift to rental housing might push up rents and raise our measures of owners' equivalent rent and overall inflation despite the weak economy. (This did not happen. The increase in rents slowed, with a lag.)

Thus, our inflation figures do not include housing prices. That is probably appropriate, given the large investment component in housing. The bad news is that expenditures on owner-occupied housing also are an important consumption item, and we have an imperfect measure of changing costs for owner-occupied housing. While owner's equivalent rent is intellectually appealing as a measure of the consumption of housing services, the reality is that rental and owner-occupied housing markets are different, and our inflation measures primarily reflect trends in rent. Moreover, since inflation in rents is relatively stable, by applying changes in rents to the larger owner-occupied housing segment, we have introduced into our inflation measure a large component that rises steadily over time and stabilizes the overall index.

The alternatives have their own drawbacks. The user cost alternative requires calculating repairs and maintenance; financing costs, including opportunity costs; depreciation; and capital gains. Some of these costs are not observable and must be imputed. Capital gains is particularly problematic, because any estimate will be based on historic values and may produce the perverse result that rapid increases in housing prices may, by increasing expected capital gains, reduce estimates of the overall cost of owner-occupied housing. (Canada does not include capital gains in its estimates.)

The net acquisitions approach should capture the effects of a housing boom. However, the exclusion of land requires estimations and approximations. The weight on owner-occupied housing is also sensitive to the state of the housing cycle in the base year. Net acquisitions costs are dominated by new home sales and thus, new housing construction. If housing construction in the base year is depressed, owner-occupied housing will have a substantially smaller weight in the inflation index than if construction is buoyant.

Various studies in various countries have estimated how the different approaches affect overall inflation rates and inflation in shelter costs.² Differences year by year can be

² Examples include Tanya Flower, "Understanding the different approaches of measuring owner occupiers' housing costs: Weights analysis" Office for National Statistics website (January 10, 2017) and Patrick

striking but over time, they tend to cancel out. Rental equivalence is the most stable. Net acquisitions is volatile. The user cost approach and payments approaches are very sensitive to how interest costs are calculated. No measure under consideration seems to give consistently higher or lower readings on inflation.

Conclusion

Housing prices are not included in our inflation numbers. In fact, the costs of home ownership are not well represented at all. Instead, our measure of home ownership costs introduces a large trend component into measured inflation. Unfortunately, a suitable alternative is not obvious, and I can sympathize with the Eurozone, which has been studying the issue for about ten years and still does not include the cost of homeownership in its primary inflation measure. This may not continue, however. Just recently, the European Parliament came out with an analysis calling for an acceleration in the schedule for incorporating owner-occupied housing costs. The authors are concerned that, at a time when inflation and housing prices are both rising, excluding owner-occupied housing from the inflation index might undermine the credibility of the central bank's commitment to low inflation.³

Sabourin, "Measuring Durable Goods and Housing Prices in the CPI: An Empirical Assessment," *Bank of Canada Review* (Autumn 2015).

³ Luigi Bonnatti and Andrea Fracasso, 2021, *Including Owner-Occupied Housing Costs in the HICP: Some Technical and Policy Remarks*, Publication for the committee on Economic and Monetary Affairs, Policy Department for Economic, Scientific and Quality of life Policies, European Parliament, Luxembourg.