Taxes, Homeownership, and The Allocation of Residential Real Estate Risks

*Satyajit Chatterjee**

The saving habits of Americans have aroused a great deal of interest in recent years. While attention has focused mostly on how much people save (it is commonly thought that the typical American saves too little), the form in which households save is perhaps just as important. In fact, Americans use a large fraction of their savings to buy houses.

In a recent study, Arthur Kennickell and Martha Starr-McCluer reported that, in 1992, the median holdings of financial assets such as checking deposits, savings accounts, bonds, CDs, mutual funds, life insurance, and stocks were $24,000 among homeowners. In contrast, the median value of a primary residence among homeowners was nearly $82,000, and the median value of their total debt (including mortgages and home equity loans) was only $38,000. Clearly, a large chunk of the typical homeowner's lifetime savings is tied up in the family house. Since 64 percent of American

*Satyajit Chatterjee is a senior economist and research advisor in the Research Department of the Philadelphia Fed.

households are homeowners, the importance of home equity to household assets is beyond doubt.

Of course, it is well understood that the U.S. tax code encourages homeownership. For instance, experts agree that the reduction in tax liability made possible by homeownership is the main reason for the predominance of home equity in household assets.[1] What is perhaps less well understood is that, by encouraging homeownership, the tax code plays an important role in determining who bears the risk of fluctuations in the value of residential real estate.

Although the risk-allocation consequences of homeownership (and by implication of the U.S. tax code) rarely get mentioned in popular discussions and policy debates, they deserve to be better understood and appreciated for several reasons. First, the risks of owning residential real estate are significant, and the issue of who bears these risks, and why, is an intrinsically important one. Second, the U.S. housing stock is very large, and because the tax code affects the way residential real estate risks are borne, it exerts a significant influence on economic welfare.[2] Finally, proposals to change the tax code with respect to housing appear frequently, and a full understanding of such proposals requires an understanding of their consequences.

THE TAX ADVANTAGES OF HOMEOWNERSHIP

To understand the effect of the tax code on the allocation of residential real estate risks, it's essential to understand the manner in which the U.S. tax code encourages homeownership. Most people regard the deductibility of mortgage-interest payments as homeownership's main tax advantage. In a sense, this is correct, but the fundamental reason underlying the tax advantage goes deeper than that. Indeed, houses can serve as a tax shelter even without the deductibility of mortgage-interest payments. Let's see why.

Housing services—shelter and heat, for example—could be had by renting. Therefore, to understand why homeownership has a tax advantage, we need to compare the tax liability of a household that moves from renting to owning. Suppose a household is currently paying an annual rent of $10,000. Suppose further that it can purchase the house for $100,000 using its own funds and that these funds are currently invested in financial assets earning a market interest rate of 10 percent a year. In addition, the household's income tax rate is 30 percent. If this household liquidated its financial investment and bought the house, it would save $10,000 in rent each year, but it would lose a before-tax interest income of $10,000 (10 percent of $100,000). However, since $3000 of this $10,000 would be lost to taxes anyway (30 percent of $10,000), the actual loss in after-tax interest income would be only $7000. Thus, the household would save $3000 by owning the house, even though there is no mortgage interest to deduct.[3]

What explains this tax advantage of ownership? When the household buys the house, it effectively becomes its own landlord. Thus, imagine that the household continues to pay rent, but now, in its capacity as landlord, it is

[1]See, for instance, the articles by David Laidler and Harvey Rosen.

[2]In 1989, the total value of private residential capital stock was about 80 percent of all private nonresidential capital stock in the United States. See tables A6, on page 213, and A9, on page 276, in the publication by the U.S. Department of Commerce.

[3]The example supposes that regardless of whether the household rents or owns, its income exceeds the standard deduction allowed for federal taxes. It also supposes that the household opts for the standard deduction in either case. Since there is no mortgage interest to deduct, and since state and local taxes alone usually do not make itemization worthwhile, this assumption is reasonable.

the recipient of that rent as well. While the household's expenses remain unchanged (it is still paying the $10,000 in rent), it is now the recipient of $10,000 of rental income. Against this additional income, the household forgoes a before-tax interest income of $10,000 or an after-tax interest income of $7000. The source of the gain should now be apparent: when the household purchases the house, it replaces $10,000 of interest income on which it paid tax with an equivalent amount in rental income on which it is not required to pay tax. Thus, its tax payments are reduced $3000.

The crux of the matter, then, is what counts as income for personal income tax purposes. Generally speaking, the IRS counts as personal income only those funds households receive from *external* sources, including payment for labor or interest and dividends. What matters for household decisions, however, is not just income from external sources but *full* income, which includes what the household implicitly earns (and spends) when its labor and assets are used within the household. Since implicit rental income is tax-exempt, it gives households an incentive to convert explicit income (from financial assets) into implicit income by owning rather than renting a house. The higher the household's tax rate on explicit income, the greater is its incentive to own rather than rent.

The Role of Deductibility of Mortgage Interest. The above example did not involve a mortgage. Yet, the most often cited benefit of homeownership is the deductibility of mortgage-interest payments. Where does this advantage fit in?

If mortgage interest is not deductible, households that need to borrow money to buy a house would be unable to exploit the tax advantage as effectively as those who don't borrow. To take an extreme case, consider a household that borrows the entire purchase price of $100,000 at a market interest rate of 10 percent. In the first year following the purchase, the household will have an interest liability of $10,000 to match the implicit rental income of $10,000 and will not gain financially from ownership. However, as the household pays down its debt (i.e., accumulates equity), the implicit rental income will exceed the interest liability on the remaining debt, and homeownership will allow the household to save on taxes. The tax savings increase as the mortgage debt declines: borrowing households would have to wait until they own their property free and clear before they could enjoy the same tax advantages as households that buy their property outright.

The deduction for mortgage interest puts these households on a more even footing. Now, the borrowing household can deduct $10,000 from its taxable income in the first year of the purchase, leaving it with the same taxable income as the household that bought its property outright. In later years, the tax deductibility from mortgage interest would of course fall, but there will be a corresponding rise in the tax benefits from owning an increasing portion of an asset that generates tax-exempt implicit income. Thus, allowing a deduction for mortgage interest gives borrowing households roughly the same access to the tax advantages of implicit rental income as households that own their houses outright.[4]

Do Tax Benefits Get Capitalized in House Prices? One objection to the argument that owner-occupancy carries a tax advantage is that competition among potential owner-occupants ought to raise house prices until households become indifferent between renting or owning. In other words, the tax benefit from owner-occupancy should get capitalized in the house price.

---

[4]The tax liabilities of these households won't be identical because the borrowing household must *give up* its standard deduction to claim the mortgage-interest deduction whereas the household that purchases its property outright can "deduct" $10,000 from its taxable income without giving up the standard deduction.

Tax advantages get "capitalized" in the value of houses in the sense that the value of owner-occupied housing is higher because of them. Still, most households will prefer owner-occupancy over renting because the rent on these houses also increases with the rise in their market value. This happens because landlords, who have the option of investing their funds in financial assets, would be willing to hold these houses as rental property only if the rent is high enough to match the interest income forgone. Put differently, the annual rent on a house cannot stray too far from the product of the house price and the interest rate on financial assets. As long as this is the case, households that rent such houses would lower their taxes by becoming owner-occupants.

However, some exceptions arise because the U.S. tax code allows landlords (but not owner-occupants) to reduce their taxable income by an amount that reflects the depreciation on their rental properties.[5] For wealthy landlords facing a high income-tax rate, this depreciation allowance can be quite valuable. Thus, they may be willing to bid more for rental property than the amount of rent charged would justify. Furthermore, if the potential owner-occupants of a house are families with low income-tax rates, the tax benefits accruing to potential owner-occupants of the house may be less than the tax benefits accruing to wealthy landlords who rent it out. In this case, the price of a house will, in effect, be determined by landlords competing to capture tax benefits and will exceed any price that potential owner-occupants may be willing to pay. Thus, households that rent such houses may actually be better off renting than owning.[6]

Are tax benefits capitalized in house prices? To some extent, but not fully for all types of housing.

HOMEOWNERSHIP AND THE ALLOCATION OF RESIDENTIAL REAL ESTATE RISKS

Like the value of any other useful asset, the value of houses fluctuates over time. Indeed, the record shows that house prices are quite volatile (see the Table). For instance, real house prices in Newark, New Jersey, rose 4.1 percent, on average, between 1977 and 1980.[7] Then, after barely rising between 1980 and 1983, they shot up 15.5 percent between 1983 and 1987. Finally, between 1987 and 1991, they declined 4 percent.

Such volatility makes it clear that although houses provide comfort and shelter, homeownership brings with it substantial financial risks. It also means that by encouraging homeownership the tax code partly determines who bears these financial risks. To see this more clearly, note that a home purchase really involves two distinct transactions bundled into one: the purchase of a house and the purchase of the service benefits (comfort and shelter) that flow from the house.[8] In the absence of a tax advantage to owner-occupants, the market would tend to "unbundle" these

[5]In their book, Edwin Mills and Bruce Hamilton explain: "Annual depreciation for tax purposes is straight line over 27.5 years. That means that 100 (1/27.5) = 3.6 percent of the basis can be subtracted from rents each year for 27.5 years in computing the owner's yearly taxable income. The basis on which depreciation is calculated is purchase price plus transactions costs at time of purchase."

[6]However, on average, an American household's estimated tax savings from owner-occupancy is about 15 percent of the value of its house. See Mills and Hamilton, p. 232.

[7]That is, house prices in Newark rose 4.1 percent faster than the prices of other items households consumed.

[8]The easiest way to grasp the distinction is to see that it's possible to do one transaction without doing the other: someone wanting to purchase only the house (and not the service benefits) could buy the house and rent it out to someone else and someone wanting to purchase only the service benefits could rent the house.

TABLE

Percentage Real House Price Appreciation Over Different Periods

	1977-80	1980-83	1983-87	1987-91	1977-91
Boston, MA	4.7	4.8	16.1	-5.5	4.8
Naussau-Suffolk, NY	0.6	10.3	15	-4	5.2
Newark, NJ	4.1	0.8	15.5	-4	4.1
Atlanta, GA	1.7	-2.5	2.7	-2.2	-0.1
Baltimore, MD	1.1	-2.2	4.2	3.5	1.9
Charlotte, NC	4.6	-2.4	3.2	0.3	1.4
Richmond, VA	0.4	-2.7	1.8	0.7	0.2
Washington, D.C.	3.3	-2.1	3.5	3.6	2.3
Chicago, IL	3	-4.9	3.9	3.1	1
Cincinnati, OH	5.6	-5.3	1.6	1.8	0.2
Cleveland, OH	2	-6.4	1.5	2.4	-0.5
Columbus, OH	3.2	-4	2	1.1	0.2
Detroit, MI	10.5	-7.1	3.8	2.8	1.2
Kansas City, MO & KS	7.3	-4	0.8	-2.8	-0.7
Louisville, KY	4	-3.8	0.8	0.2	-0.3
Minneapolis, MN	10.4	-3.1	1.6	-1	0.7
St. Louis, MO	8.2	-4.3	2.7	-1.8	0.1
Dallas, TX	11.4	-0.8	-0.2	-7	-0.8
Houston, TX	6.2	-1.1	-10	-2.1	-3
Oakland, CA	7.7	-2.6	4	6.4	4
Sacramento, CA	9.6	-3.5	1.4	8.5	4
San Francisco, CA	7.4	-2.3	5	7.7	4.7
San Jose, CA	7.1	-1.9	4.2	7.1	4.3
Santa Rosa, CA	8.7	-2.8	2.1	9.6	4.5
Seattle, WA	13.2	-5.5	1.9	6.8	3.9
Stockton, CA	6.8	-2.2	1.7	7.1	3.4
Anaheim, CA	5.8	-0.7	1.3	6.4	3.3
Los Angeles, CA	9.1	-2.3	3.1	7.9	4.5
Riverside-Santa Barbara, CA	7.2	-3	0.7	6	2.7
San Diego, CA	7.4	-3.9	2.4	5.7	3
Average	**6.1**	**-2.4**	**3.3**	**2.3**	**2**

Figures for each city are taken from Table 2 in the paper by Jesse Abraham and Patric Hendershott. The rate in each column is the growth in average house prices from the middle of the beginning year for that column to the middle of the ending year for that column. Nominal appreciation rates in house prices were converted into real terms by subtracting the growth in local CPI, net of shelter costs. The last row reports the mean for each column.

distinct transactions. The household that most values the services of a house will rent it from those best able to bear the financial risks of ownership. However, the tax code throws a monkey wrench into the works by allowing many households to reduce their tax liability if they own rather than rent. (Recall how, in the basic example, the household paid $3000 in additional taxes if it rented rather than owned its house.) Thus, the tax code leads some households that might otherwise rent into owner-occupancy and the financial risks that attend it.

The record of house-price movements also shows considerable disparity in the performance of residential real estate across cities. For instance, appreciation in real house prices between 1977 and 1991 ranged from an average of 5.2 percent for Nassau-Suffolk on Long Island to -3 percent for Houston. Generally speaking, the different degrees of appreciation in house prices in these cities reflect the pace of their economic growth. For instance, Jesse Abraham and Patric Hendershott found that real income and employment growth helped explain the different degrees

of real house-price appreciation across cities. Since economic growth is unlikely to be even across cities, sharing real estate risks has potential gains. If homeowners who experience unexpected decreases in the value of their houses could be compensated by those experiencing unexpected increases, the financial position of *all* homeowners would be more stable.

But the practical problems in providing such insurance preclude such arrangements.[9] However, insuring owners against possible declines in the value of their homes is not the only way for households to share the risks of residential real estate. An alternative arrangement is one in which households purchase portions of houses located in different places. By having their "home equity" spread over many houses in different locations, households could share the risks of unpredictable movements in price. An unexpected decrease in real estate values in one location may be offset by an unexpected increase in another. Of course, this sort of risk-sharing is precisely what the equity market offers to its participants. By using their savings to buy small amounts of stock in many different companies, households can make the return on their financial investment more stable.

Could the equity market be used to diversify, i.e., share, the risks of residential real estate? The opportunity for diversified investment in real estate exists in the form of real estate investment trusts (REITs). These businesses raise funds in the stock market (and borrow from banks) to invest in real estate nationwide. To date, REITs have focused on industrial and commercial properties, but a few invest primarily in apartment complexes. REITs (and similar businesses) could potentially offer an opportunity for diversified investment in single-family homes provided households find it economical to rent these homes on a long-term basis. Unfortunately, the tax code chokes off this channel for diversifying residential real estate risks by making it more costly for many families to rent single-family homes than to buy them.

TAX POLICIES AND THE ALLOCATION OF RESIDENTIAL REAL ESTATE RISKS

Proposals for changing the U.S. tax code come up frequently, and sometimes include suggestions for altering the tax treatment of owner-occupied housing. As stated earlier, the debates surrounding such proposals rarely (if ever) mention their risk-allocation consequences. Furthermore, changes that don't directly alter the tax treatment of owner-occupied housing but that do alter the tax treatment of income from financial assets could also affect the allocation of residential real estate risks. This section points out the possible risk-allocation consequences of two proposals for changing the tax code.

A change often proposed is the elimination of the mortgage-interest deduction. Such a change would certainly reduce the subsidy to owner-occupied housing (which is usually the reason given in support of a change), but it would have an ambiguous effect on the allocation of residential real estate risk. On the one hand, it would encourage the rental housing market—a step that would improve the allocation and diversification of residential real estate risks. On the other hand, households that continue to own their own homes would have a tax incentive to put even more of their savings into their houses. Owner-occupants would take on less leverage, but as a result, their asset portfolios would become even less diversified. To see why, let's go back to our example in which a household is contemplating the purchase of a $100,000 house.

This time, suppose that the household has $20,000 in personal funds currently invested in financial assets that earn a market interest rate

[9]For a discussion of the issues involved in directly insuring house values, see the article by Robert Shiller and Allan Weiss.

of 10 percent. As before, the household's income tax rate is 30 percent. The question is, how much of its personal funds should the household commit? If mortgage interest is tax-deductible, committing $20,000 versus any lower figure has no tax advantage. For instance, if the household were to commit only $10,000, it would retain $10,000 of financial assets on which it would earn an interest income of $1000 a year. Because its mortgage will be $10,000 higher, it would also have an added mortgage-interest liability of $1000. But if mortgage interest is deductible, the deduction will balance the additional income, and the household's taxable income will not change. Thus, committing $20,000 versus $10,000 will make no difference to the household's taxes.

In contrast, if mortgage interest is not tax-deductible, there is a clear tax advantage to committing all $20,000. If the household committed only $10,000, it would earn interest income of $1000 but have no offsetting deduction, and its taxable income would be higher by $1000. Thus, for families who continue to be homeowners, eliminating the mortgage-interest deduction will increase the desirability of tying up assets in home equity and thereby make the composition of their assets less diversified.

Another proposed change is to exempt all capital income—that is, interest, dividends, and capital gains—from personal income tax. Although aimed at spurring more saving, the proposal would nonetheless affect the housing market. Let's go back to the initial example of a household contemplating using its own funds to purchase a $100,000 house. If capital income is tax-exempt, the household's taxable income will not fall when its interest income declines by $10,000, so its tax liability will not decline either. Therefore, an outright purchase of a house will not generate any tax benefits. Alternatively, if this household *borrows* $100,000 to buy the house, its taxable income will decline by $10,000 in the first year of the purchase, since it can still deduct the interest on its mortgage. In later years, as the tax deductibility from mortgage interest falls, the tax benefits from ownership will fall as well, and there will be no tax benefits at all when the mortgage is completely paid off.

Thus, making capital income exempt from personal income tax but allowing households to deduct mortgage interest will take away some of the tax benefits of homeownership. However, it probably won't affect homeownership rates very much because households that have paid off a good portion of their original mortgage can always take out a home-equity loan to recapture the tax benefits of mortgage-interest deductions. Therefore, this change in the tax code is not likely to encourage the rental market in housing. However, to the extent that it encourages households to have less home equity and larger investments in financial assets like mutual funds, it might lead to a more diversified composition of household assets.[10]

It is worth noting that combining the proposals—making capital income exempt from personal income tax and simultaneously eliminating the tax-deductibility of mortgage interest—would eliminate the tax advantage of owning rather than renting one's house. In this case, the tax code would no longer stand in the way of a larger rental market for single-family houses; that would be a boon for the allocation of residential real estate risks. The combined tax change would, however, do more than eliminate the tax code's bias in favor of owner-occupancy; it would also make investing in housing relatively less attractive, in comparison to investing in financial assets, than is the case today. Over time, adopting both proposals would tend to reduce the share of their savings that Americans put into housing.

---

[10]Depending on which financial assets the household buys, its risk could rise or fall.

CONCLUSION

Home equity is an important vehicle through which households save. This particular form of saving predominates in the United States because it permits households to reduce their federal income-tax liabilities. This article has highlighted one consequence of homeownership, and, by implication, of the tax code, that's often overlooked, namely, its effect on the allocation of residential real estate risks.

If the tax code didn't make homeownership so attractive, households would be less willing to invest such a large fraction of their lifetime savings in their own houses. Instead, houses would more likely be owned by individuals and businesses best suited to bearing the considerable risks of residential real estate. Furthermore, businesses that offered households the opportunity to invest in more diversified, and therefore less risky, portfolios of residential real estate would crop up.

Nevertheless, some proposed changes in tax policy that aim to curtail the tax benefits of homeownership may have ambiguous effects on the allocation of residential real estate risks. For instance, the proposal to eliminate the deductibility of mortgage-interest payments might stimulate the rental market in housing, which would be good for risk allocation, but it would also encourage people who choose to be homeowners to have smaller mortgages and own more equity in their homes, leading them to hold less diversified portfolios. Furthermore, proposed changes in tax policy that are directed at other issues may have consequences for the allocation of residential real estate risks. For example, the proposal to exempt capital income from personal income tax might encourage current owner-occupants to take out more home-equity loans and thereby reduce the level of equity in their own homes; that may lead to greater diversification by allowing them to hold other types of assets.

REFERENCES

Abraham, Jesse M., and Patric H. Hendershott, "Patterns and Determinants of Metropolitan House Prices, 1977-91," National Bureau of Economic Research Working Paper 4196, October 1992.

Kennickell, Arthur B., and Martha Starr-McCluer. "Changes in Family Finances from 1989 to 1992: Evidence from the Survey of Consumer Finances," *Federal Reserve Bulletin*, October 1994, tables 5-B, 7-B, and 10-B.

Laidler, David. "Income Tax Incentives for Owner-Occupied Housing," in A.C. Harberger and M.J. Bailey, eds., *The Taxation of Income from Capital*. Washington: Brookings Institution, 1969.

Mills, Edwin S., and Bruce W. Hamilton. *Urban Economics*. New York: HarperCollins, 1994.

Rosen, Harvey. "Housing Decisions and U.S. Income: An Econometric Analysis," *Journal of Public Economics*, February 1979, 41, pp. 465-73.

Shiller, Robert, and Allan Weiss. "Home Equity Insurance," National Bureau of Economic Research Working Paper 4830, August 1994.

U.S. Department of Commerce. *Fixed Reproducible Tangible Wealth in the United States, 1925-1989*. Washington, D.C., Government Printing Office, 1993.