

Homeownership: Economic Benefits*

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August 2010

Abstract

The homeownership rate is more than 50 percent in many developed countries, the number being as high as 73 percent in the US or 89 percent in Spain in 2007. This preference for homeownership, as opposed to renting, lead us to evaluate the benefits and costs associated to owning. We review the main economic factors that determine tenure choice. In particular, the main benefits of homeownership are the preferential tax treatment of owner-occupied housing services, the access to collateralized credit and the insurance role of owner-occupied housing against rental price risk. Houses, however, are subject to substantial transaction costs that render them bad instruments to shield consumption against negative shocks, particularly when houses prices are falling and owners mortgage debt is high.

Keywords: Homeownership, housing tenure, rental house price, user cost, tax treatment, collateralized borrowing constraints, idiosyncratic risk, house price risk, transaction costs, mortgages, utility maximization.

Glossary:

Homeownership rate: number of households that own the housing unit where they live as a fraction of the total number of households in the economy.

User cost (of owner-occupied housing): the costs of the services provided by an owner-occupied housing unit incurred by the household consuming those services.

Tenure choice: the decision to rent or own a home.

*This is an entry for the The International Encyclopedia of Housing and Home, edited by Smith, S.J.; Elsinga, M.; Fox-O'Mahony, L.; Ong, S.E.; Wachter, S., Elsevier (in press).

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1 Homeownership patterns

According to the 2007 Survey of Consumer Finances, 46 percent of aggregate household wealth in the U.S. economy is residential wealth (primary and secondary residences) and the homeownership rate is almost 73 percent.¹ Household characteristics vary by home tenure status as shown in Table 1. The median renter is 39 years old, while the median homeowner is older, 52. 40 percent of homeowners have a college degree but only 25 percent of renters. Earnings for the median homeowner (labor income before taxes and government transfers; labeled E in the table) are about twice as high as those for the median renter, \$51,418 versus \$24,887. Homeowners are also wealthier: the median wealth-to-earnings ratio for homeowners is almost 4 but a meager 0.21 for renters. Finally, homeowners hold a staggering 97.5 percent of aggregate household wealth in the United States. Briefly, the median homeowner tends to be more educated, has higher earnings and higher wealth and, although on average homeowners are older than renters, the features just described survived after controlling for age, as shown in Figure 1. Andrew, Haurin, and Munasib (2006) report similar differences between homeowners and renters in the U.K. after controlling for institutional differences with the US. According to our own calculations using the 2005 wave of the Spanish Survey of Household Finances, in Spain, 82 percent of households with positive earnings are homeowners, their mean income is about 1.4 times that of renters, they hold 97.2 percent of household aggregate wealth and their median wealth-to-earnings ratio is 9.15 compared to 1.05 for renters.

The left panel of Figure 2 shows homeownership rates for different age cohorts and various waves of the Survey of Consumer Finances. Homeownership increases with age until retirement, when it starts to decline. This life-cycle pattern of homeownership is also present in other countries, as reported by Chiuri and Jappelli (2003) and Scanlon and Whitehead (2004), but the drop in homeownership around retirement age seems to depend on country-specific financial arrangements. Moreover, aggregate homeownership rates are very different across countries, as shown in Table 2. For instance, in 2007 the homeownership rate in Germany was 56.5 percent but 89.5 percent in Spain.

In order to understand the various patterns in the data, across countries and over the life cycle, we need to understand, first, why owning may be preferred to renting and, second, the costs and consequences of owning residential stock. In what follows we build a simple model to highlight the most important factors that determine the tenure choice as we discuss several studies on the subject.

2 Benefits and costs of homeownership

2.1 The untaxed rents from owner-occupied housing

Let us consider a simple model economy where households enjoy utility from consuming non-durables and housing services. A given household lives for T periods and there is no uncertainty. c_t denotes nondurable consumption in period t , whereas the sum $(1 - x_t)f_t + x_th_t$ is total housing services, which can be either purchased in the market, f_t , or obtained from owning house, h_t ; x_t is

¹Here we define the homeownership rate as the percentage of households that own either their primary or secondary residence.

a homeownership indicator. a_t denotes financial assets. The discount factor is β . The household solves the following problem:

$$\max_{\substack{c_t \geq 0, x_t \in [0,1], \\ f_t \geq 0, h_t \geq 0}} \sum_{t=\kappa}^T \beta^{t-\kappa} u(c_t, (1-x_t)f_t + x_t h_t), \quad (2.1)$$

subject to

$$c_t + r_t^f f_t (1-x_t) + a_t + q_t h_t x_t \leq \widehat{w}_t + (1 + \widehat{r}_t) a_{t-1} + q_t (1 - \delta_h - \tau_h) h_{t-1}. \quad (2.2)$$

$$a_t \geq \underline{a}. \quad (2.3)$$

The after-tax wage and the after-tax return on financial assets are, respectively, \widehat{w}_t , which increases with age, and \widehat{r}_t . τ_h is the local property tax rate and δ_h is the depreciation rate for houses. q_t denotes housing prices and the rental price of housing is r_t^f . Equation (2.1) is (discounted) life-time utility, while equation (2.2) is the budget constraint with expenses on the left-hand-side and resources on the right-hand-side. Capital markets are perfect and the household is subject to a no-Ponzi scheme constraint, shown in (2.3). Rents from owner-occupied housing are untaxed. The rental price of housing, r_t^f , is:

$$r_t^f = \frac{q_t - \left[\frac{1}{1 + \widehat{r}_{t+1}} q_{t+1} (1 - \delta^h - \tau_h) \right]}{1 - \tau_y}, \quad (2.4)$$

where τ_y is a proportional income tax rate. The rental price varies with house prices and incorporates the fact that housing rental income is taxable. This specification can be interpreted as the user cost for a landlord who is neither liquidity constrained nor is subject to adjustment costs. The landlord can deduct local housing taxes from income taxation but must pay income taxes on rental income. This choice is consistent with the estimates in Sinai and Souleles (2005), who find that the house price-to-rent ratio capitalizes expected future rents, as any other asset. This expression is also a non-arbitrage condition stating that the real return to rental housing is equal to the real return on the alternative (financial) asset,

$$\frac{(1 - \tau_y) r_t^f (1 + \widehat{r}_{t+1}) + q_{t+1} (1 - \delta^h - \tau_h)}{q_t} - 1 = \widehat{r}_{t+1}. \quad (2.5)$$

The shadow price of services yielded by owning stock is known as the user cost of owner-occupied housing and, in this case, it is equal to:

$$uc_t = \frac{u_s(c_t, h_t)}{u_c(c_t, h_t)} = q_t - \frac{1}{1 + \widehat{r}_{t+1}} q_{t+1} (1 - \delta^h - \tau_h). \quad (2.6)$$

For households to be indifferent between buying and renting, the user cost of owner-occupied housing must be the same as the rental price. The user cost in this case is lower than the rental price because neither services from owner-occupied housing nor capital gains are taxed. Thus, the homeownership rate is 100 percent, and the life-cycle profile of wages does not affect the tenure decision since households can borrow against future income at no cost. However, if there were no differences in taxation households should be indifferent between renting and owning since services from rental housing and from owner-occupied homes are assumed to be perfect substitutes.

2.2 Credit constraints and access to collateralized credit

In a world with credit market imperfections, one of the main benefits from homeownership is that it provides access to collateralized credit. In reality, the available collateralized credit to borrowers is determined by his/her income and wealth. The empirical literature finds that wealth constraints are typically more important than income constraints when purchasing a home; see, for instance Linneman, Megbolugbe, Watcher, and Cho (1997) or Quercia, McCarthy, and Wachter (2003). Thus, we replace (2.3) with

$$a_t \geq -(1 - \theta)q_t h_t, \tag{2.7}$$

in the household's problem. This constraint says that households who want to purchase a new home must pay upfront a down payment, a fraction θ of the value of the house $q_t h_t$. Also, homeowners have a home-equity line of credit available with a maximum loan-to-value ratio of $1 - \theta$ at all times.

The user cost in (2.6) becomes

$$uc_t = q_t - \frac{\lambda_{t+1}}{\lambda_t} q_{t+1} \left(1 - \delta^h - \tau_h\right) + \frac{\mu_t}{\lambda_t} (1 - \theta)q_t, \tag{2.8}$$

where λ_t is the Lagrange multiplier associated to the budget constraint shown in (2.2) and μ_t is the multiplier associated to the borrowing constraint (2.7). If household labor earnings are sufficiently high or if the household has accumulated enough assets, the borrowing constraint (2.7) is not binding and $\mu_t = 0$ and $(1 + \hat{r}_{t+1}) \lambda_{t+1} = \lambda_t$. In this case, the household's user cost is given by expression (2.6), and the household becomes a homeowner. Since earnings increase along the life cycle, it should be the case that poorer and younger households are liquidity constrained, their user cost is higher than the rental price and they prefer renting to owning while they accumulate the down payment needed to buy a house—the findings by Haurin, Hendershott, and Wachter (1996), Linneman, Megbolugbe, Watcher, and Cho (1997), and Quercia, McCarthy, and Wachter (2003) indicate that younger and poorer households are credit constrained in the U.S. economy. Thus, a life-cycle profile in earnings coupled with collateralized borrowing constraints is needed to obtain the observed life-cycle pattern in homeownership rates, as well as the observed differences by education level. These two factors alone, however, are not sufficient to fully reproduce the life-cycle pattern of homeownership in the data, with homeownership increasing gradually with age (which would not be the case in this simple set-up). Thus, some idiosyncratic uncertainty is also needed.

Changes in θ imply changes in the maximum loan-to-value ratio for mortgages and, therefore, affect the number of credit constrained households in the economy as well as the homeownership rate. That is, the higher the down payment the wealthier the households who can benefit from the favorable tax treatment for owner-occupied housing. The minimum down payment varies across countries, as documented by Chiuri and Jappelli (2003), as well as over time, as argued by Quercia, McCarthy, and Wachter (2003), Chambers, Garriga, and Schlagenhauf (2009b), and André (2010), and its reduction implies an increase in homeownership rates as witnessed in recent years in many OECD countries.

2.3 The insurance role of owner-occupied housing

Idiosyncratic labor risk. Homeownership comes with certain economic benefits relating to its insurance role. To illustrate this point, let us assume that there is uncertainty regarding wages which follow some stochastic idiosyncratic process but housing prices are fixed. In this economy, homeownership comes with tax advantages but also shields consumption against income risk in two different ways: first, a fraction of consumption is independent of income risk and, second, owner-occupied housing provides access to collateralized loans as reflected in the constraint (2.7). The user cost becomes

$$uc_t = q_t - E_t \left[\frac{\lambda_{t+1}}{\lambda_t} \right] q_{t+1} \left(1 - \delta^h - \tau_h \right) + \frac{\mu_t}{\lambda_t} (1 - \theta) q_t, \quad (2.9)$$

which implies that households of the same age and education level may make different tenure decisions depending on their earnings history. This mechanism is present in Díaz and Luengo-Prado (2008, 2010), Chambers, Garriga, and Schlagenhaut (2008, 2009a, 2009b) and Li and Yao (2007), among others.

House-price risk together with uninsurable idiosyncratic labor risk. Owning housing stock also shields consumption against house-price risk. In this case, the expression for the rental price in (2.4) must include an expectation term, and the user cost becomes

$$uc_t = q_t - E_t \left[\frac{\lambda_{t+1}}{\lambda_t} q_{t+1} \right] \left(1 - \delta^h - \tau_h \right) + \frac{\mu_t}{\lambda_t} (1 - \theta) q_t. \quad (2.10)$$

Due to complementarity between nondurable consumption and housing services, there is a positive covariance for house prices and marginal utility, which lowers the user cost. In other words, homeownership helps hedge against house-price risk because it isolates (housing) consumption from changes in the rental price of housing services. This is the point emphasized by Sinai and Souleles (2005) as the main benefit of owning a place versus renting. This mechanism is present in Díaz and Luengo-Prado (2008), Li and Yao (2007), Li, Liu, and Yao (2009), Hryshko, Luengo-Prado, and Sørensen (2010), and Bajari, Chan, Krueger, and Miller (2010), among others.

2.4 The preferential tax treatment on owner-occupied housing and its consequences

Aside from the fact that owner-occupied housing services are not taxed, mortgage payments are tax deductible in many countries. As Hendershott and White (2000) and Hendershott and Pryce (2006) argue, this tax deductibility should not be seen as a major distortion but as a way of making this tax subsidy independent of the way home purchases are financed, equity or debt. To see this more clearly, let us go back to our simple economy (without earnings and price risk) and assume that there is one debt instrument, collateralized debt, m , and one asset called deposits, d . In this economy, $a_{t-1} = d_{t-1} - m_{t-1}$ is the net financial position at the beginning of any period t . Let \widehat{r}_t^d be the after-tax return to deposits and \widehat{r}_t^m the after-deductions interest rate on mortgages. Now, the borrowing constraint should be written as

$$m_t \geq -(1 - \theta) q_t h_t. \quad (2.11)$$

The user cost of a non-constrained household—expression (2.6)—depends on how it finances its purchases. A household that holds no debt evaluates the future cost of owning a place using the after-tax return to deposits, \hat{r}_{t+1}^d , whereas a household that finances its purchase with debt evaluates it using the after-deduction interest rate \hat{r}_{t+1}^m . If there is a positive spread, $\hat{r}_{t+1}^m > \hat{r}_{t+1}^d$, poorer households are penalized and they extract lower benefits from owning residential stock. Hendershott and Pryce (2006), using U.K. data, estimate that eliminating the tax deductability of mortgage interest payment has no significant impact on the aggregate homeownership rate but it reduces significantly the amount of outstanding debt (around 20 percent), due mostly to a shift in older households' portfolios from debt to equity.

The preferential tax treatment of owner-occupied housing services has costs which are of aggregate and dynamic nature. Inspecting (2.6) we can see that, *ceteris paribus*, a larger tax rate lowers the real return on the alternative asset, \hat{r}_{t+1} , which makes households accumulate more residential assets. This has an impact on the aggregate stock of business capital and the level of GDP. Gervais (2002) constructs a dynamic general equilibrium life-cycle economy (without idiosyncratic uncertainty) calibrated to mimic selected facts of the U.S. economy. He shows that, in the long run, taxing services of owner-occupied housing leads to lower homeownership rates, a lower aggregate residential stock, a higher stock of business capital, higher production of non-housing goods, and smoother consumption profiles over the life cycle and across goods. Overall, all households are better off in a world where imputed rents are taxed. In other words, the individuals' benefit from preferential tax treatment of owner-occupied housing is outweighed by the aggregate negative effect on the economy-wide portfolio. Gervais (2002) also supports the view that eliminating the mortgage interest deductability does not affect significantly the level of the aggregate stock, it rather changes the life-cycle profile of homeownership. Nakajima (2010) complements this view by showing that optimality dictates that taxes on business capital income should go hand in hand with taxes on owner-occupied housing.

2.5 The cost of homeownership: Illiquidity

A key feature of homeownership that we have not discussed yet is that selling housing stock involves substantial transaction costs. This ex-post illiquidity of owner-occupied housing is the source of most costs to homeownership. In the absence of transaction costs, buying and selling housing stock is not different from buying and selling financial assets. Buying and selling costs affect homeownership in different ways. Higher buying costs delay homeownership over the life cycle since it amounts to a higher down payment. Selling costs discourage young households from becoming owners since they face higher income uncertainty and move more frequently than older households. Selling costs also lowers the frequency at which homeowners upgrade or downgrade their houses, as shown by Díaz and Luengo-Prado (2008).

The interaction of illiquidity and uncertainty affects both the life-cycle pattern of homeownership and homeowners and renters' portfolios. Díaz and Luengo-Prado (2010) show that a combination of very persistent shocks to earnings, collateralized credit, illiquidity, and a rental market, are necessary to understand the observed weight of housing in households' portfolio. The illiquidity of houses leads homeowners to accumulate financial assets for precautionary motives, which implies that, overall, homeowners are wealthier than renters as seen in the data. (Also, richer households self-select into homeownership because of the tax advantages of homeownership).

Haurin and Gill (2002) estimate selling costs to be 3 percent of the house value plus a 4 percent

cost in current earnings. Díaz and Luengo-Prado (2010) calibrate transactions costs associated to selling a place to be about 6 percent of the value of the house, which is the typical fee charged by a realtor for selling the place. Li, Liu, and Yao (2009) estimate the overall cost of selling, including mortgage closing and moving costs, to be 15 percent of the house value. Díaz and Luengo-Prado (2006) use a life-cycle economy built to mimic selected aggregate features of the US and conduct an experiment to assess the importance of selling costs. They find that reducing selling costs from 6 to 0 percent increases homeownership significantly, specially among younger households that tend to move more frequently. The overall effect would be an increase of 20 percent in the homeownership rate.

3 Recent developments in the economy and their effects on homeownership benefits

In the last two decades, we have witnessed a major financial deregulation of mortgage markets in most developed countries which favored the entry of commercial banks into previously heavily regulated markets. As a result, many households gained access to collateralized credit and the homeownership rate increased over time (see Table 2). In the US, the homeownership rate has increased for younger households and retirees, whereas other cohorts have increased the size of their houses—see Figure 2. Table 3 shows that the amount of mortgage debt as percentage of GDP, has increased substantially over time. Thus, more households have access to the benefits of homeownership but also are more exposed to aggregate risk. As Green and Wachter (2007) argue, the financial innovations brought by deregulation imply that the mortgage market is not shielded against changes in the economic environment, as it used to be. This greater exposure to risk has little cost when the economy is booming and house prices are increasing, but may have a significant impact in downturns. For instance, interest payments on adjustable-rate mortgages may become unsustainable for a household with a large loan-to-value ratio.

There are recent studies that try to assess the differential effects of shocks for homeowners and renters in the face of a downturn in the economy accompanied by a fall in house prices, as witnessed in the last years. Hryshko, Luengo-Prado, and Sørensen (2010), using U.S. data, document that the ability of homeowners to insure against permanent negative income shocks, such as disability and displacement, varies with house prices and is particularly difficult for homeowners in periods of house-price depreciation, resulting in a severe expenditure drop for homeowners during such episodes. A similar finding is also reported by Li, Liu, and Yao (2009) who show that house-price declines have a lower effect on consumption when it is harder to access the mortgage market. Bajari, Chan, Krueger, and Miller (2010) estimate that, due to substantial transaction costs, most homeowners do not reduce their housing consumption in the short run after a fall in house prices and income, they rather reduce their non housing consumption and deplete their savings. That is, an ex-ante welfare increasing policy may have ex-post welfare decreasing consequences. However, when assessing the effect of house-price declines on homeowners welfare, one should take into account whether households can default on their mortgages as institutions such as foreclosure may attenuate part of this cost. Garriga and Schlagenhauf (2010) show that the recent upsurge in foreclosure rates can be accounted for by the house-price decline.

4 Final comments

Homeownership has tax advantages and it insures consumption against earnings and house-price risk. The major cost of homeownership is related to the existence of substantial transaction costs that prevent homeowners from adjusting their portfolio to smooth consumption. Moreover, the long term commitment implied by a mortgage can affect household behavior from labor supply (housing debt increases married women labor supply, e.g. Fortin 1995) and mobility decisions (homeowners being less mobile which could lead to higher unemployment as pointed out by Oswald 1996; this result has been challenged by many subsequent research, e.g. Green and Hendershott 2002) to investment decisions (households overinvesting in housing, Brueckner 1997, or reducing holdings of risky-assets because of mortgage commitments, Fratantoni (1998), and Flavin and Yamashita 2002), and even fertility and divorce (Haurin, Wachter, and Hendershott 1996, Bracher, Santow, Morgan, and Trussell 1993). The literature on the impact of homeownership on the economic and social behaviors, as well as outcomes (including that of offspring) is extensive, and Dietz and Haurin (2003) provide a nice review of the micro-level evidence. In general, homeownership is associated to good outcomes (higher success in the labor market, higher education achievement for children, better neighborhood, etc.) but Dietz and Haurin (2003) cast some doubt on some of these results as the standard methodology failed to control for unobserved differences between owners and renters in several cases. The events of recent years, a period of easy credit followed by a downturn coupled with house-price declines, have highlighted some of the dangers of overinvesting in housing and its broader consequences for the economy.

Table 1: 2007 Survey of Consumer Finances: Characteristics of homeowners and renters

	Pop. (%)	E (\$)	W/E	W (%)	Age	College (%)
Homeowners	72.95	51,418.44	3.69	97.49	52	40.30
Renters	27.05	24,887.22	0.21	2.51	39	25.25

E refers to median earnings, W/E is the median wealth to earnings ratio, W is the percentage of aggregate wealth owned by homeowners and renters, respectively.

Table 2: Homeownership rates for the U.S. and selected European countries

	1998	2001	2004	2007
Denmark	–	67.2	67.1	–
Finland	75.0	70.0	72.3	74.4
France	68.0	62.0	64.4	65.7
Germany	52.0	–	–	56.5
Ireland	84.0	83.0	83.0	79.2
Italy	82.0	83.0	81.7	81.9
Netherlands	61.0	57.0	–	66.9
Spain	90.0	92.0	89.2	89.5
Sweden	–	–	66.6	69.5
United Kingdom	75.0	72.0	–	74.3
United States	70.0	70.8	72.7	73.0

Source: Eurostat and Survey of Consumer Finances. The homeownership rate for the European countries is defined as the percentage of housing units occupied by their owners. The homeownership rate for the U.S. is defined as the percentage of households that own either their primary or secondary residence.

Table 3: Mortgage debt to GDP ratio (%) for the U.S. and selected European countries

	1998	2001	2004	2007
Denmark	75.0	74.7	86.0	92.8
Finland	29.5	31.0	38.2	45.7
France	20.0	21.7	26.0	34.9
Germany	51.9	53.1	52.4	47.7
Ireland	26.5	32.8	52.2	75.3
Italy	7.8	9.9	14.8	19.8
Netherlands	60.8	73.0	94.9	98.6
Spain	23.8	32.5	45.7	61.4
Sweden	44.5	46.9	51.8	57.0
United Kingdom	50.6	58.9	74.1	86.3
United States	52.7	60.5	76.1	86.7

Source: HYPOSTAT 2008, European Mortgage Federation.

Figure 1: Households characteristics. 2007 Survey of Consumer Finances.

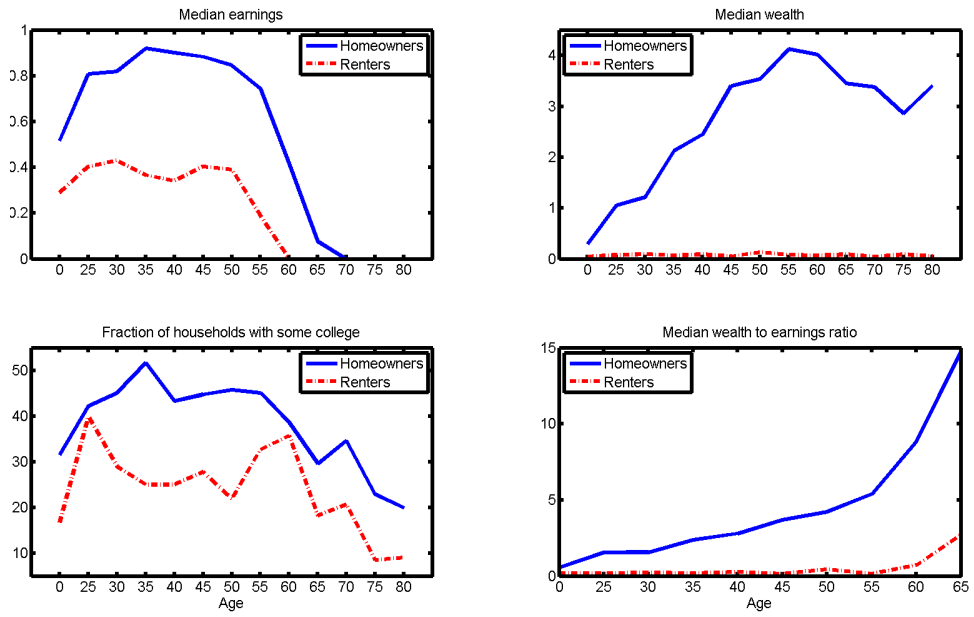
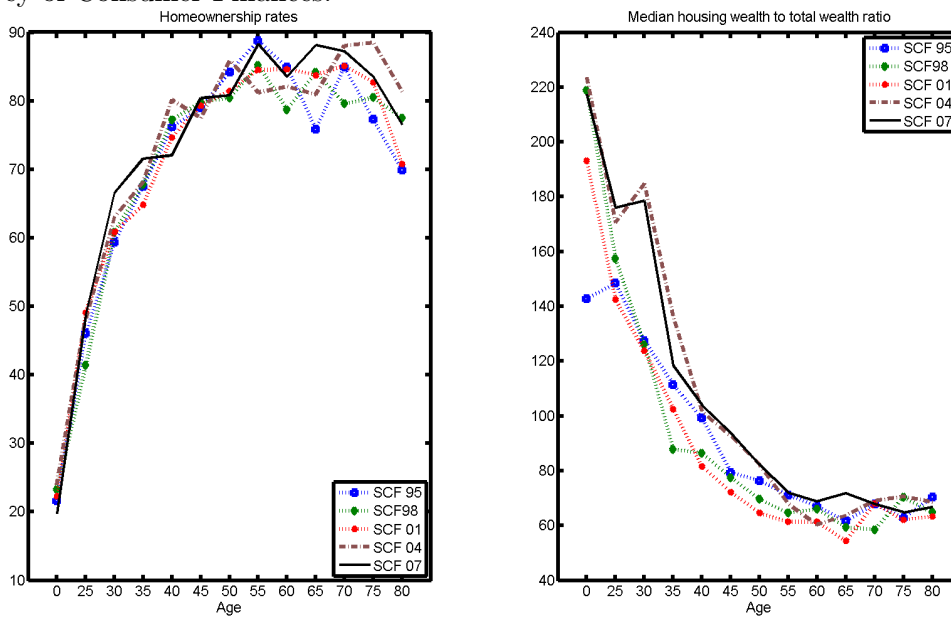


Figure 2: Homeownership rate and median house wealth to total wealth ratio for homeowners. 2007 Survey of Consumer Finances.



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