Chapter 3: Capitalization, Zoning and the Tiebout Hypothesis

This chapter explores the essential ingredients of the Tiebout hypothesis, in which residents “vote with their feet” among communities to select their preferred bundle of public services. It is the economic superstructure for the homevoter hypothesis. The critical features examined here are the principle of capitalization, the effectiveness of zoning, and the realism of the Tiebout model’s assumptions.

Capitalization is critical because if home values do not reflect conditions that local government have control over, there’s not much left to my hypothesis. Local voters need to feel the financial pain or gain of local decisions. I establish that capitalization does happen and that zoning is the necessary condition for it. I then move on to the Tiebout model to anchor this finding in the modern economic theory of local public economics.

Most economists will regard this sequence as backwards. The usual presentation is Tiebout model first, empirical evidence about capitalization next, with zoning as an afterthought or a footnote. My sequence, however, is deliberate. I want to take capitalization out of the shadows of public economics. Instead of being the derivative sideshow, capitalization should be the main event. Concern about home values is what motivates most local government actions. It explains why, if one wants to maintain what I see as the virtues of local government, reforms should not attempt to divorce the collection of taxes from the decisions to spend and regulate. Local tax collection is an inseparable part of the efficiency of local government.

3-1 Intermunicipal Tax Capitalization Without Much Math

My favorite example of tax capitalization was provided by a homebuilder in Concord, New Hampshire. He had built homes all along a street that ran through a semirural part of Concord and into the next town, Bow. The builder wasn't very imaginative — he must have had two basic styles of houses — but he was productive, for there were several homes of the same style on both sides of the border. The reason this was useful to me was that Bow and Concord have quite different fiscal conditions. Concord, the state's capital and its third largest city (at about 36,000 population), has the full range of city expenditures but a large amount of untaxable, state-owned property. So taxes there are pretty high, even by New Hampshire's we-tax-only-property standards. Bow, on the other hand, is small (about 6000) and has a large and eminently taxable electric-power generating plant within its borders. So its property taxes are rather low.
Bow is so small that it did not have its own high school. (In New Hampshire, as in other New England states, the school district is almost always coterminous with the town or city.) At the time of my study Bow sent its children to Concord High School, with which it had an agreement to pay tuition based on the number of pupils Bow sent. Thus Bow and Concord got pretty much the same public education, but had much different tax rates.

My interest in Bow and Concord was the result of my job as an expert witness in Claremont v. Governor (N.H. 1997), a school finance case. The plaintiffs in Claremont were five old mill towns whose property tax base had declined with the migration of textile mills to the South in the 1950s, but much of whose population remained behind. All five towns had high property taxes — for schools and other town services — and relatively low family incomes.

All of the plaintiff districts received a disproportionate share of New Hampshire's state education aid because of their low family incomes, low property-tax values per pupil, and high tax rates. The amount of state aid, however, was modest by national standards. New Hampshire has no broadbased income or sales tax. Candidates for the governor's office who fail to pledge to veto any broadbased tax, in the unlikely event the legislature would pass one, are not taken seriously, as they do not get elected.

The claim by the five towns in Claremont v. Governor was that their constitutional rights were being violated because of the high tax rates required to fund schools, which, the plaintiffs argued, was unfair to their taxpayers and their school children. My task as an expert for the state was to point out that at least one of these allegations, unfairness to taxpayers, was mooted by capitalization. If comparatively high tax rates cause housing prices to be lower in those towns, the economic burden of living in these towns and paying taxes there is equalized.

The Bow and Concord comparison, which state officials had come up with at my behest, was a graphic example of how the tax burden was equalized. I will report a stylized example in Figure 1, rather than reproduce the photographic pairs of houses and actual tax rates that we employed. It is worth keeping in mind that the houses, lots and neighborhoods were practically identical; you could easily imagine homeowners walking into the wrong house on a foggy night.

The 5 percent tax rate applied to the Concord house, according to this example, is two and a half times larger than the 2 percent rate in Bow. But this does not imply any disparity in the ability of the homebuyer in Concord to pay for schools and other public services. Capitalization
has taken care of that. The house in Bow costs $200,000. With a mortgage at an interest rate of 10 percent (the number is easy to compute), the annual mortgage payment on the Bow house is $20,000. The taxes on the Bow house are $4000, so the total cost of owning a house in Bow is $24,000 a year.

Figure 1:
An Example of Tax Capitalization
in Adjoining towns with Identical Homes

<table>
<thead>
<tr>
<th>House in Bow</th>
<th>House in Concord</th>
</tr>
</thead>
<tbody>
<tr>
<td>tax rate: 2%</td>
<td>tax rate: 5%</td>
</tr>
<tr>
<td>Price: $200,000</td>
<td>Price: $160,000</td>
</tr>
<tr>
<td>10% Mortgage: $20,000</td>
<td>10% Mortgage: $16,000</td>
</tr>
<tr>
<td>Property Taxes: $4,000</td>
<td>Property Taxes: $8,000</td>
</tr>
<tr>
<td>Total annually: $24,000</td>
<td>Total annually: $24,000</td>
</tr>
</tbody>
</table>

The house in Concord cost the homebuyer $160,000. The ten percent mortgage costs $16,000 annually, and the annual tax bill is $8000, so the total cost of owning the Concord house is also $24,000. The total cost of owning the home in Concord is exactly the same as it is in Bow. Full capitalization equalizes the burdens of the different tax rates. The $40,000 reduction in the buying price left the owner in high-tax Concord with exactly enough money to pay the extra $4000 in annual property taxes.

3-2 Some Objections to Capitalization

I have run this example past some skeptical audiences, including economists, attorneys, state tax judges, and Dartmouth and University of Washington students, who have offered the following questions and observations:

• Why didn't the developer build everything in Bow, the low tax place?
He must have paid less for land on the high-tax Concord side. The capitalization effect accrues to land, the only truly immobile factor of production. If one of the homes were to burn down and the owner decided to sell the lot and let the buyer rebuild, the value of public services and the burdens of taxation would still be capitalized in the price of the lot, assuming the home can be rebuilt.

• The examples assume, unrealistically, that both homes are fully mortgaged. What if people paid cash for some or all of the homes? Wouldn't the low-tax Bow buyer be better off over the years, since she has to pay only half as much in taxes, and thus be able to sock away more money in other investments?

The wealth position of buyers of both houses would be the same, regardless of whether they took out mortgages on 100%, 80% or 0% of the purchase price. Suppose both buyers had $300,000 in wealth before the purchase. The buyer of the Concord house pays $160,000 in cash (no mortgage) at the beginning of the period. He has $140,000 left over. If he invests this at ten percent interest, the $140,000 yields an annuity of $14,000 per year. He can pay his $8,000 in taxes and have $6000 annually left over to invest in the stock and bond market. The buyer of the Bow house pays $200,000 in cash, leaving her with $100,000 in liquid assets. At ten percent interest, she can get an annuity of $10,000, from which she has to pay $4000 in taxes, leaving her with $6000 to invest in the stock and bond market, the same amount that the Concord buyer has. The equality of outcome is the same for any mortgage/cash split, and it is not sensitive to the amount of wealth at which each starts.

• Wait a second. The example does not work out if you plug in another interest rate, say 5 percent.

Correct. This particular example, in which the Bow house is worth $40,000 more than the Concord house, depends on the ten percent rate of interest I used. But the same example could be done with a 5 percent rate of interest, or any other number. The difference in the value of the houses rises if interest rates are lowered. At a 5 percent interest rate, an annual tax differential of $4000 would not be worth $40,000 in house value, but $80,000. But this also changes the tax rates needed to finance any particular level of public expenditures. To work out a fully general example, we economists must solve a simultaneous equation system for interest rates, tax rates, and house values.
• Maybe economists solve simultaneous equations, but homebuyers don't do that.

People do not actually have to do the math to make the market work. All they have to do is realize that there is a net advantage — lower tax or lower mortgage — to living on one side of the town border or the other. They head for the house on the side with the greater fiscal advantage, and that drives the price up there and down in the less-favored side. It's exactly the same as the dynamics of any other asset market. You don't have to be a financial genius to make money by buying what you expect to be a high-yielding stock at a low price and selling (or declining to buy) a low-yielding stock at a high price. In doing so you help the market equalize the net rate of return of owning stocks.

• When you ask people why they bought a particular home, most would not give tax differences as the key factor. Isn't the example unrealistic for that reason?

No. The example is drawn from real life. These differences are exactly what we observe either from paired examples (the “comparables” that real estate appraisers look for) or from statistical regressions. The reason these markets work so well is that some people do care about fiscal differences, and in buying a home, you have to bid against those people. In real estate, as in other asset markets, some people with money are well informed, and they are the buyers that must be bid against.

If you really don't care about the tax difference (or don't know about it), the seller of the Concord (the high tax) house could raise the price higher than I have supposed in the previous section's example. But not much higher, unless you are silly enough to tell the seller that you'd pay just as much for the house in Concord as for the identical one down the street in Bow. (Okay, some people are that silly, but the fool-and-his-money theorem assures us that they are not influential in most markets.) The house seller in Concord cannot count on folks like you to come by right away. He has to price to sell eventually, and having a price too close to its twin in Bow is bound to deter some potential buyers from looking. After all, the seller in Bow is not likely to be shy about pointing out the great tax advantage that her house has over its twin in Concord. Markets can work well even if only a few people are attentive to differences in the quality of assets, as Friedrich Hayek (1945) proposed and as Vernon L. Smith (1982) confirmed with experimental data.
• What happens if Bow's population grows? Won't that and other future changes in fiscal conditions dilute the tax base (more homes but same fiscal-cow of a power plant) and reduce capitalization?

Capitalization results from forecasts about the fiscal differences that prevail in the future as well as right now. If homebuyers in Bow expect the town to grow and the tax base to be diluted (since the new homes would probably not be accompanied by a new power plant), they would take that into account when buying their homes. Of course, if the dilution occurs a long time in the future, it won't much affect current prices. The sum of $1000 due next year affects the selling price of a house much more than $1000 due twenty years from now.

Moreover, Bow homeowners also control the land use in their towns (remember, the town and the school district occupy the same land area), and they can use zoning and exactions to make new homes pay their own way, as I will describe in section 3-9 below. To the extent that a certain amount of homebuilding cannot be charged for the dilution of the tax base, I would expect that this fact would already be incorporated in the home price difference. But the odds favor the existing homeowners. Not too many would vote for land-use laws and subdivision procedures that would reduce the value of their most valuable single asset.

3-3 Everything Seems to Be Capitalized

Property-tax differentials are not the only things that are capitalized. Econometric studies of single-family housing markets show capitalization of an amazing variety of location characteristics. Here's a selective list with a few of the possible sources:

• Toxic waste dump announcements reduced values in Woburn, Mass., the site of Jonathan Haar's *A Civil Action* (Katherine Kiel 1995), but toxic waste dump cleanups restored values in Houston (Janet Kohlhase 1988).

• Having one's home in a historic district raised values in Baltimore (Deborah Ford 1989), but historic designation reduced apartment house values in Philadelphia because of restrictions on conversion (Asabere, Huffman, and Mehdian 1994).

• Large public housing projects reduced nearby home values in New Haven (Grether and Mieszkowski 1980) but small, dispersed projects did not have any effect on neighboring home values in Portland, Oregon (Rabiega, Lin, and Robinson 1984).
• Higher neighborhood crime rates reduced values in Baltimore (Ralph Taylor 1995).

• Through-traffic on neighborhood streets reduced home values in Baton Rouge (Hughes and Sirmans 1992).

• A wide dispersion of commercial developments (as opposed to concentrating commerce in fewer districts) reduced home values in Boston suburbs (Lafferty and Frech 1978).

• Localized air pollution reduced home values in Pittsburgh (Paul Portney 1981).

• Having homeowners rather than renters as neighbors raised home values in various cities (Rohe and Stewart 1996).

• Adoption of municipal growth controls raised home values in the San Francisco Bay Area (Katz and Rosen 1987).

• Good schools raise home values almost everywhere (section 6-14 below). This has even seeped into the consciousness of that chronicler of everyday Americana, USA Today. “Home Buyers Go Shopping for Schools,” read a headline of May 15, 1996, which noted in the text that even buyers without children sought homes in good school districts “because of greater appreciation and pride of ownership.”

The lesson from these studies is simply that the value of owner-occupied homes is a remarkably sensitive barometer of the expected benefits and costs from events influenced by local public policies. This list should not be taken to mean that the effects listed are good or bad because they raise or lower the value of single family homes in the community. One would need additional information to evaluate the policies that are at issue. For example, the exclusion of landfills, which might benefit individual homes near the sites, might cause municipal trash collection costs to rise so much for others that the net effects on all local home values could be negative. Urban growth boundaries might monopolize the housing market, so that their seemingly beneficial effects on homeowners may not be net benefits to society.

3-4 How Efficient Is the Housing Market?

The capitalization that I have talked about so far concerns differences among communities within a single housing market, which usually would be a metropolitan area. These markets are generally confined to areas that are a reasonable commuting distance from workplaces. My claim
has been that this market works thoroughly to price the advantages and disadvantages of living in a particular community. But is there evidence that this market in general works well?

Economists have examined the larger, national housing market and asked how efficient it is when compared to other asset markets, such as the stock and bond markets. The housing market's efficiency as a national market is obviously less because of the transaction costs of gathering information and making trades. Opportunities for low-priced houses in North Carolina are difficult to take advantage of if you are located in Oregon.

What is surprising is that the evidence suggests the market isn't all that inefficient. Economic studies indicate that during some periods (such as the 1970s) of unusual housing price increases, housing market participants seemed to have missed making an easy buck, and many people got windfall gains (Hamilton and Schwab 1985). The 1980s saw periods of price bubbles in regional housing markets that cannot be explained easily in terms of expected returns (Case and Shiller 1989). But these short-term conditions do not persist. Over the long-haul, housing prices seemed to have incorporated expected capital gains all across the country (Guntermann and Smith 1987; Gyourko and Voith 1992). Persistent price differences between regions of the country seem to have reflected the relative attractiveness of these places (Blomquist, Berger, and Hoehn 1988) and the effects of land-use regulation (Steven Malpezzi 1996).

My concern in this book, however, is primarily with how well housing prices reflect differences in public service quality and taxes among communities within a metropolitan area, not among widely separated areas. The underlying issue, after all, isn't whether we should have national governance of cities. Congress's governance of Washington, D.C., is at least somewhat cautionary in this regard. The issue is whether a metropolitan or state government would do better than local governance. The case for localism hinges in large part on how well the housing market conveys the proper information and incentives to the political actors in local communities. A critical issue, then, is the extent of capitalization of differences in municipal services, taxes, and regulations within a metropolitan, rather than a national, housing market.

3-5 How Extensive Is Capitalization?

The extent of fiscal capitalization within local housing markets was addressed in a detailed and econometrically sophisticated study called Property Taxes and Housing Values: The Theory and Estimation of Intrajurisdictional Property Tax Capitalization by John Yinger, Howard
Bloom, Axel Borsch-Supan, and Helen Ladd (1988). A chapter of the Yinger book reviewed in detail 30 published studies of property-tax capitalization by professional economists. The studies used a variety of samples from states and metropolitan areas around the country in which property taxes were the main means of financing local schools. All but three of them show statistically significant evidence of capitalization of property taxes.

The Yinger book is a convenient compendium of studies and an excellent guide to capitalization principles, but its original research presented, as many people have read it, a challenge to the tax-capitalization claim. It is almost universally agreed that, other things equal, a higher property tax will lower the value of housing and other property in the community. The critical question is, how much? If the degree of capitalization is 100 percent, then 100 percent of the differences in tax rates among communities is offset by other housing costs. The seeming $800-a-year tax break in a low-tax town is offset by an $800-a-year higher mortgage payment or other cost of buying a home, such as forgoing interest and dividends on other types of investment. If capitalization is only 50 percent, then the seeming $800-a-year tax break on the house in the low-tax town is offset by an extra $400-a-year mortgage payment.

Yinger’s group examined a large sample of homes in several Boston suburbs which had been underassessed relative to newer homes in the same community. After a Massachusetts court decision ordered uniform assessments in the 1970s, the tax bills on the underassessed homes rose and those on the formerly overassessed homes fell. By observing sale prices of the same homes over a period of time, the study estimated how much the tax changes affected (“were capitalized in”) the value of the homes.

Their Boston-area study found that there had been capitalization of tax advantages to underassessed homes in every community, but much less than they expected. In their best sample, only about twenty percent of the previous tax differences (which were wiped out by court-ordered reassessment) had been reflected in the price of housing. A $300 annual tax break for a favored (older) property should have resulted in a $10,000 premium over a disfavored (newer) home, using the Yinger group's infinite time horizon and a 3 percent discount rate. But in fact the tax break yielded, in their preferred sample, only about a $2,000 value differential. In this seemingly ideal experiment, little capitalization of tax differences took place. Moreover, capitalization varied a great deal in their sample, ranging from 9 percent in Arlington to 79
percent in Belmont. If capitalization is supposed to guide public policy, it seems both weak and uncertain in its effect.

The reason for incomplete capitalization in the Yinger study had nothing to do with the failure of participants in the housing market to notice tax differentials. The failure had to do with the design of the study. On reflection, the authors concluded that participants in the housing market had anticipated, well before the court decision that ordered the reassessments, that the tax differentials would not be permanent (Yinger et al.1988, p. 125).

Homebuyers did not necessarily know that there would be a judicial mandate to reassess at market value. They simply did not think that such blatantly unfair and illegal assessment differentials would last for long. Imagining looking to buy a home in Wellesley, Massachusetts (one of the towns in the sample) in the early 1970s. You look at some homes there and notice that the taxes on similar properties varies a lot. You ask why, and someone — the homeowner, the realtor, the tax assessor — will have to admit that not only is it unfair, but it is contrary to state law and the state constitution.

How long would you expect such differentials to last? One sure answer is, not forever. Indeed, you might have gotten wind of a lawsuit that was in the works to rein in these practices. But the answer you get could vary from town to town, depending on the opinions of the real estate professionals who specialize in particular places and the politics of individual towns. It should be no surprise that the tax differential should be capitalized as if it were not going to last and that capitalization should vary from town to town.

3-6 Capitalization of Anticipated Taxes Is 100 Percent

I have reviewed the Yinger group’s flawed (by its authors’ admission) study because I’ve encountered several economists who cite it as evidence that capitalization is weak, and my own reading of their book initially left me with that impression, too. Without capitalization, the homevoter has less incentive to do the right thing; doing good is not aligned with doing well. Here I describe two studies whose samples did not suffer from homebuyers’ uncertainty about future policy changes. Both find nearly 100 percent capitalization of tax differences.

A clever study by A. Quang Do and C. F. Sirmans (1994) looked at homes in San Diego County in the 1980s that had been built by developers who had agreed to the terms of a “Mello-Roos” bond. This special bond (named for its legislative sponsors, not for laid-back marsupials)
was designed to assist growing California communities that were strapped by the constraints of Proposition 13, which rolled back property taxes in 1978. (More details are in section 4-8 below.) Both the tax-rate and assessment limitations of the initiative made it difficult to provide for new schools in growing communities after 1978. Because Proposition 13 did not allow the older homes to be taxed more, the new homes had to bear the entire burden of building new schools through special taxes to finance the Mello-Roos bonds. But kids from the older homes could attend these new schools just like everyone else.

Mello-Roos bonds were paid for by a tax on the new homes, not the old ones, but the public services the bonds financed were the same for all. Do and Sirmans found that the value differences between old and new housing was 100 percent capitalized at a 4 percent rate of interest applied over the 25 year life of the Mello-Roos bond. Because 4 percent is within a point of other estimates of the real (inflation-taken-out) interest rate at the time, I take this study as evidence that a fully anticipated tax differential will, in an active local housing market, be fully capitalized.

The reason for the difference between Do and Sirman's result and that of the Yinger study is that the Yinger group erroneously supposed (at the beginning of their study) that homebuyers in the Boston area thought the tax favoritism would last forever. It did not; the Massachusetts courts ordered reassessments, as was required by state laws that had been flouted in practice. In California, the ultimate source of the tax differential was Proposition 13, an amendment to the California Constitution that has proved immutable since it was approved in 1978. Thus the homebuyers in Do and Sirmans' California sample could look at a $700 difference in taxes between two otherwise identical houses — one in the Mello-Roos district, and the other outside of it but in the same school district — and figure the difference in present-value terms over 25 years, which amounted to about $13,500. They thus paid $13,500 less for the new home than they would for an otherwise similar home outside the Mello-Roos district.

This is the same sort of calculation that homebuyers can make when examining homes in different jurisdictions outside of California. Oded Palmon and Barton Smith (1998) challenged the Yinger study directly, noting that its theoretical capital cost was set too low, which led the Yinger group to expect more capitalization than they found. For their empirical work, they found a Houston-area sample of special taxes for various planned communities whose service levels (mainly water and sewer) were identical. The taxes were different, however, because the bonds
that financed the improvements had been issued at different times. Some had interest rates higher than others, and rates did not change for the life of the bond. Subsequent home buyers thus faced different tax liabilities for the same services. Palmon and Smith found that anticipated differences in tax liabilities among the different communities were 100 percent capitalized in home prices. The differences in tax liabilities were expected to be permanent because they were perfectly legal.

I conclude from these studies that persistent property tax differences among homes within the same housing market will be fully capitalized. Less than full capitalization can usually be explained by two factors: Potential homebuyers may not expect the current annual differences in taxes to last long (as in the Massachusetts case examined by the Yinger group), or relevant differences among the communities, such as school quality or attractive views, are known to buyers and sellers but not to econometricians.

3-7 House-Value Capitalization Implies Zoning

It is important to understand that the existence of capitalization implies a critical precondition. To discover that especially high (or low) public-school test scores are capitalized in the value of owner-occupied housing, as many studies have found, implies that access to schools in that community is not free. Since access to schools is typically governed by residence in the community, it follows that capitalization is evidence of an inelastic supply of developable sites. (This means that home construction in the community does not respond readily to increases in their price). This implies in most cases that someone besides the private owners of land has to give the go-ahead to develop additional housing units.

Zoning and related land-use controls generate this community-wide inelasticity. To see why, consider the analogous stock-market condition. When stock-market followers learn that a drug company is about to get FDA approval for its new treatment for cancer, the news is quickly translated into higher prices for the ownership of this stock. This could not happen if ownership in the company were perfectly elastic in supply. The supply is limited to those who had previously purchased the stock.

This does not mean that the stock cannot be traded. Indeed, an extensive market in stocks is necessary for capitalization of the good news into the higher price. Exclusion from ownership is always a conditional exclusion: People who do not own the stock have to get the current owners'
permission to obtain shares. Furthermore, the existing owners retain the right to limit the issuance of new stock in most corporations. They will approve it if the issuance will raise the value of their ownership shares by, for example, obtaining funds (at a lower cost than borrowing) to acquire more capital to produce the new drug.

A drug company's ability to conditionally exclude new owners is analogous to a local government's ability to exclude new residents. At one level, simple ownership of property allows each individual homeowner to exclude potential occupants. This is analogous to the individual stockholder's ability to exclude potential buyers of her shares. More critical for my purposes is the collective ability by homeowners to control net additions to the number of housing units in the community, just as stockholders can collectively control (via voting or via their elected board of directors) net additions to the number of ownership shares. Collective control is necessary because some desirable characteristics of the community are subject to congestion by additional residents. If a local public project — a park, for instance — is subject to crowding, which lowers its value as more people use it, the local government must be able to limit net additions to the housing stock in order for the benefits of the park to be reflected in existing home values. Zoning and other strands in the web of land-use controls are a way of doing that.

3-8 Local Governments, Not the States, Can Capitalize

Stuart Gabriel raised an important objection to my exclusive focus on local government. He pointed out that the many quality-of-life studies by economists seem to show that the good and bad things that states did in the public sector showed up in home values. Unlike the many popular studies of “best places to live,” which rank places by a laundry list of qualities, economists focus on housing prices and, to a lesser extent, wage rates as clues for where in the country people want to live (Jennifer Roback 1982). The idea is that nice places will attract immigrants and raise housing prices there. (The effect of wages is more complicated. Attracting more workers may depress wages, but firms may also move to amenable areas to take advantage of the labor pool, thus bidding up local wages.)

My reasons for neglecting states are three. First, the states are large in land area. Most economic activity occurs in urban areas, which account for less than four percent of the lower forty-eight's land area. More of the land in every state, including densely populated Rhode Island, Delaware, and New Jersey, is covered by forests, cropland, pastures and open space than by
urban and transportation uses. States would have to be able to severely limit development on the vast majority of their land area in order to “conditionally limit” additional development that was attracted as a result of policies that had a positive net benefit on land values. Now, some states, most notably Oregon, Vermont, and Hawaii, have moved in the direction of limiting development outside of their urban areas. But even in these three states the amount of land still available for development is huge compared to that within municipalities.

The second reason that the states are different has to do with their politics. Because they are large in land area and population, the median-voter model, which applies well for local government (as shown in section 4-11 below), is more likely to be compromised by interest-group activity in the state capitol. Employment-based interests will be more influential in state politics and less so in most local governments. States are eager to attract and retain high-paying employers (DeBartolome and Spiegel 1995), and there is evidence that better schools and other public services are an effective bait (Jay Helms 1985). But the benefits from statewide success in attracting employers usually accrue to groups organized around employment categories rather than to property owners. Statewide taxes to finance the better schools are diffused to a larger group of voters than at the local level, and the benefit/cost discipline that homevoters impose on locally financed schools is largely absent at the state level.

A final reason to exclude the states is that their ability to capture net benefits in land values is limited by the U.S. Constitution, which does not permit states to restrict immigration from other states or direct statewide benefits exclusively to pre-existing residents (Edwards v. California 1941). This ban is not absolute — in-state university tuition can be less than for out-of-staters, for example — but it inhibits implementation of the “visit and then go home” campaign associated with Oregon’s Governor Tom McCall in the 1970s. Local government regulations, however, get pretty much a free pass on the same issue. An insightful lawyer, Malcolm Misuraca, once argued that local government growth controls in California should be treated as if they were impediments to the “freedom to travel” among the states. Misuraca succeeded in district court, but the argument was firmly rejected by a federal appeals court in Construction Industry Association v. City of Petaluma (9th Cir. 1975). No one has successfully raised it since.
3-9 Zoning Is an Elastic Community Property Right

Robert Nelson (1977) and I have said for a long time and in many places that zoning is best thought of as a collective property right whose benefit inures to the politically dominant group of the municipality that does the zoning (Fischel 1978; 1985). The text of zoning laws, however, does not lend much support to my assertion that the laws offer existing homeowners the ability to “conditionally exclude” additional land uses.

A typical American zoning ordinance looks as if it is setting the use of land for all time. The ordinance adopts a map that divides the municipality into various districts in which certain activities and structures are permitted and others are excluded. The details of what is permitted can be mind-numbing and so convoluted as to confuse even the people who are supposed to administer it. (I was on a zoning board for ten years in a town with a relatively simple, 80-page ordinance, and confusion often reigned.) The number of structures permitted on the lot, their placement on the lot, building height, parking requirements, water and sewer connections, number of unrelated renter-occupants, and frontage on public streets were all subject to regulation.

Some uses are permitted at the discretion of administrative boards (zoning and planning commissions), but their discretionary authority is not so large as to suggest an easy transfer of development rights from the community to development-minded landowner whenever the latter was willing to offer in-kind compensation. My local zoning and planning boards did a little bargaining with developers, but always within the confines of an ordinance that set close parameters on our discretion. We couldn't allow an apartment house in a single-family district, even if the neighbors would not have had a conniption over such an idea. Nor is there much in the planning documents that supposedly guide the zoning regulations to suggest property value maximization as the goal. The usual list of goals in master plans reads like a child's wish-list, assembled without recognition that one goal, say, affordable housing, might conflict with another, say open-space preservation.

Focus on the characteristics of the documents and administration of ordinances obscures the most important aspect of any zoning law: It can always be changed. It is, after all, a local law. If the local government wants to change its regulations, there is precious little in the state enabling legislation, the state constitution, or judge-made law to prevent it from doing so. Zoning laws are
constantly amended, and most are rewritten entirely every few decades. A zoning law that fails to conform to the demands of the body politic is a temporary law.

Change may be slowed by procedural requirements. For example, some courts are hostile to “spot zoning,” a zoning change that affects only one or two parcels. Changes are also slowed by elaborate notice requirements and, in some jurisdictions, the requirement of an environmental impact statement. But the very existence of procedural requirements makes it clear that change is expected. A few developers may get the benefit of an unintended loophole in an old zoning law, but once the law is changed, as it soon is after the loophole is discovered, the town has no obligation to allow developers in otherwise similar circumstances to do the same thing as their lucky (or foresighted) compatriots.

Some developers do anticipate the changes and build before the ink is dry on the more stringent regulations in order to vest their rights (David Dana 1995). (Most zoning laws permit previously established, nonconforming uses to continue if they are not otherwise noxious.) My favorite for candor was the landowner who put up several buildings at the edge of Lake Washington in Kenmore, a growing suburb of Seattle: “It was more a defensive move than anything else,” he was quoted in the Seattle Post-Intelligencer. “If we were to do nothing, we could end up with a wetland and a wildlife area” (December 12, 1998, p. D4). But the cost of building and maintaining currently unprofitable structures keeps most other landowners from using this option.

3-10 Zoning Is a Powerful Constraint on Development

Most of the evidence in support of the property-rights view of zoning is indirect. One source is the many capitalization studies, which show that zoning classifications do make a difference in the value of property (Fischel 1990). In Southern California, for example, a rezoning from agriculture to single-family residential can raise the land's value enormously (Brownstone and DeVany 1991). If zoning were a will-o-the-wisp, malleable at the mere request of developers, it is difficult to see why zoning classifications should contribute to differences in the value of otherwise similar properties.

Some economists have explored the theoretical conditions in which the unzoned land market is capable of doing the work that zoning is alleged to do (Epple and Platt 1998; William Wheaton 1993). If the demand for housing and public services by various income groups is sufficiently
different, the groups may sort themselves naturally into different communities. If such conditions hold, “exclusionary” zoning would just be validating the market. But empirical studies of whether zoning follows the market in other respects indicates that it does not (McMillen and McDonald 1991; James Thorson 1994; 1997).

Thorson, for example, found that after McHenry County, a Chicago suburb, adopted agricultural zoning, the previously permitted pattern of single-family development was radically changed. (The case validating the rezoning is Wilson v. McHenry County [Ill. App. 1981].) After an initial spike of rural building induced by developers who anticipated the new restrictions and got their permits before they took effect, development was moved toward existing towns that did not have such restrictions. It is difficult to believe that developers in a previously hot market for homes would have moved in this direction without the visible hand of government regulation.

Even without the aforementioned empirical studies, the idea that zoning is an ineffectual constraint on development is completely at odds with the attention paid to it by otherwise rational people. Zoning is regarded by most scholars of local government, not just your zoning-starred author, as the most important municipal function (Richard Briffault 1990a, p. 3). A dominant reason for municipal incorporation in Los Angeles in the 1950s was to transfer zoning from a pro-development county government into the hands of local homeowners (Richard Cion 1966). As I will described in more detail in chapter 10, King County (Seattle) incorporations in the 1990s likewise were motivated primarily by a desire to obtain local control of zoning.

Local control of zoning is so popular that even the most vigorously interventionist courts have had little success in reforming it. The New Jersey Supreme Court was in the forefront of legal attacks on “exclusionary” zoning during the 1970s and 1980s. The Mount Laurel decisions aroused enormous political resentment. They were so unpopular that legislative leaders threatened not to reappoint the state's Chief Justice if he didn't lay off. The threat appeared to work. In Hills Development v. Bernards Township (1986), Chief Justice Wilentz affirmed the legislative response that actually undermined most of the Mount Laurel II (1985) remedy by removing the courts from the fair-housing scene. Shortly thereafter, Governor Kean stretched his political capital to induce legislators to approve the chief justice’s reappointment, although there is no record of a specific quid pro quo (Kirp, Dwyer, and Rosenthal 1995, pp. 137-43.)
Chief Justice Wilentz may have had in mind his predecessors’ difficulty in controlling the popular demand for local land-use controls. Back in the 1920s, when zoning was spreading rapidly, the New Jersey courts bravely bucked the trend by construing the police power to encompass only traditional nuisances, striking down attempts to separate commercial and residential uses (State v. Nutley 1924). Even after the U.S. Supreme Court put its imprimatur on zoning in Euclid v. Ambler (1926), the New Jersey Court distinguished its string of pro-developer decisions from both *Euclid* and those of other states (Oxford Construction v. Orange 1926). Within a year of the *Oxford* decision, however, the state had passed a constitutional amendment specifically reversing the New Jersey Court’s narrow construction of the police power in zoning (National Municipal Review 1927; Lumund v. Board of Adjustment 1950, p. 584.)

### 3-11 Shopping for Communities in the Tiebout Model

A second precondition for capitalization of local community characteristics is that home buyers must have a choice of different communities and be aware of differences among them. The famous Tiebout model posits that there are numerous communities and that households can shop around among them for the mix of services they prefer. This process of “voting with one's feet” was advanced by Charles Tiebout (1956) as a way for people to reveal their preference for local public goods. He regarded this as a solution to the theoretical problem posed by Paul Samuelson (1954) and Richard Musgrave (1939). (See the biographical note on Tiebout in section 4-3 below. Many of my fellow economists pronounce his name tee-BOO, which is correct in French but is not how his family pronounces it, which is TEE-bo, with a long o.)

Public goods — the kind that are equally available to all if they are provided — cannot be supplied by the market because of the “free rider” problem. We free ride on aerial fireworks displays when we decline to pay for them by private subscription, even though we enjoy them, knowing that if they will be paid for by someone else we can still enjoy them. Many of us do the same for public radio and TV.

Whether Tiebout resolved this theoretical problem is not entirely clear, but his model nowadays stands for the proposition that local government provision of geographically isolated public goods is superior to provision of the same goods by higher units of government. Tiebout's model is the touchstone of that part of public economics that deals with any aspect of local
government. I shall describe the assumptions and their relevance to experience, at least in the
United States. I think that the important assumptions do correspond to reality and that Tiebout's
omission of political behavior is easily fixed by adding homevoters.

A key assumption is that there must be a large number of autonomous communities. This is
not much debated. As I showed in section 2-2 above, there are about 25,000 general purpose,
local governments in the United States, and almost as many school districts. School districts are
more constrained by state law in what they can do, but, except in those states that have become
highly centralized in their financing of education, such as Hawaii, California, and New Mexico,
there are fiscal as well as qualitative differences among them. That school districts do not
correspond perfectly with municipal boundaries is less compromising of the model than it
sounds. Municipalities are capable of dealing with their neighbors to promote their joint school
district’s interests.

Most of the United States population lives in metropolitan areas of more than 500,000, and
most of these areas have at least a score of local governments. Several of the largest metropolitan
areas (more than 1 million population) have hundreds of local governments. I once attempted to
get a count of local governments in large metropolitan areas to get a sense of whether, by
traditional industrial organization standards, the four largest local governments had any kind of
market power on the supply of new housing based on their control of land area (Fischel 1981). In
only a handful of metropolitan areas, such as Baltimore, Washington, and Miami, where county
governments often supplant cities, did the four largest local governments control more than 30
percent of the land in the built-up part of the metropolitan area. If local government was thought
of as an “industry,” its industrial structure would look far more competitive than the major
manufacturing industries in the United States. Even in rural areas, it is rare for potential residents
not to have at least three or four local governments and school districts within a half-hour's drive
of their jobs. (Most rural residents nowadays are not farmers, so they are usually not tied to living
where they work.)

3-12 Homebuyers Are Aware of Community Differences

Aside from assuming a choice of numerous municipalities, Tiebout applied ideas about the
nature of consumers from standard economics. Potential residents of these many communities are
numerous, mobile, and knowledgeable about the conditions of public services in these
communities. They select the community that best matches their preferences. This set of assumptions is also uncontroversial among economists, though it is not hard to satirize: “Oops, I just noticed that the shade-tree commission is not doing its job. Time to sell the house and move to Arborville.”

My defense of Tiebout's assumption about mobility is that people move for reasons that typically have little to do with local government. Tiebout shoppers may begin their search when they graduate from school and take a job; when they get married; when they take a new job too far away to stay in their present home; when they have children and need a larger home; and when they retire and want a warmer climate or a smaller home. On all of these occasions people have an opportunity to shop for a community and a school district as well as for homes with larger lots or more bathrooms. Since Americans make these moves about once every four years, there is an active market in communities as well as in homes.

The primary economic evidence that homebuyers are aware of fiscal and public service differences among communities is, of course, capitalization. Wallace Oates (1969) was the first to make this point and to provide the econometric evidence. (In so doing, Oates gave an enormous boost to Tiebout's 1956 article, which had previously been given a cool reception.) Using a 1960 sample of northern New Jersey communities, Oates concluded that “if a community increases its tax rates and employs the receipts to improve its school system, the coefficients indicate that the increased benefits from the expenditure side of the budget will roughly offset (or perhaps even more than offset) the depressive effect of the higher tax rates on local property values” (1969, p. 968).

Oates's study has been replicated using different samples, time periods, measures of school quality, local services, and econometric techniques (Dowding, John, and Biggs 1994). Capitalization studies are now an undergraduate exercise, and it is difficult to interest journal editors in new studies without a major twist. Political scientists, however, have wondered how homebuyers know to gravitate, Tiebout style, to the better school districts. It is true that information that allows homebuyers to compare communities' public services is abundant. Real estate salespeople provide it upfront in booklets and websites about schools and amenities and on the listing sheet for individual properties.
Do homebuyers actually use such information? The direct evidence is surprisingly slim. Teske, Schneider, Mintrom, and Best (1993) surveyed residents of Long Island, New York, suburbs to test their awareness of fiscal differences. They asked respondents to rank their own town's tax rate and spending per pupil with two others nearby and found that only 21 percent got the rankings right. Teske and company argued in defense of the Tiebout model that the glass was half full: When the sample was winnowed of people less likely to care about schools, their awareness score rose to near half.

In a related study, Schneider, Teske, Marschall, and Roch (1998) found that low-income parents seem able to select schools on the basis of educational quality, even though the parents' objective knowledge of school differences was even more limited than those of the Long Island study. As the subtitle of their article put it, “In the land of the blind, the one-eyed parent may be enough.” These political scientists, who cited no capitalization studies, have discovered for schools what I argued in section 3-2 was true for capitalization of tax differences: It does not take many knowledgeable buyers for markets to work.

Still, it does seem puzzling that markets can work with such apparently limited information. Political scientists Kenneth Bickers and Robert Stein (1998) took up this issue. They suggest that the explanation may be that homebuyers do not rely on formal data as much as on “informational heuristics” to locate preferred schools. Heuristics involve things like looking for neighborhoods whose residents are likely to demand better schools, such as, to use their examples, academics, Jews, or wealthy people. (“Forget the Boston area school guide; just give me Paul Samuelson's address.”) Bickers and Stein's telephone survey of households in the Houston area found that recent movers, and especially those with children, did gravitate toward schools with higher test scores, even though most respondents could not rank their school's scores accurately. Homebuyers, as opposed to renters, were especially savvy in ferreting out the higher-scoring school districts.

Bickers and Stein's heuristics seem analogous to the way I purchase a computer. I do not learn much about technical specifications. I mainly ask colleagues whose work and habits are similar to mine what they have purchased and how they have liked it. It seems reasonable to suppose that many people deal with complex goods in this way. Selecting a community on the Tiebout end of the house-hunting trip is less complicated than it sounds.
A third set of Tiebout's assumptions are usually dismissed as being patently unrealistic but irrelevant for most of the tasks at hand. Potential residents were said by Tiebout to have no employment, only income from nonlabor sources. This assumption served to divorce the choice of community from a specific location within the metropolitan area. The standard urban economics model (not Tiebout's) assumes that people have to go to work daily, and this forces them to trade off the cost of commuting longer distances to their jobs with the desire to have larger lots and cheaper (per square foot) housing. If residents had to locate near their jobs, their choice of communities would be limited. This would not work for the Tiebout model, and so Tiebout had to get rid of work.

In the real world of work and commuting, the number of accessible communities in most metropolitan areas is nonetheless large. Don't think in terms of people commuting from “the suburbs” to “the central city.” Jobs in most metropolitan areas are now enormously dispersed. Bruce Hamilton (1982) found that commuting patterns appeared to be almost random when compared with the predictions of the standard suburb-to-city-and-back model of urban economics. Urban households have for more than half a century been able to select jobs in multiple locations, not just in a central business district, and this has increased the number of communities among which homebuyers can shop.

The more problematical of Tiebout's “unrealistic” assumptions is that each community's public activities are enjoyed (or endured) within the community's boundaries, but not outside it. This is not literally true, of course. You can enjoy the streets and parks in other communities, and their traffic can spill over the usually invisible boundaries into yours. One can take this in two directions. The first is to argue that most local activities affect only their residents most of the time, and so that is the point worth focussing on. But the lasting questions in local public economics are the role of the community in the larger world. Island municipalities in a boatless sea are not especially interesting.

The other approach, which was taken up most systematically by Wallace Oates (1972), is to use Tiebout's no-spillovers assumption as a springboard for discussion of what Oates titled Fiscal Federalism. I am going to follow the Oates path in trying to integrate communities into their larger economies. Unlike Oates, I will dwell on the internal incentives for local governments to
adjust to the demands of the outside world instead of, as Oates emphasized back then, the external fiscal mechanisms that higher governments might use to get the locals to behave. For example, I will show in section 8-7 that intermunicipal pollution problems are usually restrained by a locally generated spirit of reciprocity.

Another of Tiebout’s assumptions concerned the size of the community. If communities could provide public services at a cost that was insensitive to how many residents enjoyed them, there would be no reason to have more than one community. So Tiebout assumed that the communities had some fixed asset that was valued by residents — a beach was his most-used example — that could not be easily reproduced. Thus the primary public attraction could become congested as more residents moved in. This allowed Tiebout to suppose that any given community had first a falling cost per resident for providing public services as its resident population rose, and then a rising cost as the population became still larger. Small communities would thus encourage growth to get more people to share the cost of services, and larger communities, which were close to their minimum average cost per resident, would discourage growth. They would manage growth by zoning, Tiebout supposed, though he did not describe how it would work in any detail.

3-14 Why Are Fiscal Advantages Persistent?

One problem with Tiebout's model, which he recognized, was that in a world where space and hence transportation costs mattered, a system of communities with fixed boundaries would be insufficient to accommodate all tastes for public services. There would have to be as many different communities as there were different demands for public services, and the variety of demands could be large. This means that for an ideal world, the ability to incorporate one's own community should be much easier than it is.

The theoretical objection to the Tiebout model is that in a world in which all preferences are satisfied, we should observe no systematic capitalization of differences among communities (Ross and Yinger 1998). After all, capitalization means that an acre of land is higher in value on one side of a municipal or school district border than an otherwise identical acre on the other side. It would seem that there would be gains from trade to be had by moving the border or by creating another jurisdiction that could replicate the desirable qualities of the more valuable jurisdiction.
Yet the evidence is that municipal boundaries, once established, are in fact difficult to change when they rub up against another city. Both consolidation and secession are rare (Epple and Romer 1989). The differences in value between communities indicates that people have to buy a more expensive home than they would otherwise want in order to get schools or other local services of a quality they are willing to pay for. It’s like the inefficiency of a tie-in sale: You have to buy the service contract along with the car, even though you might want only one of them.

I have two answers for this objection. One is the corporate model that I have adapted for municipalities. We do not find it theoretically objectionable that investment in business corporations should yield different rates of return. The higher rate of return of a dollar invested in Xerox in the 1960s or Microsoft in the 1980s provides an incentive for other companies to enter those businesses. Thus the high value of municipalities that manage their assets well and give the voters what they want at a low cost is a reward for homeowners in those places and a signal to other places that they should emulate them.

This is not an entirely satisfactory response, though. In the business world, competition and entry by other firms should eventually cause profitability of firms to converge to a normal rate of return, so that we observe over the long run little systematic capitalization. Xerox now gives ordinary returns, and Microsoft may soon, too. But there appear to be persistent differentials among municipalities, especially with regard to their schools. Ivy-League admissions directors of several generations have known that New Trier High School, located in a suburban-Chicago district, is as reliable a supplier of talented students as any pricey prep school. One would expect that advantage to be eroded as other Chicago-area districts figured out how New Trier does it.

The other answer to why municipalities don’t proliferate like amoebas is that homevoters have better reasons than business shareholders to be reluctant to divide existing municipal boundaries. In most metropolitan areas, secession is the only way to create the additional competition that would eliminate capitalization. As I have repeatedly emphasized, most municipal shareholders — homeowners — cannot diversify their risks. Aside from promoting political participation by homevoters, this high degree of risk makes voters reluctant to change institutional structures. An investor in a business corporation can easily change her portfolio if she feels returns are too low. But she can do so without radically changing her risks of investment. She knows that she has to take some additional risk to get higher returns, but she can do that without putting her entire portfolio on the line.
The typical homeowner is in no such position. To alter the boundaries of municipalities or school districts is to put much of his net worth on the line. There’s no way to put half of his home in one district and half in another. It should not be surprising, then, that nearly all states make it next to impossible for voters to secede from existing municipalities to form their own communities. Formation of municipalities from unincorporated, county-governed land is easier to do, but, as I will demonstrate in chapter 10, even those potential organizational advantages are usually grasped only after a concerted campaign to convince homeowners that their lot (figuratively and literally) will be improved under the new government.

The down side of the institutionalized aversion to entry in the municipal services business is that it retards competition. This means that some municipalities that work themselves into favorable fiscal positions will not find as many imitators as they would in the business world. Differences in home values due to fiscal advantages will persist longer than they do in the business world. I find this constraint less troubling than some — having even a limited menu is better in most cases than a metropolitan-wide prix-fix. Looked at from the point of view of the homeowner, fixed boundaries offer the security of knowing that the community that provides many of the essential services to your largest and most durable asset will be the same in the next decade as it is in the present. (Section 11-13 will offer some “on the other hand” considerations for allowing municipal secession.)

3-15 Hamilton Introduced Fiscal Zoning and Exactions

The major amendment that the Tiebout model required was to match zoning, which Tiebout mentioned only in passing, with local taxation, which he ignored entirely. Most local governments use property taxes to fund local services. Property taxes are typically uniform per unit of value, but the right to enjoy the services financed by the tax is not tied to the payment.

Developers thus have some incentive to build units that will pay less in property taxes than the users of the units will get in services. The developer would be able to sell such units at a higher price that reflected the fiscal gain. (The gain would be tempered by her customers worrying that their fiscal benefits would be eroded by subsequent unchecked development.) If there were no constraint on such enterprise, the Tiebout system would implode as communities found themselves unable to finance a distinctive level of services.
Bruce Hamilton (1975) repaired Tiebout's omission by proposing that municipalities could use zoning to indirectly specify the taxable property for each new development. If the average home in the village was worth $200,000, then the new average home would have to be at least $200,000. (No zoning law can legally specify a minimum dollar value, but the matrix of lot-size and quality standards that are legal can come pretty close.) Under the Tiebout-Hamilton conditions, the local property tax becomes an unavoidable fee for services rendered. New construction “pays its own way” in municipal costs. The property tax has no deadweight loss because homebuyers get exactly what they pay for (since they have a choice of many communities’ service packages), and they pay for exactly what they get (since local zoning sees to it that they cannot shirk by building a smaller than average house).

Critics of this model concede that if zoning did work so perfectly, it would indeed give the result that Hamilton claimed, but they argue that zoning is too crude to make such fine distinctions (Mieszkowski and Zodrow 1989). I argue that the critics greatly underestimate the creativity of local governments (Fischel 1992). In the previous example, suppose that the village had $100,000 per household worth of commercial and industrial tax base in addition to its average home values of $200,000. Now the new home would have to bring with it $300,000 in tax base. It would seem that it could do this only by demanding that new homes cost $300,000, which could upset the Tiebout sorting mechanism.

But in reality, developers and municipal governments can find their way around such problems. For example, the developer might propose a “mixed use” development of commerce and homes that worked out to $300,000 per new household so that the fiscal impact would be nil. But if such a deal could not be worked out and the proposed use was not anticipated to pay its own way from property taxes alone, the developer might be asked to provide financial benefits to the community to make up the fiscal deficit. These might be dedicated facilities that benefit the entire community, or they might be side payments called “exactions” or, if regularized by a schedule, “impact fees” (Blaesser and Kentopp 1990).

Such payments are controversial not because they charge too little, but typically because they charge more than the development seems to add to the municipality's fiscal costs. Courts have paid some attention to them by finding that the more imaginative arrangements constitute an unconstitutional “regulatory taking.” In Dolan v. Tigard (1994), the U.S. Supreme Court tried to limit exactions to amounts that were “roughly proportional” to inconvenience caused by the new
developments. Commentators worry that this will inhibit transactions and end up making zoning more exclusive (Lee Fennell 2000). Wise developers know, however, that it is better to pay reasonable exactions than to litigate them. Community demands for specific side payments are likely to be struck down in some state courts as illegal “contract zoning” (Judith Wegner 1987). To deal with this, developers offer to “donate” something of value to the community, knowing that if they do not, no rezoning or other regulatory accommodation will be forthcoming.

Many commentators nonetheless claim that local governments continue to subsidize sprawl because property taxes do not cover the cost of infrastructure development. The Real Estate Research Corporation's study, *The Costs of Sprawl* (1974), was a pioneer in promoting this myth, which continues to be an article of faith among the anti-sprawl set. It overlooks entirely the exactions process, which has been a widely used tool in American land-use controls for at least half a century (Heyman and Gilhool 1964). Alan Altshuler and Tony Gómez-Ibáñez (1993), who examine the exactions process and review the literature, conclude that, if anything, exactions extract payments in excess of the social costs of development.

Nor are there any special mysteries about how to do fiscal zoning. For local public officials who want development to pay its own way (as all who wish to retain their jobs typically do), how-to manuals such as *The Development Impact Assessment Handbook* (Burchell, Listokin, and Dolphin 1993) are widely available. And the process works to the advantage of established homeowners. Marla Dresch and Steve Sheffrin (1997) undertook a nuanced study of how market conditions determine who pays for exactions in California: When the housing market is strong, the buyers pay in the form of higher prices, but otherwise the burden is shifted back to developers and landowners. Established homeowners are insulated from the burden in either case.

### 3-16 Communities Can Have Heterogeneous Housing

Hamilton's original (1975) amendment to the Tiebout model characterized the communities as insisting on a degree of homogeneity of housing styles and family income that is both appalling and unrealistic. Homogeneity does have its advantages. Benham and Keefer (1991) found that the rare group of firms that successfully operated under democratic management and ownership, voting per capita rather than per share, had to be small and homogenous. Homogeneity reduces the temptation for majoritarian transfers of assets within municipalities that Dillon’s rule and other state limitations on municipal activities were concerned about.
Nonetheless, homogeneity can be taken too far. The homogenized, plain vanilla suburb that the Tiebout-Hamilton model contemplates is everywhere under fire. But critics overlook that Hamilton (1976) quickly modified his model to allow for heterogeneous communities. Rich and poor can live in the same community in the revised Tiebout-Hamilton model provided that the potential stock of each type of housing is foreseeably limited. This helps explain why local governments in fact can have a fairly wide variety of income classes and housing types within them, as Howard Pack and Janet Pack (1977) found, and still conform to the Tiebout-Hamilton model.

To see why the model is unaffected by limited heterogeneity, suppose that a community is zoned such that half of the homes will be for the rich, and half will be for the poor. Because the schools and other public services will be equally available to all, this results in a transfer of wealth from owners of rich homes to owners of poor homes. (Actually, if the zoning is foreseen before construction of the homes, the transfer will be from one set of landowners to another, but I will stick to “rich” and “poor” homeowners to make the argument clearer.) If the annual transfer amounts to $1000 from rich homeowner to poor homeowner, homes for the rich will eventually cost the present value of $1000 a year less than homes in a homogeneous rich community. (At an interest rate of 5 percent and a long time horizon, this would be about $20,000 less). Homes for the poor in the mixed community will cost about $20,000 more than those in another benchmark community of all poor people.

The key to this calculation is that the number of homes in each category must be fixed for the economic future. If the rich can remove their homes to avoid the transfer, it won't work, and if the poor can pour into the community without restriction, it won't work, either. For this process to work, then, the zoning laws must not only restrict the poor from entering beyond some anticipated number, but the rich must also be prevented from subdividing their homes to accommodate the poor and then leaving. Zoning laws accomplish both of these by having limited districts for smaller homes and by preventing larger homes in single-family home districts from converting to apartments or two-family homes. The homes don't even have to be built for this to happen, as long as the zoning laws are in place and are expected not to change much. (How do I reconcile this with my previous paean to zoning's plasticity? Although it is easy to fine-tune a zoning ordinance with annual amendments to close loopholes and deal with unforeseen contingencies, most general zoning categories persist for decades.)
The people who gain or lose from rezonings are those who owned the land prior to the anticipated implementation of the new zoning laws. After a rezoning from large lots to smaller lots, which would accommodate the poor, the buyers of “rich” homes pay less for the land, and they have money left over to pay their somewhat higher property taxes. The buyers of “poor” homes pay more for them, and so have less money left over after paying their mortgage. Capitalization levels the economic field for all subsequent players (Bruce Hamilton 1979).

3-17 Heterogeneity May Increase Home Values

My assumption in the foregoing analysis has been that the transfer is zero-sum — what the original poor gain is what the original rich lose. It does not have to apply if there are beneficial peer-group effects from mixing rich and poor, as some economic theorists have argued there are (Fernandez and Rogerson 1996; Roland Benabou 1996). A community or a school district with a mix of residents from various income levels or other characteristics may be more valuable to potential homebuyers than a plain vanilla jurisdiction.

Most of the large, privately planned “new towns,” such as Reston, Virginia, Columbia, Maryland, and Foster City, California, have a mix of building types to appeal to a heterogeneous market (Richard Brooks 1974; Lynn Burkhardt 1981). The developer of Foster City strongly implied in a conversation that such a mix was a profit-maximizing strategy (Fischel 1994). Celebration, Florida, which was developed by the Disney Corporation, likewise sought a mix of housing types in order to promote a mix of income levels within the community, although its live-in chroniclers, Douglas Frantz and Catherine Collins (1999, p. 219), still fault it for not offering subsidized low-income housing within its borders.

There is also some evidence that judicious mixing of students makes for better education (Henderson, Mieszkowski, and Sauvageau 1978). Most selective, private colleges and prep schools recognize this benefit by offering scholarships to lower-income families and attempting to admit a mix of students from various backgrounds. It is my impression that many affluent buyers are eager to avoid the modern stigma of living in a white-bread suburb. Public planners and private developers are more than willing to cater to that taste. Suburbs such as Oak Park, Illinois (west of Chicago), Shaker Heights, Ohio (south of Cleveland), and Maplewood, New Jersey (west of New York City), proudly advertise their successful strategy of maintaining a
racially integrated community, and the casual evidence is that it has done nothing bad to their housing prices.

This is not to say that “exclusionary” zoning — regulations whose effect is to preclude mixing of rich and poor — is a problem that can easily be left alone. My point in these last two sections is only that localities are not uniformly opposed to heterogeneity of homes and population. There is much variation within most suburbs already, and a sizable fraction of the suburban population seems to think it is just fine.

3-18 Conclusion: The Tiebout Model Works OK

My goal in this chapter has been to persuade the reader that the homevoter hypothesis rests on plausible behavioral and institutional foundations. The capitalization of differences in local taxes, amenities, and public services is well established. The housing market may not be as efficient as the stock market, but its imperfections are not so great as to make the comparison irrelevant. Municipalities are capable of controlling and channeling the broad flows of their urban growth, and there is plenty of evidence that these controls have real bite.

The Tiebout model is likewise a decent description of reality. Indeed, it is a good description of realty. The old saying that real estate’s three rules are “location, location, and location,” is also a summation of what drives the Tiebout model. People moving to a new community pay close attention to the quality of local public services and the taxes they expect to pay.

I will readily concede that many municipal decisions don’t seem to fit the rational mold in which I have cast them. Few municipal officers would say their job is to maximize property values. But close examination of the declared objectives of supposedly profit-maximizing business managers can also uncover a gulf between theory and practice, a fact economists have wrestled with since its revelation by Richard Lester (1946). Compared with the messy decision processes that go on in business corporations, municipalities don’t look so irrational, especially when we keep in mind that municipalities have to make most of their decisions in full view of the public. It might be best to judge both types of corporations by what they do, not by what they say.