Chapter 13

The Housing Market

Everyone needs shelter. According to psychologist Maslow's (1943) hierarchy of needs, it is only after we satisfy the physiological needs (i.e., health, food, clothing, and shelter) that we worry about social needs such as safety, love, self-esteem, or self-actualization. The Universal Declaration of Rights of Man (1948), Article 25-1 states:

> Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing, and medical care and necessary social services, and the right to security in the event of unemployment, sickness, disability, widowhood, old age or other lack of livelihood in circumstances beyond his control.[1]

Not only is housing essential for life, it is also one of the most regulated, taxed, and subsidized goods in the world. It is subject to extensive government intervention because of market failure. Market failure is due to both positive and negative externalities that are inherent in the housing market. These come about because residents simultaneously influence and are influenced by their neighborhoods, their neighbors, and the decisions of local government concerning the quality of schools and other public services. The (sometimes questionable) tastes and decorating decisions of previous owners and neighbors, as well as neighborhood amenities (or

[1] Office of the United Nations High Commissioner for Human Rights (1948).

disamenities), create a bundle of characteristics that cannot be separated from the physical quality of a house.[2]

The first question we answer is whether the supply and demand model is valid in the analysis of the inefficiency of the housing market. If it is, we must decide how to measure the price and quantity of housing before we are able to consider the effect of commuting, the decisions to buy or rent, as well as the questions of segregation and affordable housing.

Why Is the Housing Market Inefficient?

An efficient market has three components: (1) a large number of buyers and sellers, (2) homogeneous goods, and (3) the distribution of perfect information about the quality of the good. Some authors assert that traditional supply and demand models cannot explain the housing market because: (1) there is a limited number of buyers and sellers in a given period and for a particular market, (2) every house is a heterogeneous product, and (3) not even the sellers are always aware of hidden defects in their house.

But is there ever a perfectly efficient market? Evans (1995) calculated that the stock market comes closest at approximately 99% efficiency, but the housing market is only 90% efficient. An inefficient market means that the market does not completely determine the price. Psychology, search strategies, and negotiating ability of buyers and sellers are also important. To decrease search costs, sellers have recourse to real estate agents who work for commission. These agents help the seller determine the prices because they have information about comparable sales.

Despite the evident inefficiency of the market, economists continue to use supply and demand to explain fluctuations in prices. Houses are treated like any other asset. Rather than determined by the market, the "price" is in effect a distribution of prices, where the mean of the distribution represents the equilibrium for a specific house. One way to assess such a distribution is by using "thick" supply and demand curves (Figure 13.1). At each quantity, there is a bell-shaped distribution of potential prices. The middle of the distribution is the estimated value of the property. The tails of the distribution represent the most probable range of selling prices, according to whether the seller or the buyer is the better negotiator. A 10% margin of error on both supply and demand means that a property estimated at a value of $100,000 may sell at any price between $90,000 and $110,000.

Besides price, the expected quality of life and average after-tax real income are the most important variables in a regression equation used to estimate the aggregate demand for housing. Housing supply is influenced

[2] Minford, Ashton, and Peel (1988); Roberds (1992); Evans (1995); Archer, Gatzlaff, and Ling (1996).

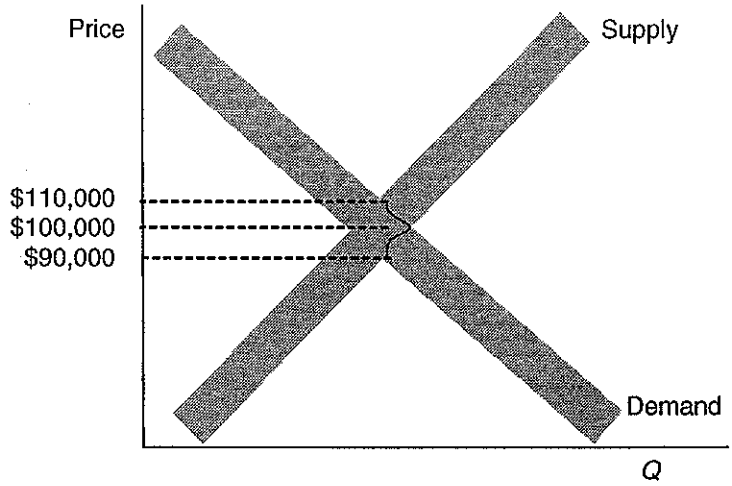


Figure 13.1 Thick supply and demand curves for housing.

primarily by construction costs and the supply of undeveloped land. There are in effect two housing markets: one market for housing stock and one for the flow of housing services (utility to consumers from the consumption of certain types of houses). Models of housing stock analyze either the median sales prices along with the total quantity of houses, or markets for specific types of housing (corner apartments facing south, two-bedroom ranch houses, mobile homes at the interior of a well-kept park, or Victorian-style houses at the urban fringe). In contrast, the models of the flow of housing services describe the opportunity cost of housing.[3]

Housing Services

Because of the inherent heterogeneity in the housing market, researchers use the nebulous concept of "housing services" as the "quantity." Conceptually, two units of housing services provide twice the utility as one unit of housing services.

Think About It...

Find the asking price of housing in your neighborhood. Compare these prices with those in adjacent

[3] Case and Shiller (1987, 1989); Rothenberg et al. (1991); Arnott (1994); Evans (1995); Rouwendal (1998).

neighborhoods or jurisdictions.

Why is there a difference?

Because of the average quality of housing? The quality of the neighborhood? School quality? Incomes of residents?

Because of proximity to employment? To natural amenities? To recreational facilities?

Housing Prices

Reports of soaring real estate prices make eye-catching headlines. In reality, they mean very little. For residential properties, the most widely reported price trends are compiled by the National Association of Realtors. Their price trends consist of the median value of existing single family housing as reported by the transactions negotiated in a number of metropolitan areas. However, these sales prices are not standardized for any characteristics of the dwellings bought and sold. Real estate prices can "soar" merely because regions implemented more stringent housing codes.

Two concepts of the term "housing price" correspond to the two types of housing markets. For the ***stock of housing***, price is the amount paid for the average dwelling. For owner-occupied houses, the price is simply the purchase price. For rental units, the monthly rent is the price.

The price for the ***flow of services*** is more difficult to estimate. Because a tar-paper shack represents fewer "housing units" than a 17-room mansion, for instance, we need some method of defining the price per unit of housing services. In fact, we have two principle techniques: repeated sales price index and the hedonic regression technique.

The ***repeat sales price index*** (Bailey, Muth, and Nourse 1963; Case and Shiller 1987) is one way to standardize changes in house prices. Researchers avoid the difficulty of specifying and measuring the various characteristics of homes by creating an index of average sales prices of homes sold more than once over a specific time. The increase in the price of one home over a given period more accurately measures housing inflation. This method eliminates properties that have only been sold once during a specific period as well as the houses resold after undergoing substantial renovations.

The method has some drawbacks. First, it ignores potentially valuable information when it excludes properties. In addition, although it excludes properties whose physical characteristics have changed between sales, very few datasets pinpoint neighborhoods endowed with a newly established

crack house, a new golf course, or an improved school system. The market prices, on the other hand, will reflect these changes. Finally, according to Akerlof's (1970) Market for Lemons, houses that are sold repeatedly probably have structural defects. To the extent that the repeat sales price index is dominated by these "lemons," this index would give lower price estimates for structurally solid houses. Regardless of these drawbacks, the repeat sales price index may be the only viable way to estimate house price inflation within a community.[4]

The ***hedonic regression technique*** is the second way to statistically standardize the prices of both houses and housing services. This technique results in a distribution of prices for urban housing dependent on the amenities of the house and its surrounding area.

Think About It...

Determine the average wage for your (intended) occupation from http://www.bls.gov/bls/blswage.htm and multiply that by the number of years you plan to work. The average family spends 26 percent of its income on housing.

Plan the most basic single-family (starter) house: How many rooms? How many square feet does it have? How many floors? Basement? How many bedrooms? Bathrooms? Type of garage? How much yard space? Find a similar home in your area for sale. What is its price?

Use a mortgage calculator on the Internet to determine the total amount of interest you will pay at the current rate. Also check to determine the annual cost of homeowners' insurance in your area.

What proportion of your total earnings is your basic house (plus interest and total insurance)?

Now, how much would you pay to upgrade your basic home?

For one more bedroom?

For a fireplace?

For an increase of 100 sq. ft.

[4] Barnett (1985); Manning (1989); Case and Quigley (1991); Gyourko and Voith (1992); Muth (1996).

For 100 sq. ft. more of yard space?

For one more bathroom?

For central heating or air conditioning?

_____?

_____?

Housing Hedonics

The hedonic technique quantifies the effect of various housing and neighborhood characteristics on house prices. Market prices attributable to specific features reflect consumer preferences, as well as the installation costs. This technique uses regression analysis to explain variations in market prices for single-family homes. The dependent variable is the transaction price, or some other estimate of market value. Independent variables are features such as the square feet of living space, the lot size, the number of bedrooms, the age of the structure, the presence or absence of a swimming pool, a fireplace, a deck, a porch, or other characteristics. Researchers often add independent variables to account for the value of various neighborhood amenities.[5]

Amenities and Housing Values

Brueckner, Thisse, and Zenov (1999) identified three types of amenities that affect housing values: ***natural amenities*** (such as green spaces, proximity to bodies of water, or other scenic landscapes), ***historic districts***, and ***endogenous amenities*** (such as quality education and other publicly provided services, proximity to transit routes, and proximity to nice restaurants or other urban facilities). Changes in land prices due to natural amenities are surprisingly consistent across studies. Green space, waterfront, and landscaping all add a fairly consistent amount to home values.

Green Is Gold for Homeowners

Amenities include open spaces even without proximity to scenic waterways. Rural areas provide green space

[5] See Cropper et al. (1993) for a comparison of the hedonic model and multinomial logit model for estimating amenity attributes; Goodman and Thibodeau (1995).

and tranquility, easier access to recreational opportunities, and absence of urban disamenities. Proximity to small neighborhood parks can affect the value of a home up to 1500 ft. away, according to studies using data from both Greenville, South Carolina, and Portland, Oregon. Properties adjacent to golf courses around San Diego, California, sold at an average premium of 7.6 percent. Even if the residents do not play golf, they "bought" low population density, as well as privacy. Green spaces enhance residential land values, but they do not always affect the values of industrial or commercial land.

Peiser (1987), Do and Grudnitski (1995), Bender et al. (1997), Espey and Owusu-Edusei (2001) Irwin and Bockstael (2001), Lutzenhiser and Netusil (2001)

Benefits of Cocooning

When a population ages, the people tend to "cocoon," that is, to spend more time and more money renovating their homes and yards. Des Rosiers et al. (2002) noted that cocooning activities can add significant value to a house.

Data from sales of 760 single-family homes in Quebec between 1993 and 2000 shows that the presence of trees between two properties increases their values, especially if there are many retired people in the neighborhood. Well-groomed lawns, flower gardens, rock gardens, and hedges also command a sizeable market premium. Hedges boosted housing values by 3.9 percent on average, a landscaped patio raised house values by 12.4 percent, and landscaped curbs, 4.4 percent.

Des Rosiers et al. (2002)

How Much Is Waterfront Worth?

The aesthetic and recreational advantage of waterfront properties falls rapidly with distance, becoming asymptotic to some minimum value. Lakefront properties in central Texas and in northwestern Wisconsin commanded prices 22 percent greater than otherwise equal properties. A view of the ocean in Bellingham, Washington, increased the market price of an otherwise comparable home by between 8 and 60 percent, depending on the quality of the view. The value of an ocean view decreased with distance from the water.

Land-use restrictions that limited residential development around Chesapeake Bay, Massachusetts, were adopted to protect the coastal environment and water quality, but they had a substantial effect on housing prices. These restrictions increased prices for houses with water frontage from 46 to 62 percent. Prices for housing without frontage increased from 14 to 27 percent. Prices for housing near but not in the critical areas increased from 13 to 21 percent because of the ecological restrictions.

Smith (1993), Landford and Jones (1995a, 1995b), Doss and Taff (1996), Benson et al. (1998), Spalatro and Provencher (2001)

Historic districts affect housing values if they change the demand. Current residents are tempted to move for the following reasons:

- The property that they were renting was converted to owner-occupied housing.
- A higher sale price for their homes makes selling more desirable.
- The consequent property tax increases drive older, fixed income residents from their neighborhoods.

Higher income people may move into historic districts, but unless these districts attract new residents to the city, the higher demand (and prices) for housing in this area only decreases demand (and prices) for housing outside the district. The creation of a historic district is generally accompanied by better public services in the district, such as greater police protection, more frequent garbage collection, and better maintained streets. Thus, it is difficult

to distinguish whether the increased housing values are due to better services or because of the location within the historic district itself.

History Pays

Historic districts in many European cities generally increase land values but this does not always happen in the United States. Since the 1980s, cities in the United States have tried historic preservation of residential and commercial property to revive the declining metropolitan areas. The local housing market conditions and zoning rules determine whether an historic designation will increase or decrease property values.

For instance, a study of nine Texas cities determined that historic designation increased property values from 5 to 20 percent. Likewise, the designation in four of the six preservation districts in Sacramento, California, caused property values to rise. But the historic designation in Aurora, Illinois, only increased housing prices by about 6–7 percent, and the one in Elgin, Illinois, made no statistically significant impact on prices.

Coffin (1989), Clark and Herrin (1997), Brueckner, Thisse, and Zenou (1999), Leichenko, Coulson, and Listokin (2001)

School Quality and Property Values

The quality of public goods is capitalized into property values just as the Tiebout hypothesis predicts. Residents of Fresno County, California, value attributes of schools more than environmental quality. Property values around Dallas, Texas, reflect student test scores rather than school expenditures per pupil. In Ohio metropolitan areas, each percentage point increase in the number of ninth grade students who pass the statewide proficiency exam increased house

prices by an average of 0.5 percent. Because pass rates ranged between 6 and 89 percent, estimated house prices varied greatly due to this variable alone. The fact that the better schools had a larger population of whites constitutes another reason. However, studies from Charlotte, North Carolina, and Los Angeles County, California, found that school quality and not race affected housing values.

Similarly, unpopular decisions taken by school district administrators decrease home prices and thereby the property tax base used to fund education. For example, a proposal to save costs by creating a 12-month school year in Las Vegas, Nevada, reduced home prices by about 5.2 percent. The expected savings did not compensate for the loss caused by the decline in property prices. Likewise, in 1987, an unpopular school redistricting plan in Shaker Heights, Ohio caused social and racial problems, disrupting neighborhood schools so much that within seven years, housing values had fallen by 9.9 percent or $5738 for the average value home.

Jud and Bennett (1986),
Haurin and Brasington (1996),
Hayes and Taylor (1996),
Clark and Herrin (2000),
Clauretie and Neill (2000)

Neighborhood Churches: A Blessing or a Curse?

Proximity to a neighborhood church affects housing prices. In Chula Vista, California, the presence of a church significantly decreased sales prices of houses up to 850 ft. away. However, this finding is not national. Property values were higher, all else equal within a half-mile radius of a church in Henderson, Nevada, a suburb of Las Vegas. Carroll, Clauretie, and Jensen (1996) quip that because residents of Henderson live so close to

"Sin City" (Las Vegas) they prefer a church be built on vacant lots rather than a neighborhood casino.

Do, Wilbur, and Short (1994),
Carroll, Clauretie, and Jensen (1996)

Crime Steals Housing Values

Reductions in the crime rate increased land values in Boston, Massachusetts, and Jacksonville, Florida. The Jacksonville study used data from fiscal year 1994–1995 and found that homes in high crime areas were discounted by about 39 percent compared to otherwise identical houses elsewhere.

Epple and Sieg (1998),
Lynch and Rasmussen (2001)

Disamenities and Land Values

The presence of a noxious or even potentially bothersome site decreases the demand for nearby land, causing prices to fall. Undesirable effects of neighboring land include health risks (such as pollution, allergens, and noise) and blots on the landscape by the presence of unaesthetic structures. These negative effects translate into lower values for adjacent property. This impact decreases with distance.[6]

Pollution Fouls Property Values

Air quality affects house values. In the Los Angeles basin, a 20 percent improvement in average visibility increased housing values by between $875 and $3178 per year. Proximity to hog farms in southeastern North Carolina reduced home prices by up to 9 percent

[6] Farber (1998).

depending on the distance from the house to the feeder lot and the size of the facility.

Noise also lowers land values, but the effects dissipate rapidly. A study of railroad proximity in Oslo, Norway, found that two identical houses, one situated 65 ft. from a railroad line and the other situated 328 ft. away, differed in price by about 182,000 NOK, or $26,093. In Kingsgate, a northern suburb of Seattle, Washington, the effect of highway noise vanished for houses 1000 ft. from the road.

The price of houses located 300 ft. from underground storage tanks (whether they leaked or not) decreased prices by 17 percent in Cuyahoga County, Ohio. Electric transmission lines also decrease property values because of the visual externalities of the transmission towers.

Palmquist (1992), Hamilton and Schwann (1995),
Palmquist, Roka, and Vukina (1997),
Simons, Bowen, and Sementelli (1997),
Beron, Murdoch, and Thayer (2001),
Strand and Vagnes (2001)

Amenities and Household Sorting

An airport can be an amenity or disamenity. Proximity to the Reno–Sparks airport (Reno, Nevada) had a significantly negative value on properties. The average home in areas where noise levels could reach 65 db or higher lost $2400 of its value compared to equivalent homes in quiet neighborhoods. Proximity to airports and airport noise decreases housing values by an average 0.65 percent. This number has been consistent for several decades and in a number of Western countries. In contrast, improved access and employment opportunities of living close to the airport increased residential values in Manchester, United Kingdom.

The proximity to a nuclear power plant could surprisingly create a premium. At Diablo Canyon, California, for example, there is a premium paid for houses within a radius of 23 miles from the plant. The area surrounding the plant is less urban and offers more

green space. Negative impacts from perceived risks did not overwhelm the positive attributes of more green space.

Uyeno, Hamilton, and Biggs (1993), Clark et al. Herrin (1997), Tomkins et al. (1998), Espey and Lopez (2000)

Housing Supply Functions

Four features set housing supply apart from the supply of other goods:

1. Houses are costly to build and, therefore, a risky investment.
2. Housing is a durable good.
3. Two absolutely identical houses are still different because of their locations.
4. Once a house is produced, it is impossible to move it along with its neighborhood amenities.

In addition, housing supply comes from three types of economic actors, each of which reacts to different incentives: (1) builders of new home and rental agencies, (2) current homeowners, and (3) public agencies. New home builders and rental agencies are firms that maximize profits. Builders must provide the type and quality of housing that new-home buyers want under the existing building codes. Rental agencies decide the amount of maintenance on the basis of their expected rate of return and rental housing codes.

Homeowners respond to incentives that maximize either their incomes or their utilities. These homeowners may lease part of their houses, thereby increasing the supply of rental units. Homeowners also determine the optimal amount of maintenance or rehabilitation in which they should invest, and thereby influence the depreciation rates on existing housing. In fast-growing housing markets, homeowners are likely to spend more on the improvements because they are certain of an increased return on their investment. Between 1993 and 2002 for example, the funds devoted to home improvements totaled between 40 and 50% of the spending for new single-family and multifamily dwellings. We investigate the incentives of government in providing housing later in the chapter.[7]

[7] Bajic (1991); Montgomery (1992); Mayer and Somerville (1996); Hakfoort and Matysiak (1997); Blackley (1999); DiPasquale (1999); Fergus (1999); Pryce (1999); United States Bureau of Census (2002).

Housing Demand

Increases in the demand for housing come from one of two sources: in-migrants or new householders. Both of these components are affected by the city's business cycle and the age of the householder. During a recession, few migrate. Rather than form new households, many new householders choose cohabitation (sometimes with their parents). The reverse is true when jobs are more plentiful and higher paying.

Housing Elasticity

Housing supply is more price inelastic in the short run than the long run. Long-run elasticity estimates vary from between 1.6 and 3.9 in the United States, to 6.0 in The Netherlands. Supply is less elastic during economic booms than during economic slumps. New housing starts are as much a function of weather, land, and other input costs, credit availability and regulatory-imposed delays as they are of house prices.

The price elasticity estimates for owner-occupied housing range from −0.09 (Italy) to −0.73 (Tokyo metropolitan region). Price elasticities for the U.S. housing market range from −0.32 to −0.51. Income elasticities range from 0.31 to 0.65. However, the variance in income is also an important determinant of demand. A 10 percent increase in the variability of income reduces homeownership by the same amount as a 5 percent decrease in income.

Haurin (1991), Mayer and Somerville (1996), Hakfoort and Matysiak (1997), Haurin and Chung (1998), Blackley (1999), Fergus (1999), Pryce (1999), Nese (1999), Tiwari and Hasegawa (2000)

According to the ***life cycle hypothesis***, age groups view changes in household formation differently. The 15- to 25-year-old people would rather not live with their parents or friends if the cost of housing and their incomes permit. Housing costs, race and ethnicity, health problems, and an urban or rural location also influence the need for independence. Likewise,

decreases in marriage rates and increases in divorce rates increase the demand for housing.

The demand for low-density housing declines with family size but rises as age and incomes increase. High apartment rents increase the demand for owner-occupied single-family homes because these are substitute goods. Similarly, higher house prices increase the demand for high-density rental apartments.[8]

Think About It...

Do you own or rent? What influenced your housing decision? Do or did your parents own or rent?

What about your grandparents?

What would cause you to change your tenure choice?

Tenure Choice

Housing tenure refers to the contractual arrangement by which someone is allowed to inhabit a specific dwelling. The two main forms of housing tenure are owner occupancy and tenancy, where rent is paid to the actual owner or landlord. ***Tenure choice*** (choosing to rent or own) depends on a comparison of the net marginal benefits, and depends principally on the wealth of the family and the preferences of the household, which vary with age.

Owner-occupied housing is unique because it is both an investment good and a consumption good. As an investment, housing often comprises the largest portion of a household's asset portfolio. Consumption of and investment in housing are intricately related to a household's savings decisions. Nevertheless, only a small fraction (20%) of young people who leave their parents' home to live as a couple can start out by purchasing their own homes. Homeownership is greatest among older "nest leavers" with higher incomes, those whose parents are homeowners, and those who form a partnership. Those whose parents are homeowners are more likely to become homeowners themselves and to do so more quickly than those whose parents rented. The intergenerational effects favoring home ownership reflect the transfers of resources from parents to their adult children as well as the adult child's own tastes and ambitions.

[8] Mills (1991); Haurin, Hendershott, and Kim (1993); Skaburskis (1999); Harding, Miceli, and Sirmans (2000); Garasky, Haurin, and Haurin (2001).

Older people sell their homes and rent when they need to become more financially liquid, often so that they can leave a significant inheritance or pay their medical bills. Housing wealth is often treated as precautionary savings and is spent only after much of the other financial assets have been liquidated.

The amount of the down payment required by mortgage lenders constrains a household's tenure choice. In The Netherlands, people do not need to accumulate financial wealth before they purchase their homes because buyers do not need a down payment. Where there are no borrowing constraints, tenure choice affects the level of financial wealth; if people are not renting, they are investing more in home equity. In the United States, borrowing constraints are more important than potential earnings in the tenure decision. Borrowing constraints reduce the home ownership by as much as 10%–20%.

In 1940, when the United States federal income tax rates were much lower, only 40% of the dwellings were owned by the occupants. This percentage was 67% in 1999. This increase in home ownership is due to a change in borrowing costs and greater tax advantages. The Veterans Administration Mortgage Guarantee Program, started after World War II, brought down both the mortgage interest rates and the required down payments, thereby increasing the number of homeowners.[9]

Why Do Parisian Rents Rise with Unemployment?

Blondel and Marchand (1997) observed that apartment rent in exclusive neighborhoods in Paris is lower than in less elite neighborhoods. The discrepancy in rents reflects the risk of nonpayment. If the renter does not pay the monthly rent, the landlord cannot pay back the loan on the apartment and may lose that investment. The risk of nonpayment depends on the financial solvency of the household: employment status, average income, whether the tenant is foreign, and the probability of divorce. As the financial solvency of

[9] Sweeney (1974); Boehm, Herzog and Schlottmann (1991); Haurin (1991); Dusansky and Wilson (1993); Clark, Deurloo, and Dieleman (1994); Jones (1995, 1997); Gyourko and Linneman (1996); Muth (1996); Di Salvo and Ermisch (1997); Goss and Phillips (1997); Green and White (1997); Haurin, Hendershott, and Wachter (1997); Haurin and Chung (1998); Henley (1998); Withers (1998); DiPasquale and Glaeser (1999); Kan (2000); Green and Hendershott (2001); Hochguertel and van Soest (2001).

the households decreases, the rental rates increase.

In France, as in many states in the United States, insolvent tenants are difficult to evacuate. Even if a court trial favors the landlord, the landlord cannot eject a nonpaying renter during winter months. Because of the difficulty of expulsion, poor households pay relatively higher rents than the rich.

Blondel and Marchand (1997)

Renters' Stats

A total of 36 percent of U.S. households rent. Essentially, six groups constitute the demand for rental housing:

- Families: 17 percent
- Lifestyle renters: 21 percent
- College graduates who are starting out: 26 percent
- Black renters: 15 percent
- Elderly life cycle renters: 10 percent
- Struggling blue-collar workers: 11 percent

Renting attracts those under 25 years of age and those past 75 years old. Renter incomes average 54 percent of homeowners. The rental payments represent 27 percent of their income on housing, compared to 21 percent for homeowners with mortgages. Renter households are smaller than those of homeowners. 33 percent of the renters are single, compared with 20 percent of the homeowners. Single parents are more likely to rent than own.

Varady and Lipman (1994)

Home Ownership and Community Stability

The existence of a large proportion of homeowners has a positive effect on a community. Home ownership

increases the stability of a household, reducing unemployment rates, and the mobility of the family. Homeowners vote more often, they are politically active, and thus they affect social changes over time. They also invest in local amenities and social capital, thereby improving the quality of life of their community. Statistically, children of homeowners stay in school longer and their daughters are less likely to have children as teenagers.

Public policy enthusiastically promotes home ownership because homeowners are civic-minded and contribute to the welfare of the community. Instead of moving, unemployed homeowners are more inclined to search for a job more intensely to make their monthly mortgage payments. This reduces unemployment duration. Because home equity increases the wealth of the homeowners, if necessary, they could borrow against the asset and wait for a better job.

Clark, Deurloo, and Dieleman (1994),
Goss and Phillips (1997),
Green and White (1997), Henley (1998),
DiPasquale and Glaeser (1999)

Think About It...

In your city, where do high-income people live—in the suburbs or near the central business district? Where do the poorest people live?

Compared with the suburbs, does the central business district offer more cultural or natural amenities? Historic places? Upscale dining establishments? Theater or other recreational activities?

Do people of the same ethnicity seem to congregate in the same areas? Which ethnic groups seem to cluster together?

Income Differences in Housing Location

In the United States, middle- and high-income households generally prefer the suburbs. However, in many European, Latin American, and Asian cities, luxury apartments and townhouses cluster near the urban center. Brueckner, Thisse, and Zenou (1999) theorize that the geographic distribution of different income groups depends on the location of amenities. If the center provides more amenities than the suburbs, the rich will prefer life in a central location. If, in contrast, the center has few amenities, the rich will prefer suburban life.

In Paris, London, and Amsterdam for instance, the incomes of the central city residents are higher than those in the suburbs. The same pattern holds for Lyon (the second largest metropolitan area in France), Caen, and Nancy, but most French cities conform to the United States pattern. Brussels, Belgium, replaced much of its historical center with new office buildings to house the European Union agencies, causing an exodus of the rich toward the suburbs, as in the United States.

Although the rich are attracted by low housing prices in the suburbs, everything else equal, they need to account for the high opportunity cost of time that significantly increases their per-mile commuting costs. Amenities are also normal goods, and the marginal value of amenities increases sharply with income. Thus, the affluent value accessibility to an amenity-rich CBD more than do the poor, to decrease travel time. When the CBD does not offer many amenities, it cannot attract high-income residents.[10]

Residential Succession

In models with both high- and low-income groups, housing is constructed at one distance for high-income consumers and at a distance closer to the CBD for low-income consumers. The high-income housing is first occupied by high-income consumers and then filters to low-income consumers before it is abandoned. Conversely, low-income housing is only occupied by low-income consumers before being abandoned.

Residential succession examines how occupancy of one housing unit passes from one income or demographic group to another. Two models explain this process. The ***filtering model*** (also known as the Natural Evolution Theory of Urban Expansion) relies on the fact that both housing quality and quantity are normal goods; that is, as incomes increase, households consume greater amounts of housing services. Over time, there is a decline in the quality of housing, which compels a higher income

[10] Fujita (1989); Madden and Chiu (1990); Braid (1991); Assadian and Ondrich (1993); Polèse, Perez, and Barragan (1997); Bruekner, Thisse, and Zenou (1999).

household to move to a nicer and more spacious house. A household from a lower income group will move into their house, which is in better shape than the one they left behind. This causes housing units to filter down to a lower income group. See Figure 13.2. Improved transportation arteries facilitate this trend as highlighted in the box entitled *Commuting, housing, and labor markets.*

Commuting, Housing, and Labor Markets

Commuting ties together urban land uses, labor markets, residential neighborhoods, and transportation networks. Households are willing to pay a premium for accessibility. According to Quigley (1985), to save 1 hour of commuting time by car per month, households were willing to pay about 62 percent of the average pretax hourly wage per month (about $2.29) in higher rent.

If a large proportion of suburban residents work in the CBD, these suburbs often provide good commuter rail access. These residents own fewer cars and pay 6.4 percent more for housing than similar neighborhoods without commuter rail access.

The introduction of a transit system increases density near the transit line and decreases density elsewhere. If the change in transportation system causes an expansion of the city beyond its former economic borders, the expansion will be only in areas near the transit line.

Quigley (1985), Steen (1986), Voith (1991a, 1991b)

In contrast, the ***externality theory*** emphasizes the fiscal and social environments of city centers, the neighbors' income levels, and racial composition in explaining housing turnover. A neighborhood initially inhabited by high-income residents could, for example, experience an influx of low-income households as their incomes trend upward. These new households lower the perceived quality of the neighborhood, decreasing the number of people who are willing to bid for housing. Higher income groups "vote with their feet" for neighborhoods populated by households more to their liking. If the externality effect is strong enough, the neighborhood may "tip" from high income to low income.

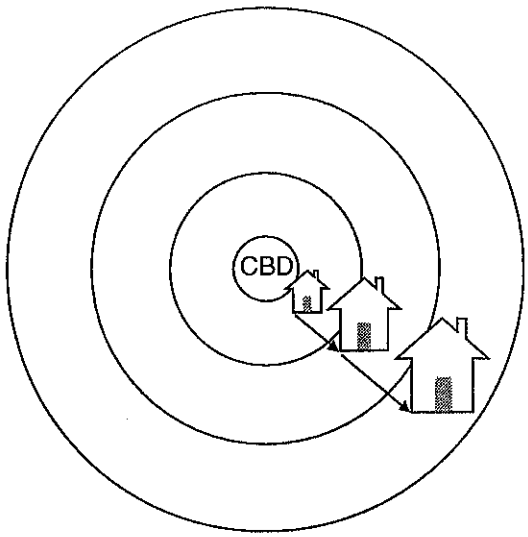


Figure 13.2 Filtering theory of residential succession.

If the tipping explanation holds, then the construction of low-income housing may be an efficient method of providing affordable housing. However, if the filtering model is correct; then housing policy specifically aimed at low-income households is less necessary.[11]

Segregation and Discrimination

DeRango (2001) noted that housing in the United States is more segregated now than it was in 1860, before the Civil War. If people could find more jobs by moving to the suburbs, why do they not move? Why does segregation persist? Is it the result of discrimination? Perhaps, but not necessarily.

Four hypotheses try to explain segregation:

1. Interracial differences in income, perhaps due to discrimination in the labor market or inadequate schools, restrict the low-income residents (nonwhites) to inferior quality housing and neighborhoods, whereas higher income groups (whites) are able to move to new housing as the filtering hypothesis predicts.
2. Different ethnic or cultural groups voluntarily sort themselves into specific neighborhoods.
3. Racial steering by rental agents and realtors limits the choice of their clients in only showing them housing located in neighborhoods predominated by households of similar race and ethnicity.

[11] White (1986); Coulson and Bond (1990); Voith (1991a, 1991b, 2000).

4. Local housing and zoning regulations that (inadvertently) cause higher housing prices effectively bar low-income households from their jurisdictions.

Racial segregation could either help or hinder the economic achievement of minorities. According to Wilson (1987), racial segregation may ensure that minorities have middle-class role models live among them who serve as examples. The absence of these models deprives the young of a mentor who could encourage them. But on the other hand, segregation becomes an obstacle that impedes access to information, especially about employment opportunities. This isolation will lead to a geographic concentration of poverty and a tax base insufficient to provide quality schools, thereby encouraging illicit "trades."[12]

Dissimilarity Index

A dissimilarity (segregation) index measures the extent of residential segregation. It is computed thus:

$$D = \frac{1}{2}\sum_{i=1}^{n}\left|\frac{P_{i\mathrm{w}}}{P_{\mathrm{w}}} - \frac{P_{i\mathrm{h}}}{P_{\mathrm{h}}}\right| \times 100,$$

where: $P_{i\mathrm{w}}$ is the number of whites living in the ith census tract of the city; P_{w} is the total number of whites in the city; $P_{i\mathrm{h}}$ is the number of the specific racial/ethnic minority population k living in the ith census tract of the city; P_{h} is the total number of that specific population in the city; n is the number of census tracts in the city.

The dissimilarity index varies from 0 when the two proportions are equal (no segregation) to 100 (complete segregation). Using this index, Echenique and Fryer (2005) noted that in 2000, the most segregated city for Asians in the United States was Honolulu, Hawaii; for blacks, Detroit, Michigan; for Hispanics, McAllen, Texas; and for whites, Lowell, Massachusetts. They also noted that Los Angeles has the largest minority ghetto of Hispanics—17,909 contiguous blocks. Blacks in Detroit live in the second largest minority ghetto, but the largest segregated ghetto is located in Jackson, Mississippi. Table 13.1 provides a list of the ten most segregated cities in the United States for each of five racial groups and their associated dissimilarity index (D) using data from the 2000 Census.

[12] Cutler and Glaeser (1997); DeRango (2001).

Table 13.1 Top Ten Most Segregated Cities, by Racial Group

Whites		*Blacks*		*Asians*		*Hispanics*	
City	*D*	*City*	*D*	*City*	*D*	*City*	*D*
Lowell, Massachusetts	99.984	Detroit, Michigan	95.421	Honolulu, Hawaii	93.403	McAllen, Texas	95.85
Lawrence, Massachusetts	99.984	Monroe, Louisiana	94.912	San Francisco, California	80.56	Laredo, Texas	94.97
Nashua, New Hampshire	99.966	Milwaukee, Wisconsin	93.605	San Jose, California	71.692	Los Angeles, California	93.9
Sharon, Pennsylvania	99.952	Flint, Michigan	93.027	Los Angeles, California	65.878	El Paso, Texas	92.56
Boston, Massachusetts	99.949	Pine Bluff, Arkansas	92.744	Vallejo, California	63.447	San Antonio, Texas	90.48
York, Pennsylvania	99.947	Chicago, Illinois	92.060	Oakland, California	56.615	Brownsville, Texas	87.69
Barnstable, Massachusetts	99.947	Memphis, Tennessee	91.660	Anaheim, California	53.402	Tuscon, Arizona	86.54
Johnstown, Pennsylvania	99.944	Miami, Florida	91.513	Seattle, Washington	52.639	Anaheim, California	86.24
Providence, Rhode Island	99.943	Birmingham, Alabama	91.449	New York, New York	47.642	Corpus Christi, Texas	83.22
Springfield, Massachusetts	99.933	Gary, Indiana	91.418	San Diego, California	41.735	Albuquerque, New Mexico	82.46

Calculations performed using block-level data from all MSAs in the 2000 United States Census. The sample includes all census blocks in all MSAs. Racial categories are mutually exclusive. Asians include Pacific Islanders. *Source*: From Echenique, F. and Fryer, R.G. Jr., On the measurement of segregation, *NBER Working Papers*, National Bureau of Economic Research, Inc., 2005. With permission.

Inner-City Living and the Spatial Mismatch Hypothesis

According to the spatial mismatch hypothesis, structural unemployment is due to inadequate information about job availability or high costs of moving or commuting. Within an urban area, this hypothesis relates to structurally unemployed people who live in the inner city and who do not work in the suburbs. When the jobs move to the suburbs, the central city employees quit rather than commute. According to the ***job access hypothesis*** of Kain (1968, 1971), concentrations of minority populations within central cities limit the workers' access to the large number of job opportunities in the suburbs, and thus sustain structural unemployment. Wilson (1987) argued that out-migration of upwardly mobile blacks leaves fewer and weaker role models for the central city poor, and this influences the amount of structural unemployment.

Empirical tests of these hypotheses show mixed results regarding the validity of the spatial mismatch hypothesis. Researchers have used various models to attempt to capture the phenomenon. Weinberg (2004) reconciles the myriad of findings when he reported evidence of spatial mismatch only for residents of cities with a population greater than 500,000, but not for smaller urban areas. The evidence of spatial mismatch is strongest for youth, women, and elderly workers who do not have a college education.

Inner-city residents are dependent on a public transportation system that geographically limits the extent of their job search. As we will see in Chapter 14, public transportation systems are designed to transport workers from the suburbs to the CBD in the morning, and back home in the evening. Return trips carrying central city residents to the suburbs and back home are not common. However, even when transportation barriers are removed, spatial mismatch persists, not only because of the lack of information and inadequate schooling, but also because of the feeling of "not belonging" in the white suburbs. In addition, the long-term unemployed choose to remain in the inner city rather than move elsewhere and be subjected to racial profiling.[13]

Voluntary Sorting

Surprisingly little evidence supports the hypotheses that differences in income, wealth, or educational attainment significantly affect segregation levels. As incomes rise or fall, segregation levels do not vary by much. Racial

[13] McCormick (1986); Wilson (1987); Gordon, Kumar and Richardson (1989); Holzer (1991); Hughes and Madden (1991); Holzer, Ihlanfeldt and Sjoquist (1994); Taylor and Ong (1995); Coulson, Laing and Wang (2001); Gotlieb and Lentnek (2001); Smith and Zenou (2003).

segregation in housing does not seem to be a by-product of economic stratification. The hypothesis of voluntary sorting asserts that people want to live with people of their ethnic group. Farley, Fielding, and Krysan (1997) analyzed interview data from metropolitan Atlanta, Boston, Detroit, and Los Angeles and found that race remains significant in the choice of a neighborhood. Whites prefer to relocate in neighborhoods where few blacks live. Blacks prefer multiracial neighborhoods as long as there is a sizeable proportion of blacks.

Everything else equal, Gyourko, Linneman, and Wachter (1999) found no racial difference in ownership rates among those households capable of meeting the down payment and closing cost requirements required by the mortgage underwriters. However, over one-half of the sample of minorities did not have the money for a down payment, compared to approximately one-third of the white households. Nevertheless, whites who have trouble meeting the wealth requirements still own their own homes at higher rates than equivalent minority households. Minorities tend to own homes in the central city, whereas whites generally own in the suburbs.

Language and cultural attributes create neighborhood preferences. Residential succession tends to take place between households of the same ethnic group. Multi-ethnic neighborhoods, where the majority is nonwhite, attract foreign and native-born black and Hispanic households. Areas where the native language of most of the residents is not English attract immigrants with the same background.[14]

At What Price Culture?

Gonzalez (1998) calculated the price of Mexican culture using data for California and Texas from the 1990 Census. He found that the Mexicans who concentrated in "enclaves" earned less money and paid higher rents. In contrast, the non-Mexicans in these "enclaves" had higher earnings.

Mexican "islands" offer cultural amenities for which new immigrants are willing to pay a premium. If land rents there are higher, then workers without this cultural preference must be compensated with higher earnings to keep them from moving. The "price of

[14] Farley, Fielding and Krysan (1997); Gyourko, Linneman and Wachter (1999); Rosenbaum and Schill (1999); DeRango (2001).

> Mexican culture" is highest for Mexican immigrants, slightly lower for Mexican–Americans, and statistically equal to zero for Asians, blacks, and whites.
>
> Gonzalez (1998)

Racial (Geographic) Steering

According to the ***perceived preference hypothesis***, real estate agents or rental agents may discriminate to save the minority customer from moving to a potentially hostile neighborhood. Real estate agents are under the impression that the minority client would be more comfortable in a neighborhood that already has minorities of the same group. Agents only want to maximize the number of sales and their own profits (commissions). They profile their clients to save the time needed for a complete interview, or by only showing the clients the housing that they (the agents) think that the client would like. Real estate agents can also steer clients by providing positive and negative commentary on home locations and neighborhoods.

The practice of racial steering has been illegal in the United States since 1968, but only recently does the practice seem to have become less frequent. The Department of Housing and Urban Development (HUD) conducted fair housing audits in Cincinnati, Ohio, and Memphis, Tennessee, in 1989 and again in 2000. Black, Hispanic, and white auditors were sent to the firms posing as buyers to see if these groups of buyers were treated equally.

The 1989 study found that the six real estate firms that were studied engaged in some sort of steering during at least half the audited transactions. The firms did not systematically refuse to show specific neighborhoods to specific clients. However, if on demand, a black auditor wanted to see a house in a white neighborhood, the agents showed it to him. But in total, the black auditors were only shown a few of these residences. Similarly, the agencies did not show houses in the racially mixed areas to the white auditors unless they specifically asked to see them. Realtors often praised neighborhood amenities and quality schools to the white auditors, but seldom to black auditors. On the bright side, the 2000 study found almost no evidence of racial steering.[15]

Segregation by Local Regulations

Residential patterns due to income and race may result from local and federal regulations. Local land-use regulations that require minimum lot

[15] Galster (1990); Farley et al. (1993); Page (1995); Roychoudhury and Goodman (1996); South and Crowder (1998); Ondrich, Striker and Yinger (1999); Reade (2003).

sizes increase housing prices and tend to exclude low- and moderate-income households. Because of the correlation between income and race, such regulations tend to promote racial segregation.[16] We will study this phenomenon in detail in Chapter 15.

Affordability

The concern for equitable access to housing in the United States prompted the passage of the National Housing Act of 1934. The subsequent Housing Act of the United States (1949) established a national goal of "a decent home and suitable living environment" for all Americans. It was also the origin of the American housing and urban development policies.

How well has this 70-year-old program fared? Some say, "very badly," others say "very well." Advocates for even greater housing assistance who think that we are not close to meeting the goal point to the following problems:

- The number of young households has considerably decreased since the middle of the 1980s.
- First-time homebuyers must rely more on gifts from their families for the down payment for their first home. Those with no affluent relatives can only rent.
- Children graduate from high school or college and cannot afford a house in their old neighborhood.
- Increased housing costs have reduced the probability of home ownership for young, single mothers.

Middle-income households with low education levels have a disproportionately high housing budget. They lack the qualifications that would permit them to find a job that paid as well as the ones they had in manufacturing. We keep hearing about increases in homelessness, fewer rental units that the least prosperous members of society can afford, and other implications of growing income inequality.[17] Yet in 2000, 67.4% of Americans owned their own home and 80% of those were 55 years and older.

In contrast, those who think that the housing act policies are a success, use for their criteria the original definition of the term "affordability." In 1940, the definition included overcrowding, physical deterioration, and lack of private plumbing facilities. In the same year, over 20% of all dwellings were occupied by more than one person per room (overcrowded), but less

[16] Schill and Wachter (1995); Ondrich, Stricker and Yinger (1999).

[17] Linneman and Megbolugbe (1992); Winkler (1992); Mayer and Engelhardt (1996); Ziebarth and Meeks (1998); Somerville and Holmes (2001).

than 6% of all residences entered into this category in 2000. In 1940, 18% of all dwellings suffered from severe physical deterioration, whereas this number was less than 2% in 2000. In 1940, 45% of all dwellings lacked a complete set of plumbing fixtures in bathrooms and kitchens. Only 1% fit this category in 2000.

By 2000, almost all homes had refrigerators, and 86.8% are self-defrosting; 77% have washing machines, and 71% have clothes dryers. More than 50% have dishwashers. In 1940 the concern in some regions was lack of central heating. Now, because of local housing codes, 94% have some form of central heating. In 2000, 84% of the new single-family homes, and 45% of all homes in the United States had central air conditioning.

Over time, the bar defining a "decent house" keeps rising. To prove "lack of affordability," policymakers now look at prices rather than quality. The standard public policy indicator of housing affordability in the United States is the percentage of income spent on housing. Housing expenditures that exceed 30% of the household income signal an affordability problem. Rather than concentrating on the proportion of income spent on housing, a more logical measure would be based on the opportunity cost of housing. Unfortunately, that is seldom used.[18]

Using a ratio of median home prices to median income does not account for the following problems: (1) the actual financial restrictions or tastes of individual home buyers, (2) mortgage interest rates, (3) down payment requirements, (4) insurance rates, (5) property tax rates, (6) local disparities in median income, and (7) the mix of homes for sale. These are all extremely important factors in the estimation of the aggregate demand for housing.

A better definition of affordability takes account of the opportunity cost of housing. Does "unaffordable housing" mean that the household cannot pay or that they prefer to buy other goods instead of their rent? If housing prices are in line with production costs, the term "affordability" may well signal a lack of enough income to afford a standard home.

The escalations in real house prices are chiefly due to substantial improvements in the quality of the houses for sale. What level of quality is considered "good enough" for basic shelter? Quality improvements increase costs and prices. Higher housing costs do not differentiate between basic shelter requirements and increased tastes for more housing amenities such as the number of bathrooms, gadgets and appliances, and central heating or central air conditioning.

After analyzing construction cost data, along with census data and data from the American Housing Survey, Glaeser and Gyourko (2003) concluded that in general, home prices in the United States are close to construction

[18] Miron (1989); Linneman and Megbolugbe (1992); Salins (1998); U.S. Bureau of Census (2002).

costs. In some parts of the country, home prices are actually below the physical costs of construction (not necessarily on purpose). Land values take up close to 20% of the total value of the house. Zoning that requires a minimum lot size is responsible for the high housing prices where house prices diverge substantially from construction costs. Regulations slow the equilibration of supply and demand of housing. Once the developers decide to invest, they face delays in getting financing and securing both building permits and zoning variances.[19]

The Role of Government

Should access to inexpensive, high-quality housing be a government-guaranteed universal right? If the private housing market does not or cannot provide affordable housing, perhaps government could provide low-cost housing or enforce rent controls. In some states, provinces, and countries, governments have tried to provide decent, affordable housing for every household. However, changes in housing affordability are linked to the evolving household composition. Thus, programs that decrease housing costs increase the quantity demanded of housing and require even larger subsidies later.[20]

Proponents say that government has the moral dictate to intervene in the housing market. Opponents say that the government policies themselves are the cause for a lack of affordable dwellings. To effectively help low-income households afford housing, the government need only allow the private market to work with minimal interference. Instead, the government has only succeeded in reducing the quantity of low-cost housing. In earlier times, people without much money had a larger variety of housing choices than are currently allowed. However,

- Apartments in buildings with three or four stories now require elevators.
- Planners oppose mixed-use developments such as living quarters over shops or behind shops because they judge such living arrangements to be unsightly.
- Apartments over garages are forbidden because of potential carbon monoxide poisoning.
- Rooming houses, tenement houses, row houses, triplexes, fourplexes, and low-rent hotels are unseemly, and thus may be banned.

[19] Luger (1986); Miron (1989); Glaeser and Gyourko (2003); Somerville and Mayer (2003).

[20] Lambelet and Zimmermann (1991); Hancock (1993); Salins (1998).

The apartments above or behind stores or shops were often occupied by the shop owners themselves. Afternoon customers could smell the shop owner's dinner cooking. Other low-income dwellings were near noxious factories, stockyards, or rendering plants. These living quarters were by no means high-quality housing, but they served basic shelter requirements. The poor were not living in the street.

The Standard State Zoning Enabling Act of 1922 was a response to those who complained about negative externalities from commercial and industrial activity. This act became the model for zoning ordinances separating commercial and industrial activity from residential areas. The resulting separate single-use zoning impaired the affordability of housing.[21]

These programs that purported to create affordable housing in fact exacerbated the problems of poverty. For instance, by constructing public housing projects and concentrating the poor, the government amplified the spatial mismatch problem and structural unemployment. We will now consider three policies undertaken to eliminate the problems of affordability: public housing, rent controls, and housing vouchers.

Public Housing

In 1937, Congress established the Federal Housing Administration to provide more public housing. Most public housing projects were intended to be temporary and located according to the needs of the market. This governmental involvement replaced the competition of the private sector in the affordable housing market with its monopoly in "project homes." The lack of a profit motive for this monopolist to provide shelter resulted in an utter debacle.

In the 1950s, a second version of the Federal Housing Administration constructed stark high-rises such as the Robert Taylor homes in Chicago and the Pruitt–Igoe housing project in St. Louis. The Robert Taylor homes project was the largest public housing development in the world when it was completed in 1962. The development consisted of 4300 apartments in 28 buildings 16 stories high on a 2-mile-long stretch of South State Street in Chicago. Drivers passing by on the Dan Ryan Expressway called it the concrete curtain. Most of these high-rises have now been razed, and by April 2006, only one building remained.

Likewise, the $15 billion Pruitt–Igoe complex, completed in 1956, was razed 16 years later. That cost is equivalent to approximately $110 billion in 2006 dollars. The project, consisting of 33 11-story buildings on 55 acres in St. Louis, Missouri (Figure 13.3a–c), incurred a reputation as the worst example of public housing in the nation's history. Both of these

[21] Norquist (1998).

properties, and in fact, any of the "project homes" built during that time concentrated a large low-income population on an isolated site. "The projects" turned into a national icon of the backward philosophy of postwar public housing.[22]

Rent Controls

Rent controls represent a less costly solution to the affordable housing problem, and thus are more popular among local governments. Consult any principles of economics book to find the standard economic argument against rent controls. Rent controls are represented as a price ceiling in a standard supply and demand model (Figure 13.4). Rent controls discourage investment, cause arbitrary redistributions, and are nightmares to administer.

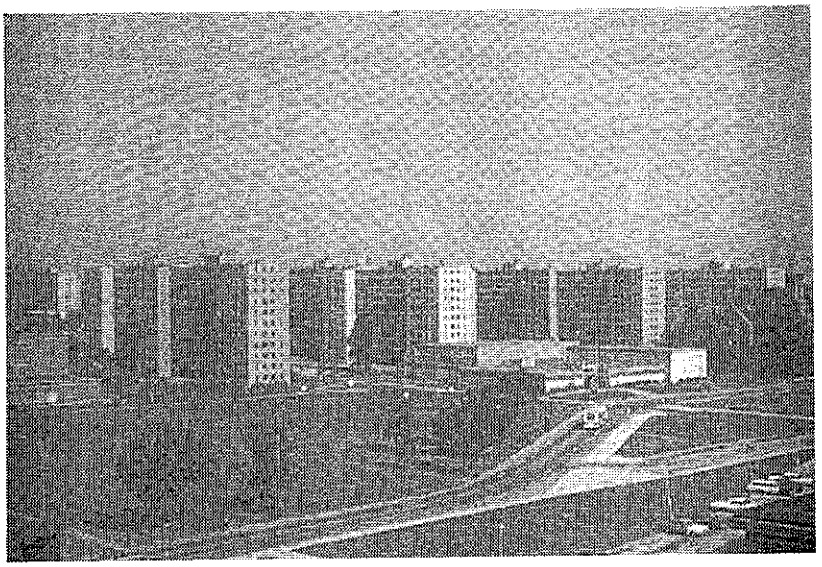
The rental housing stock deteriorates rapidly; landlords can neither afford to maintain their buildings, nor justify an investment in new rental units. The result is supposed to be a reduction in the quantity supplied and consequently, a rationing controlled by either the landlords or government. The rationing creates inequities and nurtures a black market in rental housing.

If rent controls are that problematic, why are they so pervasive, and why can they not be confirmed empirically? Price controls have been advocated back to the time of Hammurabi and the laws of Babylon (1792–1750 BC). Rent controls currently exist in some form or another in countries such as the United Kingdom, France, Italy, India, Hong Kong, and Egypt, and in all Canadian provinces during the 1970s. However, Alberta, British Columbia, and New Brunswick abandoned their rent controls at the end of the 1970s. The nature of rent controls no longer conforms to the standard model of the price ceiling imposed on a perfectly competitive market.

There were two generations of rent controls in New York City and many European countries after the Second World War. The first generation of "hard rent controls" confirmed the standard analysis. These rent controls did not apply to newly constructed or rehabilitated housing or to luxury units. The controls created a dual rental market. Households that could not rent in the controlled sector increased the demand and rents in the uncontrolled sector. The controls prevented the increases in price that accompany a general increase in demand from spreading evenly to all sectors. In 1968, the controls were lifted and rents in the controlled sector of New York City rose by 22%–26%, although rents in the uncontrolled sector fell approximately 22%–25%. The rent controls, therefore, increased rents in the unregulated sector.

[22] Chicago Housing Authority (2003). City of St. Louis Development Activity (2003).

(a)



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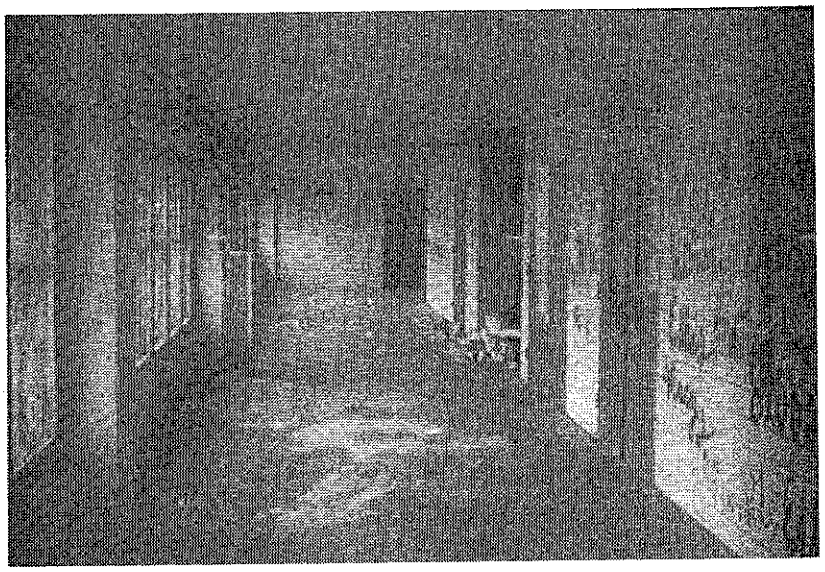
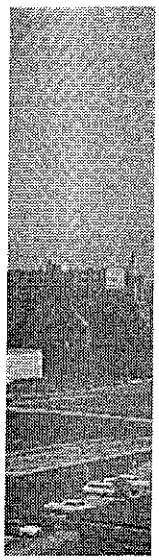
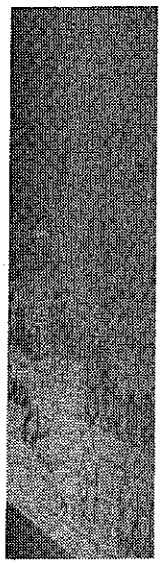
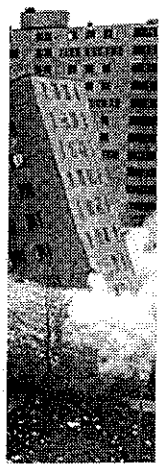


(c)

Figure 13.3 (Caption on facing page).







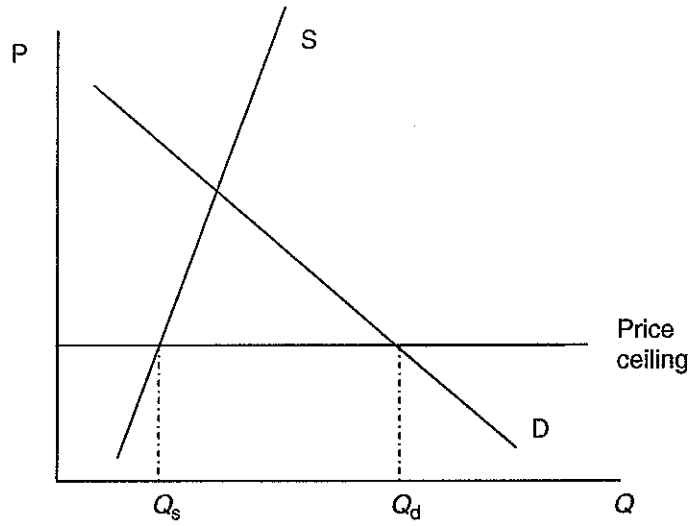


Figure 13.4 First-generation rent controls.

The second generation of "soft" rent control systems is systematically different. These new controls simply restrict the increases in annual rents. Landlords are required to maintain their buildings, but maintenance costs can be passed on to the renter.

The standard analysis asserts that rent controls cause a housing shortage, and thereby increase homelessness. However, most researchers conclude that rent controls are not a significant factor in explaining the problem. For example, a study by Quigley (1990) that used 1985–1988 data for 44 metropolitan areas in the United States, found that the existence of a rent control law increases a city's homeless shelter population by 0.03% and its street population by 0.008%—effectively zero.

If rent controls do not affect homelessness, do they decrease the housing supply or quality? The results depend on the wording of the legislation. In New York City, under the first-generation rent controls, yes. Landlords reduced housing maintenance and some required tenants to lease furniture. However, in 1990, the Cambridge Rent Control Board in Massachusetts found that in basically all the 200 controlled units examined, the tenants

Figure 13.3 (a) The Pruitt–Igoe housing project in St. Louis in 1956. (b) What communal spaces became. (c) The destruction of the Pruitt–Igoe housing complex 16 years later, in 1972. (From the photographs, a through c are excerpts from the report, creating Defensible Space, originally published by the United States Department of Housing and Urban Development, Office of Policy Development and Research, and is reproduced here with the Department's permission. The complete text can be found and downloaded for free at: (http://www.huduser.org/publications/pubasst/defensib.html or in printed form by calling 1-800-245-2691.)

themselves did the painting and plastering, major electrical system repairs, and kitchen renovations. In some buildings, tenants maintained the common areas as well as their own apartments.

In Brookline, Massachusetts, the rent control by-laws limit the return on improvements. Tenants can reject any capital improvement to avoid paying the incremental rent increase. Under these laws, tenants do not provide maintenance even if they pay a rent lower than market. In this case, rent controls discourage spending on maintenance and renovations; in the long run, controls led to the deterioration of housing.

Rent controls can actually improve economic efficiency by forcing oligopolistic landlords to behave more like perfect competitors. In small towns and specific neighborhoods, the rental housing market is often oligopolistic with immobile, low-income populations. Luger (1986) analyzed data from United States cities with fewer than 200,000 people, and concluded that those with relatively high populations of poor, large concentrations of students, and a high growth rate, have the highest concentration of rentals owned by monopolists or oligopolists in particular neighborhoods.

However, even the second-generation rent controls have negative side effects. Rent controls decrease mobility if the laws allow the landlord to increase rents for the new occupant. Tenants may compensate for this increase in rent by just not moving. This immobility leads to housing mismatches. An apartment that was adequate for a childless couple will be cramped after the children are born. In contrast, couples who rented while their children were young will find that their apartment has become too large after their children left. This mismatch alone leads to a deadweight loss in welfare in New York City of over $500 million annually (Glaeser and Luttmer 2003).[23]

Housing Vouchers

Housing vouchers are a third method that governments could use to make housing more affordable. According to this system, households can choose to rent in the private sector as long as the rental meets the standards set by the United States Department of HUD. This program allows households to rent at the current market rate and eliminate the inefficiencies of government-provided housing, as well as the complex bureaucracy associated with rent control.

[23] Luger (1986); Moorhouse (1987); Quigley (1990); Lambelet and Zimmermann (1991); Marks (1991); Ho (1992); Caudill (1993); Jackson (1993); Arnott (1995); Nagy (1995); Glaeser (1996); Anas (1997); Glaeser and Luttmer (1997); Grimes and Chressanthis (1997); Malpezzi (1998); Olsen (1998); Early and Phelps (1999).

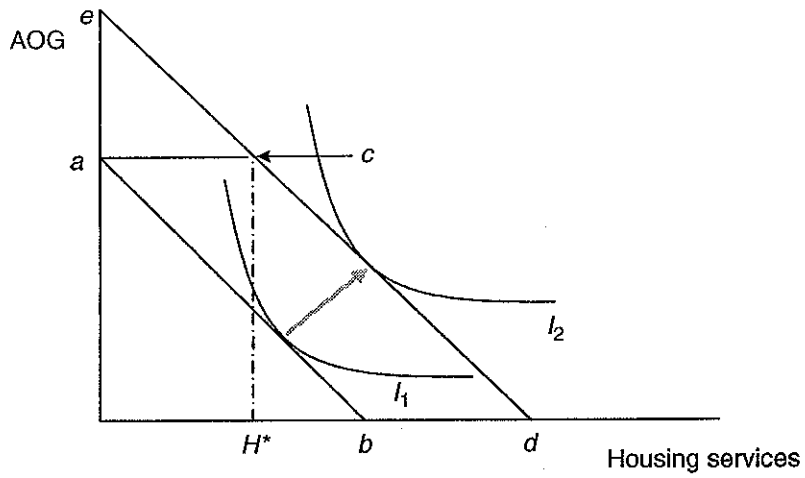


Figure 13.5 Housing vouchers when housing is a normal good.

The concept of housing vouchers can be analyzed with the indifference curves and budget constraints shown in Figure 13.5 and Figure 13.6. Let H^* be the minimum optimal quantity of housing services, as established by HUD. Without housing vouchers, individuals would be on some indifference curve tangent to budget constraint *ab*. The addition of a housing voucher increases the amount of housing that can be consumed, without necessarily decreasing the amount of all other goods (AOG) consumed, as long as the recipient chooses quantity H^* or larger. It is evident that with the voucher, the consumer will be on a higher indifference curve.

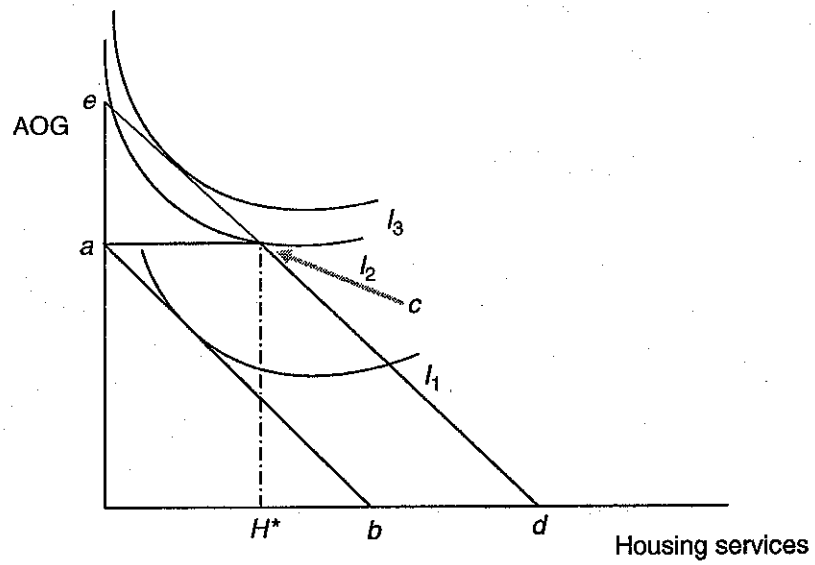


Figure 13.6 Housing vouchers when housing is an inferior good.

One of two scenarios will take place. If an indifference curve is tangent to the new budget constraint at a quantity of housing higher than H^*, as in Figure 13.5, the recipient will make the same decision, whether the benefit is in the form of a housing voucher or cash for the same amount.

Without a housing subsidy of $5000, for example, the consumer opts for an austere housing arrangement, given the tangency position of indifference curve I_1 to the budget constraint *ab*. With the housing voucher, the consumer is on budget constraint *cd* and indifference curve I_2, which is higher than I_1. Note, however, that I_2 is not tangent to the budget constraint *cd*; it pivots around that constraint at the corner point *c*. No tangency can exist at a corner, because the slope of the indifference curve is not equal to a slope of a budget constraint. However, two scenarios for ***Pareto improvements*** still exist. A Pareto improvement exists when someone can be made better off without making anyone worse off.

If the consumer just received the $5000 in cash with no required minimum housing requirement, either less money can be spent to keep the consumer on indifference curve I_2, or the consumer could be better off by having the voucher turned into cash and spent at the consumer's discretion. With cash, this recipient would be better off at the tangency of indifference curve I_3 on budget constraint *ed*. The consumer would choose a lower quality housing than the H^* required to get the housing voucher, and more of all other goods (AOG). At the same time, the cost of this program to taxpayers is the same, so they are no worse off—a Pareto optimal choice.

Of course, an award to the recipient of the amount of cash needed to remain on indifference curve I_2 would also be a Pareto improvement over a strict housing voucher. In this scenario, the recipient is no worse off, but taxpayers gain. In this instance, the householder could receive, say $4000 cash to spend at will, and society would have $1000 to spend elsewhere—also a Pareto optimal choice.[24]

Summary and Conclusions

This chapter investigated the nature of the housing market, as well as problems of segregation, discrimination, and affordability. Even though it's imperfect, the housing market is nevertheless 90% efficient. The perfectly competitive model may not provide one market-determined price for a specific dwelling, but it does provide a range of prices, with the median price close to the market-determined price. A housing market could include the supply and demand for a certain quality or a certain type of house, where the quantity is defined as the number of physical units that fit this description.

[24] Brennan (2002); United States Department of Housing and Urban Development (2003).

Alternatively, it could define Q as a measure of units of housing services or quality of housing, with P being the price that each level of housing quality goes for, according to a hedonic model or repeat sales index.

Housing supply functions must account for the incentives of the four components of housing supply: developers or speculative home builders, sales or rentals of existing homeowners, existing rentals of apartments controlled by rental agencies, and local government decision makers. Overall, housing demand in an area is primarily determined by household formation and migration patterns, as well as housing prices. Within a specific neighborhood, housing demand is a function of the accessibility to employment locations. Tenure choice is determined by the relative costs of owning and renting, the wealth of the householder, the age of the individual, and the probability of migration.

Housing being a normal good, people prefer to spend increases in their incomes on larger homes, which can only be had at the outskirts of the metropolitan area. The preference for amenities also increases with income. To the extent that higher-income people are employed in the CBD where the amenities are located, their preference will be to live in the center, rather than in the suburbs. However, if the center offers few amenities, as is true of most cities in the United States, the higher-income people will reside in the suburbs.

A hedonic price index is constructed to reflect the market price for specific attributes of a property: proximity to green spaces or bodies of water, historic districts, quality education, or transit routes. Because these amenities are immobile, their popularity is capitalized into the land values surrounding these sites. Similarly, negative externalities (air pollution, noise, or proximity to underground storage tanks) translate into lower land values for neighboring property. Improved school quality increases land values, but unpopular decisions imposed by school districts or zoning boards, or by other regulatory bodies, can decrease land values.

Two theories describe how polycentric cities are formed. The natural evolution theory suggests that development moves to the open tracks of land in the suburbs to escape the congestion in the center city. The higher income groups filtered out into the suburbs first and new firms located next to the skilled workers, creating secondary employment centers and a geographic income stratification.

The second theory focuses on the fiscal and social problems of the inner cities that drive higher income people to the suburbs. Residential concentration of the poor prolongs structural unemployment, according to the spatial mismatch hypothesis. The absence of information about the labor market outside that specific ethnic neighborhood is a greater problem than commuting costs. If segregation in a particular neighborhood increases unemployment and exacerbates the probability of a household falling into a poverty trap, why does segregation persist?

Income differences possibly play a minor role, especially when accompanied by increased housing prices due to regulations and zoning ordinances. Voluntary sorting allows immigrants to adapt more easily to a new cultural and linguistic environment. The fear of discrimination, perhaps exacerbated by racial steering, causes systematized segregation.

Affordability is a problem for people who do not want or cannot acquire housing of a certain quality. The quality of housing that was acceptable in 1940 or in 1960 is no longer acceptable today in the United States. We have, therefore, made progress in increasing the quality of housing available, but affordability remains a concern. The increased quality of housing is associated with increased prices. The majority of homes in the United States are priced close to construction costs. Solutions carried out by the government include building public housing, controlling rents, or providing housing vouchers.

The construction of housing projects caused the concentration of the poor into concrete warehouses, erased middle-class role models from their lives, and limited the access to information about jobs outside their enclave. Most projects were poorly maintained, notoriously crime ridden, and have since been razed or scheduled for demolition.

The term "rent control" makes economists bristle. However, second-generation rent controls are kinder to the market in the sense that landlords can recover the cost of maintaining their buildings. These controls may align housing prices from monopolistic or oligopolistic housing markets with those of the competitive solution. However, the administrative costs are high.

Housing vouchers can bypass some of the administration costs. However, they impose a minimum quality of housing on recipients, and regulating the quality of this housing could be costly. A program that offers cash, rather than a voucher that can only be used toward housing, would put the recipients on higher indifference curves, besides eliminating one more layer of administrative costs.

Chapter Questions

1. In some places, the higher-income people live farther from the CBD and lower-income people live closer. In other places, the reverse is true.
   a. Why? Explain using economic analysis.
   b. What can an inner city do to attract higher-income people?
   c. How might one measure the value of urban amenities?
2. List four groups that contribute to housing supply. What incentives are needed by each group to increase the quantity of housing supplied to the market?

3. What two main groups of people will increase housing demand?
4. If you plan to invest in multi-family housing rental property, which groups would likely be your tenants? What amenities could you provide to increase the desirability of your property for these groups?
5. How is the filtering theory dependent on income and distance? What implications would filtering have on segregation, spatial mismatch of jobs, and educational quality?
6. Governments have tried creating affordable housing by building housing projects, by creating and enforcing rent controls, and by providing housing vouchers. Given the assumption that the problem is not the lack of cheap housing, but the lack of sufficient income, explain who benefits and who is harmed for each of these three methods, compared to simply providing a cash transfer to the households.

Research Assignments

1. Does the filtering process describe housing patterns in your area?
   a. Note the median housing values for the major city in your area, along with small towns, suburbs, and townships directly adjacent to your city.
   b. Note the median income levels for these areas.
   c. Compare also the vacancy rates for housing in your area with the surrounding areas.
   d. In what way does your data conform or fail to conform to the filtering theory?
2. Calculate a dissimilarity (segregation) index for your city.

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