Chapter 18

Urban Economic Development

Urban development is a popular notion that seems to promise something for everyone. Who can quarrel with the idea that richer is better? Prosperity reduces crime, increases education, boosts minority achievement, pays for better houses and a cleaner environment, and cuts poverty. Because of increasing returns to scale, more jobs mean new opportunities for specialization, for escaping monopoly, for finding better matches, for building bigger and better common facilities, and these costs can be spread over a wider base. Focusing development on the central parts of older cities promises to curb sprawl without sacrificing the benefits of growth—and at the same time to improve jobs for poor people and minorities.

Development makes cities great. New York is a great city because it built the Erie Canal and it dominates finance, law, advertising, and entertainment—not because it prices water right or zones efficiently. Concentrating, as I have done, on the mechanics of city life seems to miss the point—to pay attention to the windshield wipers while ignoring the car's engine. The gains that a wise development policy can bring a city and its people seem huge compared with the gains that might be reaped from the other types of policies I've discussed. A rising tide lifts all but the leakiest of boats.

In this chapter we will examine urban development policies. We'll engage in two levels of analysis. In the first part of the chapter, we'll adopt the point of view of an official or a landowner in a particular city, and ask how various policies affect people and prices in that city, holding policies in other cities fixed. In the second part, our point of view will be national or global. What happens when many cities pursue economic development strategies, optimal or otherwise? Do they cancel each other out, or does some residual benefit—or harm—bubble out of the mixture? What policies can national or state gov-

To get the most out of this chapter, you should be familiar with these concepts: average cost, closed-city case, deadweight loss, externalities, increasing returns to scale, localization economies, marginal cost, open-city case, Pareto optimality, potential Pareto improvement, and urbanization economies. You can find these terms in the Glossary.

ernments adopt to make economic development competition among cities more beneficial to the public at large?

The phrase "economic development" refers to several different concepts, and so at the outset I want to clarify which of these concepts we'll be concerned with. Sometimes economic development means the study of poor countries—what makes them poor, and what policies can be used to make them richer. Why textile manufacturing never took hold in India and whether China should reduce foreign direct investment are questions addressed by economic development when it's conceived in this way. This version of economic development won't be our subject. It's very important, but doesn't belong in this book.

Instead we will be concerned with another usage, one more common among people who work in city governments. In this context, economic development refers to activities and policies designed to increase the amount of market activity taking place in a particular city—bringing in jobs, for instance. Economic development in this sense examines such questions as how much cities should be willing to pay to subsidize sports stadiums, and whether slum areas should be knocked down and replaced with expensive shops.

Economic development (poor-countries version) and economic development (U.S.-cities version) resemble each other. Both are concerned with places and generally ignore the possibility that a lot of the people living in those places might be much better off if they left and went elsewhere (this is a lot more feasible with U.S. cities than it is with big countries like Indonesia or Brazil). The U.S.-cities version, however, often seeks to encourage immigration from outside, while the poor-countries version doesn't.

Some of the tactics used are also the same. The Beijing Olympics in 2008 might (or might not) contribute to China's economic development (poor-countries version), just as the 1996 Olympics might (or might not) have contributed to Atlanta's economic development (U.S.-cities version). But poor countries also consider many tactics that U.S. cities don't: enhancing agricultural productivity, for instance, building hydroelectric plants, or imposing tariffs or exchange controls. U.S. cities can't do these things and so never discuss them. Thailand has a monetary policy; New York City doesn't.

Poor countries also consider such measures as strengthening the rule of law, developing market institutions, reducing corruption and nepotism, and increasing government accountability. Some scholars even make a distinction between growth—how fast incomes increase—and development—how well the social and political underpinnings of economic growth are being put in place. Almost none of these issues figure in discussions of economic development in the U.S.-cities version, although there's no reason why they shouldn't. One shouldn't presume that all poor countries have lousy cultures and all U.S. cities have great cultures.

More fundamentally, the difference between the two topics is huge: U.S.

cities are trying to take some of the most productive, tiny pieces of real estate in the world and make them more valuable; developing countries are trying to take huge numbers of impoverished people and improve their living standards. Since a reasonably fertile imagination can usually find a few commonalities between any two randomly chosen topics, it's not surprising that a few analogies can be drawn—the most important being the shared idea that wise and careful governance helps. Nevertheless, economic development (poor-countries version) is different from economic development (U.S.-cities version), the subject of this chapter.

I. Economic Development in One City

A. Why?

1. Does Anyone Benefit?

Why might it be good to have more market activity in a city than would otherwise take place through the normal workings of a modern (developed) economy? Practically any of the problems of markets, governments, or families that I have discussed in this book can lead to too little activity in a city—high taxes or bad sewers, inadequate buses or poor policing, excessively strict zoning or dysfunctional schools. When such a problem occurs, the response is obvious: fix the problem. In this sense, this entire book has been about economic development.

Some problems, though, can't be fixed, or their solution would require political revolutions that are unlikely to be seen in the immediate future. Property taxes, for instance, instead of land taxes, will almost certainly be used to finance much of local government for as long into the future as we can anticipate, and enterprises with increasing returns to scale, from candy stores to electricity transmission companies, are likely to price their products closer to average than marginal cost. Under these circumstances, any increases in market activity often have widespread external benefits.

A new office building that wouldn't otherwise have opened in town brings with it workers who buy soda in candy stores they wouldn't otherwise have patronized. The difference between the price they pay for the soda and its marginal cost is an external benefit. So are the property taxes the building pays. If the office building pays average cost for its electricity or for transmission of natural gas, another external benefit is generated. Notice that these external benefits arise not from any particular activity that goes on in the office building, but from activity in general.

New activity also brings with it the urbanization and localization economies I talked about in Chapter 2. Most of these benefits are external: knowledge and most innovation, for instance, and the lower prices that come about through specialization, more efficient queuing, and less monopoly power. Ur-

banization benefits come from any activity and affect any other activity, while localization affects only those firms in the same general industry.

Jobs can have external benefits, too. If more employment means fewer people are receiving welfare or unemployment insurance, the reduction in government expenditure is an external benefit. The extent (if any) to which employees are paid more than the minimum amount that would make them willing to do the work is also an external benefit; this may be substantial if the workers would otherwise have been idle.[1]

Jobs may also reduce the threat of some types of crime. Raphael and Winter-Ebmer (2001), for instance, find that positive economic-development events, like winning defense contracts, cut a state's property crime, and negative events, like increases in the price of gas, increase property crime. Higher unemployment for men also increases rape.

However, the external benefits of more market activity in a city, while they are often substantial, can sometimes be overestimated. First, remember that, in most cases, only part of a secondary expenditure counts as a benefit, not all of it. The entire expenditure on soda, for instance, is not an external benefit, just the difference between price and marginal cost. In particular, jobs are a benefit only to the extent that they pay more than their workers could make elsewhere or more than the value of their workers' leisure, whichever is greater. Paul Courant, in a famous essay on economic development (1994, p. 869), gives a good example to show why jobs should not be considered a benefit: "[Suppose] a locality decided to engineer a gold rush on land that had no gold. The local government could go out and buy the gold on the open market, and incur the cost of transporting it and burying it. The gold would then surely be worth digging up, but in the end all that would be available would be the value of the gold. The costs of transporting, burying, and digging would be lost forever."

Second, activity causes negative externalities as well as positive: pollution and congestion, for instance, storm-water runoff and accidents. Police, fire suppression, and trash pickup services are usually priced below marginal cost, as well as many mass transit systems at peak hours; the difference between marginal cost and price for these services is a negative externality.

Finally, increases in the price of land are often counted among the benefits of development. As I emphasized in Chapter 6, this procedure isn't right. The amount of land being used at any particular location doesn't change, and potential Pareto improvements occur only when the amount of something be-

1. The marginal cost of producing soda is a real cost to the world; it represents resources that would otherwise have been put to some other valuable use. Similarly, the value of what a worker could have produced working another job or staying home minding the kids is also a real cost. Soda sold and jobs generated thus count as economic benefits only to the extent that they're overpriced or overpaid, and no more.

ing done changes. Whatever landowners gain from higher prices, renters lose; nothing else happens.

2. Who Benefits?

The answer to this question about economic development in the open-city model is easy: only landowners. This answer usually doesn't please economic development advocates. However, the standard alternative to the open-city model, the closed-city model, is entirely inappropriate for analyzing development, since it presumes no development.

Intermediate models—models in which better opportunities in one city trigger migration, but not fast enough migration to offset those opportunities immediately—give intermediate answers. People other than landowners gain for a while, but those gains are progressively transferred to landowners over time, and they eventually disappear. In no model, of course, do renters gain. Retired people who don't own real property, for instance, are almost certainly big losers from economic development in any model.

Simple supply-and-demand diagrams can illustrate these issues. First, consider the labor market. Suppose an economic development victory (or a stroke of luck) raises demand for labor in a particular city. A car manufacturing plant opens up, or a university in town gets a large federal grant for ceramic research, or a drug that a local company has patented turns out to cure arthritis. In Figure 18.1, this moves the labor demand schedule up from D to D^*: at any wage, companies in this town want to hire more workers.

Whether workers gain from this demand shift depends on the elasticity of supply. In the short run, say a year or two, not many workers can migrate to this city, and so supply is fairly inelastic, as in Figure 18.1a. Wages go up, employment doesn't go up much, and workers—the workers originally living in the city—are better off. This is essentially the closed-city model.

But over time, more and more workers will migrate if wages in this city are higher than wages elsewhere. Thus in the long run, the supply curve of labor may be almost flat, as shown in figure 18.1b. So employment goes up but real wages stay the same, and hometown workers are no better off.

On the other hand, in the land market supply is inelastic in the long run and in the short run. Figure 18.2 illustrates. There just isn't any more land within ten miles of the new plant. So when demand for land shifts up from d to d^* because people are attracted by the job opportunities (or because they learn that this city is a very nice place to live), the price of land goes up but the quantity has to stay the same. Owners of land gain; consumers of land lose.

Who reaps the benefits of development, then, is ultimately an empirical question about the elasticity of labor supply. Many studies have been done, and on some points there is consensus. In the long run (five to ten years), growth raises housing prices considerably, and in the short run, it raises wages and reduces unemployment. The increase in housing prices is large: a 1 per-

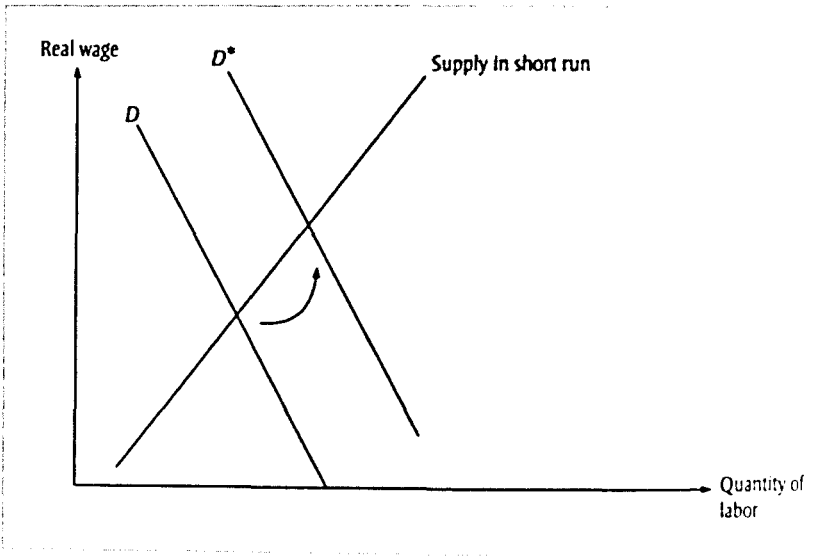

Figure 18.1a Short-run response to economic development.

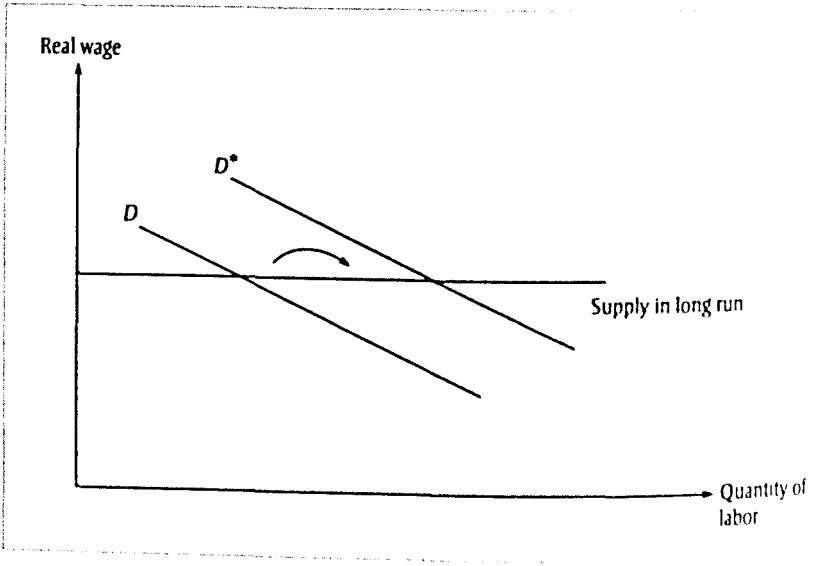

Figure 18.1b Long-run response to economic development.

cent increase in the demand for labor in a metropolitan area (because of a manufacturer's new defense contracts, say, or some huge new factories built by foreign firms) raises housing prices by between half of 1 percent and 1 percent. Bartik (1991) surveys a large number of studies on which this consensus is based.

The major point of disagreement is on whether economic development has any effect at all on unemployment or wages in the long run—or whether migration eliminates all the short-run gains that workers make and transfers

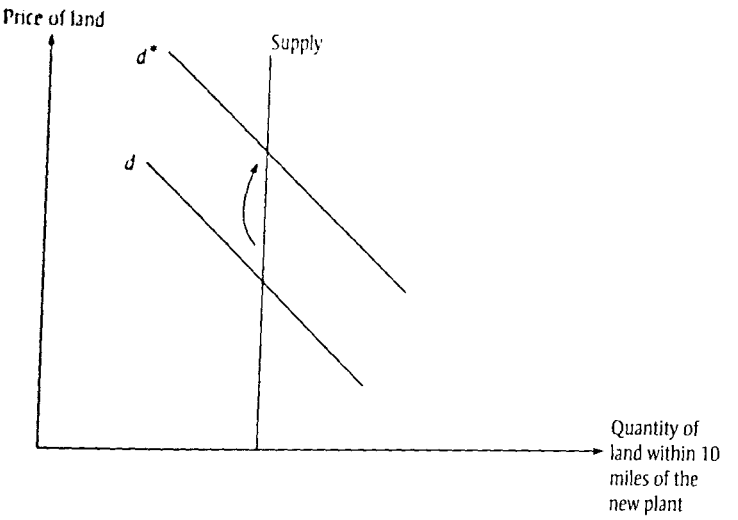

Figure 18.2 Land market response to economic development.

them to landowners. Blanchard and Katz (1992) look at state data between 1950 and 1990, and conclude that after five to seven years, economic development has no effect on unemployment, and after about ten years it has no effect on wages. New defense contracts or new foreign plants are offset by new migration, which is triggered by low unemployment. Migration eliminates the low unemployment that spurred it.

Bartik (1991) claims that economic development can have permanent effects on unemployment and wages, although the effects he finds are quite small. Using data for twenty-five large metropolitan areas between the years 1972 and 1986, he concludes (p. 95): "Suppose some economic development policy creates 100 net new jobs for a metropolitan area . . . [I]n the long run, 6 or 7 of the 100 jobs will go to local residents who would otherwise by unemployed, and 16 will go to local residents who would otherwise be out of the labor force. The other 77 or 78 jobs go to in-migrants." He also finds a small long-run effect of economic development on wages, although it's not statistically significant.

Bartik reconciles his results with the open-city model by arguing that the one-year effect of economic development permanently changes who the local residents are. People emerge from a temporary boom with different skills and attitudes that stay with them permanently, he says (p. 76): "Due to faster growth, in the short run some persons in the area will obtain jobs who otherwise would be unemployed. In addition, some will move up to better jobs. The short-run experiences of these persons change their values, skills, self-confidence, and reputation." This is called the "hysteresis effect"—when temporary events have later, permanent repercussions.

Aside from the disconfirming results of Blanchard and Katz (and several other studies), there are two more reasons to be skeptical of Bartik's conclusion. First, Bartik's analysis implies that states with higher average employment growth should have lower average unemployment. Blanchard and Katz look for such a relationship and do not find one. Second, on a theoretical level, if employment during a boom has the long-run benefits Bartik claims for it, then workers should be willing to accept somewhat lower wages in return for those long-run benefits. So what appear to be long-run benefits, if they exist, would really just be repayment for an investment made in the temporary boom.

Clearly, then, migration offsets in less than a decade most (according to Bartik), if not all (Blanchard and Katz), of the benefits workers might gain from economic development. Is it really plausible that people are really so willing to pack up, move their families, and abandon their loved ones, just to add a couple of bucks to their paychecks or to find a job a little more quickly? Marston (1985) finds that migration flows are probably large enough to do what's claimed. During a four-year period, he found that 13.9 percent of metropolitan population moves between areas; this doesn't count immigrants from abroad. Since economic development policies that raise employment by even 1 percent a year are rare (if they exist at all), small changes in normal migration are more than big enough to offset almost all economic development policies. There are lots of people, all the time, who want to leave their home city, and many who wouldn't particularly mind doing so—young adults setting out on their own, people recovering from bad relationships or traumatic incidents, recent arrivals, people who hate the weather where they live. Once again, when numbers count, introspection is a poor guide.

Finally, notice that all of this empirical work deals with metropolitan areas or states—big areas where leaving is fairly costly. They do not focus on the effect that jobs in a particular neighborhood or a particular political jurisdiction have on the workers who live there. Since "migration" to small areas is easy—you just change your commute or you move to a place that doesn't preclude your seeing old friends or relatives frequently—the expectation is that short-run benefits to workers will be much smaller, adjustment will be much quicker, and the long-run benefits, if any, much smaller. Bartik finds some evidence to support this idea, although some of the evidence in the spatial mismatch literature (see Chapter 11) seems to contradict it.

However, even if most of the benefits of development accrue to landowners, there are still many reasons to undertake development activities that are potential Pareto improvements. Landowners are people, too, and many of them are quite ordinary people. Landowners' gains, moreover, are potentially taxable, and can be used, at least in the short run, to help people who aren't landowners. But the arguments in favor of development activities that aren't potential Pareto improvements—that they're a good way of helping poor people, for instance—are fairly weak.

3. Are Minorities or Minority Neighborhoods Different?

A variety of theoretical arguments can be made for the proposition that minority workers retain a larger proportion of the benefits of economic development than whites do—why, in other words, development might be a good strategy for helping minority workers even if it's a poor strategy for helping white workers. Many theoretical arguments can be made for the opposite conclusion, too. Most of the arguments on both sides are weak and speculative.

One argument in favor of this proposition is based on Bartik's idea that boom-time employment changes people. Perhaps minorities are changed more than whites, or more minorities than whites are changed. Minorities would change more, for instance, if they were more lacking in self-confidence or were more deeply afflicted with negative stereotypes that work experience could overcome. More minorities would change if normal unemployment rates were higher and fell more—which is true.

Speed of migration may also matter, and some evidence indicates that minorities, particularly African Americans, are slower to migrate than whites (Krieg 1990, Raphael and Riker 1999). If, for some reason, minorities are more likely than whites to receive benefits from development, then slow migration may allow them to benefit for a longer time, and reduce the gains to landowners. But for slow migration to make a positive difference for minorities, somehow the benefits of development have to be restricted to minorities. For instance, if development creates jobs that pay more than market-clearing wages, slow migration can help minority workers only if white workers don't take those jobs. Jobs in small businesses that have predominantly minority customers might be difficult for white workers to take and thus might fit this scenario. But it's not clear what other types of jobs would work like this.

So we need to turn to empirical evidence. Here, too, the picture is mixed. Bartik (1991, 1993), Frey and Speare (1988), Bound and Holzer (1993), and Freeman (1991) find that job-creation programs increase employment more among African Americans than among European Americans, while others find the opposite (Ihlanfeldt and Sjoquist 1991), or no difference (Ihlanfeldt 1992). Peters and Fisher (2002) find that the vast majority of jobs in urban enterprise zones go to people who live outside the zones, and that the vast majority of zone residents who are employed work outside the zones. None of these studies attempts to correct for rising rents. Little is known about Hispanics or Asian Americans. The safest conclusion is that African American workers probably gain a little more than European Americans from metropolitan economic development, but in the long run neither group gains much.

4. Are Old Central Cities Different?

No good empirical evidence is available on this question. The external benefits of development may be greater in old central cities than in newer and less densely populated parts of metropolitan areas, for several reasons. Infrastructure may be priced further above marginal cost because usage has been declin-

ing and excess capacity is present. Jobs may be reachable by mass transit, and the social cost of trips by mass transit may be less than the social cost of trips by car. Mass transit also makes jobs available to poorer people, who might otherwise be idle or receiving welfare or unemployment insurance. Densely packed areas may also be more likely to give rise to localization and urbanization economies (although the most famous recent example of localization economies, Silicon Valley in California, did not require significant population density, even by American standards).

On the other hand, roads may be narrower and more congested, in old city centers, and the dangers of pollution and accidents greater. Some of the infrastructure may be obsolete or rotting away. The social cost of rush-hour mass transit trips may be very high, and the new jobs may be farther from the residences of the people who actually get them. Coming up with a blanket rule for the net benefits of central city development is probably not possible.

There are also some reasons to think that a somewhat smaller proportion of these benefits accrue to landowners in the medium term (five to ten years). Central cities are the location of the largest concentrations of public housing and other types of subsidized housing. When this housing becomes more attractive, tenants don't face higher rents. The same applies to rent-controlled tenants, who are also more common in central cities. On the other hand, in outlying suburban areas and newer urban areas, more people own land.

5. Summary of Benefits

Development often has net external benefits, and those benefits may sometimes be greater in old central cities. The short-run benefits are also probably greater for African Americans. Many of the benefits of development accrue to landowners in the long run, which is not disastrous. Different development projects have different kinds of benefits, and there is little reason to do development projects that are not potential Pareto improvements.

B. How?

At the most basic level, any worthwhile project is good for economic development. A new fire truck in town, for instance, if the services it provides are worth more than the taxes needed to buy it and operate it, makes living or running a business nearby more attractive, and so induces new investment and migration with all the attendant externalities, both positive and negative.

But usually economic development (the U.S.-cities version) refers to a more restricted set of policies. These are policies for which a major portion of the benefits are external effects that any measures that increased market activity would have. The fire truck doesn't qualify, because most of its benefits—faster suppression of fires and concomitant lower insurance rates, greater freedom to build more flammable structures—aren't common with every policy

that increases market activity. In contrast, building a baseball stadium is usually considered an economic development project because most of the benefits cited are the same ones that any other endeavor that induced similar amounts of spending in the same area by similar people would have.

This is not a hard-and-fast distinction. Proponents of baseball stadiums could conceivably argue their case on the grounds of the consumer surplus that fans would enjoy. Such arguments, however, are heard so rarely that it seems legitimate to presume that stadium proponents think most of the benefits come from stimulation of market activity. Conversely, fire truck proponents might emphasize the stimulative effect good fire trucks have, but they usually don't. And "major," of course, is an imprecise word.

The distinction has two advantages. First, it seems to correspond roughly with how ordinary people use words. Second, it lets us concentrate in this chapter on a new set of benefits and costs that we haven't considered before, rather than rehashing material we've already gone over. But in concentrating on the benefits that arise from stimulating more market activity, we still won't forget about more traditional costs and benefits, even if they're in the background.

With this in mind, we can now look at several of the more prominent activities that are traditionally considered ways to promote economic development.

1. General Taxes

Lower taxes, everything else being equal, make a city more desirable, and so should attract more people and more business. This would trigger development externalities. Lower taxes, of course, produce other benefits as well, just like a good fire truck: less burden, and smaller deadweight loss.

There is good empirical evidence to support this assertion. Many economists have studied the effects of taxes on business location and economic development, and several others have tried to summarize the results of these studies (Bartik 1991, Phillips and Goss 1995, Wasylenko 1997). The consensus is that a 10 percent decrease in the taxes residents and businesses pay in a metropolitan area will cause an increase in most measures of market activity (jobs, investment, new start-ups, and so on) of between 1 and 5 percent in that metropolitan area, everything else being equal. Taxes have a bigger effect on location within a metropolitan area—a town that cuts taxes by 10 percent, when surrounding towns don't, will gain more than a state that cuts taxes 10 percent, but much of the new activity will just move from nearby within the metropolitan area. Such shifts in business location create much smaller external benefits than shifts from farther outside the metropolitan area.

Notice that when I say that taxes affect business location, I'm not saying that they're decisive in all or even most business decisions. No amount of tax cutting by Florida is going to induce ski resorts to move from Vermont to

Pensacola. Instead, I'm saying that there are a few business decisions in which other factors are close enough that taxes matter: a company that can't otherwise decide where to build a new plant, an existing firm that may or may not hire a part-time bookkeeper, a store owner who is trying to decide whether to retire now or stay in business for another year. Just as events that swing only a handful of voters and have no effect on the vast majority can nevertheless decide elections, so taxes can exert the kind of influence econometric studies show they have, without ever affecting the decisions of an overwhelming majority of businesspeople.

Moreover, the businesspeople whose decisions change because of taxes may not even be aware of this. The firm deciding between two locations for a new plant may just add up two long columns of costs, each of which includes taxes, and choose the location for which the sum is smaller. It has no reason to ask itself whether its conclusion would have been different if one city's taxes had been lower. The store owner deciding when to retire may have no idea how much more his customers would spend in his store if their local income taxes were lower.

For both of these reasons, then, introspection is a very poor way of assessing the effect of taxes on business location. Surveys of businesspeople's introspection are even worse, because on top of all the other weaknesses of such surveys, they exclude businesses that have shut down and those that never started.

Even though lower taxes do spur economic development, across-the-board tax cuts aren't necessarily the best way or even a good way of making a city grow. Taxes pay for public services, and in the long run, the only way you can cut taxes is to cut public services. Even the most wasteful of public service expenditures is still an expenditure and so carries with it economic development externalities. Most public service expenditures, moreover, are not wasteful: good schools, good roads, good police, and good sewers all attract firms and residents. Public services are a little harder to measure than taxes, but the consensus of empirical studies is similar to the consensus on taxes: more spending on public services has a definite, measurable, positive effect on economic development, although the effect is not terribly big (see Bartik 1991 and Fisher 1997).

We should not forget, either, that many public services produce benefits above and beyond those connected with attracting new jobs. A long-time city resident, for instance, gains from better police protection if it permits her to take walks in the park at dusk, even if her residence and spending patterns stay the same.

This argument against cutting taxes, however, is somewhat imprecise. Tax revenue is what matters for public service expenditure, while tax rates are what matter for economic development. A 10 percent cut in tax rates translates into a 10 percent cut in tax revenue only if the tax rate cut spurs no eco-

nomic development. Because we know that such a tax rate cut is likely to spur some economic development, the argument against tax (rate) cuts is not nearly so strong as it first appears. But the economic development effect of tax rate cuts is small, as we have seen, and so in general being precise about the distinction between tax rates and tax revenues is not especially important.

This general conclusion about the effect of taxes on economic development has one possible exception: business location within a metropolitan area. The studies that confined their attention to a single metropolitan area found that differences among jurisdictions in tax rates corresponded with much larger differences in economic development variables; many studies, in fact, found that 10 percent lower tax rates corresponded with more than 10 percent more jobs or investment. If this were in fact how the world worked, then jurisdictions could always collect more revenues and provide more services by cutting their tax rates.

There is some reason to be skeptical of these results, however. Causation may not be running from tax rates to development: jurisdictions that were better managed or more friendly to business or in general more attractive in unmeasured ways might have both lower taxes (either because of their good management or because of their larger tax base) and more jobs. The tax rate might just be the visible tip of a larger, unobserved—and probably more expensive—package.

We should also note that the effects reported in the general surveys are long-run effects—how much more business activity will eventually occur if taxes stay fixed at the new low rate for a long enough time. The process of adjustment is gradual, because many of the decisions in which taxes matter have to be made only occasionally. The conventional estimate is that every year about 9 percent of the gap between where business activity was at the beginning of the year and where it will eventually end up (if nothing changes) is eliminated (Bartik 1991; Helms 1985).

So local governments must lose tax revenues immediately from cutting rates, and will regain those revenues only far in the future. Even if studies show increased activity making up for lower tax rates in the long run, the government will lose money in the short run, and the long-run gains won't necessarily make up for the short-run losses. (For more on this, see Box 18A.)

Finally, most of the studies look only at a specific type of business activity—manufacturing investment, mainly, or new start-ups. Since cutting tax rates doesn't produce more land, some of the measured activity comes about by displacing other activity. Thus the measured increase in manufacturing, for example, may overstate the net increase in business activity.

Of course, the sort of cost-benefit analysis we have done throughout this book would almost always call for reducing tax rates that are so high that they net almost no money. Such tax rates cause big deadweight losses, even if the activity they dissuade carries with it no economic development benefits.

Box 18A

When Do Tax Cuts Really Pay for Themselves?

≡ Let G be the annual addition to tax revenue in the long run that a tax rate cut causes through increased economic development, and let L denote the annual loss in taxes that the tax rate cut would cause if it spurred no business expansion. The standard question is whether the gains from a tax cut will outweigh the losses:

$$G > L. \tag{1}$$

But the real question for determining if the government can cut tax rates without cutting public services is whether the present value of gains will be greater than the present value of losses. Let r denote the rate of interest, and a denote the phase-in rate (about .09, the proportion of the difference between the current level of business activity and the ultimate level that disappears every year). The present value of losses is

$$L/r,$$

since the losses start immediately. The actual level of gains in year t is

$$G(1 - e^{-at}),$$

and so the present value of gains is

$$(G/r)(a/[a + r]).$$

Thus the present value of gains exceeds the present value of losses if and only if

$$G(a/[a + r]) > L,$$

which is a considerably more stringent condition than (1). If $r = .045$, for instance, a 10 percent cut in tax rates will increase the present value of city revenue only if it induces an increase of 15 percent or more in business activity.

Talking about jobs and business activity adds almost nothing to the standard analysis.

Interestingly, too, the standard analysis arrives at a prescribed method for creating potential Pareto improvements that's also a good prescription for economic development: land taxes. Taxes on land can't discourage business activity; what discourages business activity are taxes on improvements, or wages, or utility use, or something else that people can control. If all jurisdictions relied solely on land taxes, economic development would be indepen-

dent of tax rates. Oates and Schwab (1997) found that when towns in Pennsylvania shifted some of their property tax burden from structures to land, considerable economic development ensued.

2. Tax Abatements

The big drawback in trying to induce economic development through cuts in general tax rates—tax rates that apply to broad classes of individuals or firms—is that many of the beneficiaries don't change their behavior as a result. Another drawback is that the effects of general tax cuts are hard to perceive unless you're an economist or a statistician. With broad cuts, political leaders can't point to any particular job or building and say they created it.

Both problems suggest the same solution: give tax cuts only where they're going to make a difference. That way money isn't wasted by giving cuts to firms for doing what they would have done anyway, and political leaders can point with pride to tangible accomplishments, rather to than pages of statistical gobbledy-gook. Such sharpshooting has another advantage, too—it lets governments focus the biggest tax breaks on the activities with the biggest positive externalities.

Targeted, specific tax reductions are therefore a popular (but controversial) economic development tool. The main method of targeting tax cuts is called a **tax abatement.** In a tax abatement, the government agrees to collect lower property taxes than it ordinarily would from a property—usually a newly constructed or substantially rehabilitated building—for a specified period of time.

a. Why Tax Abatements Have to Be Administered Well Tax abatements work well if the people administering them can discern those decisions for which taxes matter, and if they have incentives to act properly on that information. Similarly, preventive detention would be a good way to fight crime if police could tell who was going to commit crimes and when, and could be trusted to act on that information. And enforcing speed limits and drunk driving laws only against drivers who were going to have accidents would also be a significantly more efficient system, if information and incentives made it feasible. In all three cases, though, the selective programs will work poorly—in fact will often be worse than no program at all—if either the information or the incentives are not of extremely high quality.

A poorly executed attempt at selective tax reduction (or selective preventive detention or selective traffic-law enforcement) can be worse than no attempt at all, for two reasons. The first reason is the mathematics of deadweight loss: cutting a tax in half doesn't cut the deadweight loss it causes in half. Taxes are like rainstorms: an extra little bit of rain coming on top of a drizzle causes a lot less damage than the same amount during a torrent, when

many streams and sewers are already overflowing. Any loss in net revenue that a tax abatement causes has to be made up with higher taxes on other taxpayers—and greater deadweight losses.

Unless abatement recipients are chosen accurately and the size of the abatement calibrated finely, a tax abatement is likely to increase deadweight loss rather than decrease it. If the abatement is too small, the recipients won't change their behavior much and little deadweight loss will be alleviated directly. Other taxpayers, however, will have to pay higher taxes to make up for the subsidy, and since they will be starting from a high base, the presumption is that their deadweight losses will overwhelm whatever gains the recipients will realize.

If the abatement is too large, the last dollar of the abatement will come from reducing taxes much lower than those paid by other taxpayers, who will see their taxes being forced up. The reductions in deadweight loss the world gains from this last dollar of abatement are likely to be smaller than the deadweight losses associated with raising the high taxes others pay. Box 18B illustrates these outcomes.

The moral of this story is that a perfectly designed tax abatement system is better than uniform taxation, but a tax abatement system that falls short of perfect design, even by a fairly small amount, is worse than uniform taxes. Designing tax abatements is like swallowing swords: the reward is handsome if you do it well, but if you make even a small error it would be better never to have tried at all.

The other reason why a poorly conceived tax abatement system might be worse than uniform taxation goes by the name of rent-seeking. If firms with certain characteristics get abatements and others don't, then firms may devote resources to acquiring the characteristics that result in abatements. To the extent that abatements are just a shifting of the tax burden from one taxpayer to another, devoting resources to securing an abatement is a waste of those resources: if the abatement were awarded the same way and no resources were expended, no one would be worse off. The term *rent-seeking* refers to the expenditure of resources to seek "rent"—some recompense greater than whatever is required to make you indifferent about doing something you do.

Whether rent-seeking occurs and what form it takes depends on how abatements are awarded. Rent-seeking wouldn't occur at all if abatements were handed out randomly or on the basis of some immutable criteria. But random abatements would contradict the premise of targeting, and even if criteria couldn't be changed by potential recipients, they could be changed by the agency giving out abatements. New Jersey abatement law, for example, has been amended approximately every five to ten years since it was first adopted in 1961. Such mutability indicates that lobbying for beneficial decisions may pay off for an individual firm. Lobbying is the quintessential rent-seeking ac-

tivity, since it uses resources like the time of owners, lawyers, and publicists that might otherwise be spent in directly productive ways.

Tax abatements can induce other forms of rent-seeking, too, but these depend more closely on the actual criteria by which abatements are awarded. When we consider those criteria, we'll consider the rent-seeking behavior they might cause.

b. Are Tax Abatements Likely to Be Administered Well? We have looked at two reasons—nonproportionate deadweight losses and rent-seeking—why poorly targeted abatements may be worse than none at all. The question thus becomes how well abatements can be targeted: how much relevant information do decision makers have?

Decision makers have several possible sources of information. First, they could ask businesspeople to tell them how much tax relief they need. The basic problem with this approach is that businesspeople have no reason to answer truthfully and every reason to exaggerate. Moreover, the number of people you would have to ask is enormous. Land, for instance, is an important cost, and to find the relevant price for a particular plot of land, you have to figure out what the next highest bidder would be willing to pay, which entails finding out who the next highest bidder is. Data on job growth show that new businesses from outside a metropolitan area are a relatively small part of job growth. That means that you can't confine your attention to outside businesses that have expressed an interest in moving in; you have to gather this information on a regular basis from existing businesses that might expand or contract, as well, and from would-be entrepreneurs thinking about starting up a business.

Second, decision makers could look at the sort of business that firms engage in and base decisions about abatements on that. For instance, Michigan permits abatements for manufacturing firms but doesn't allow them for commercial activities (commercial abatements were permitted between 1978 and 1988, however, and commercial firms in Michigan can benefit from tax-increment financing). The theory is that manufacturing firms are more footloose than commercial, and that they provide greater positive externalities in the form of semiskilled jobs paying above-market-clearing wages. Little is known, however, about how sensitive different types of businesses actually are to tax incentives or what types of externalities they usually generate; economists, after all, have barely reached a weak consensus on the effects of business as a whole.

Bartik (1991, pp. 216–247), in his summary of tax effects, cites several papers that try to break down tax sensitivity for various types of firms, but few distinct lines can be drawn. Manufacturing does appear to be more sensitive to taxes than the average business, but no clear pattern emerges in compari-

Box 18B

See for Yourself

≡ Suppose there are four firms: two commercial firms and two manufacturing companies. Before taxes (that is, if taxes were zero), the benefit of locating in our town is $19 for one commercial firm, and $8 each for the other commercial firm and one manufacturing firm. The benefit for the other manufacturing firm is $4. (For profit-maximizing firms, the benefit is the difference between profit at zero taxes in our town and profit at the next best alternative location.) Figure 18B.1 illustrates. Our town can distinguish between manufacturing and commercial firms, but cannot distinguish between firms within a class.

The total amount that has to be raised in taxes from the four firms is $22.50.

The town government is contemplating offering tax abatements for manufacturing firms, since they appear to be sensitive to taxation. What range of manufacturing abatements would produce less deadweight loss than uniform taxation? What range of abatements would produce more deadweight loss?

Step 1: Find uniform taxes that raise the required $22.50. First, see how many firms operate. Only if the tax is less than $4 will all four firms locate in our town, but at that rate the revenue will be less than $16. So at least one firm—the second manufacturing firm—will not operate if uniform taxes raise more than $16. If three firms locate in the town, the tax on each will be $7.50, for a revenue total of $22.50. Since the remaining three firms all have a benefit of $8 or more, this uniform tax will work.

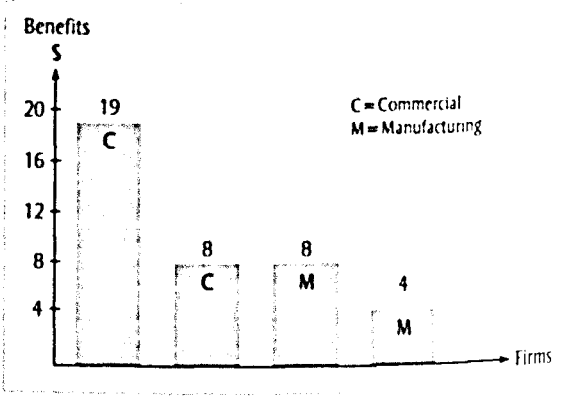

Figure 18B.1 Benefits without taxes.

With a tax of $7.50 for each operating firm, the second manufacturing firm will not operate in our town. The deadweight loss will be $4. Figure 18B.2 illustrates.

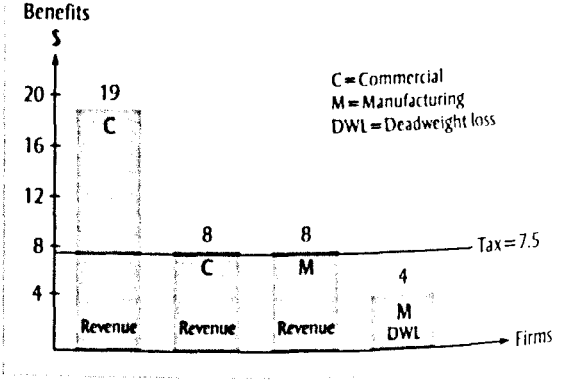

Figure 18B.2 Uniform taxes.

Step 2: Find the range of manufacturing abatements too small to change deadweight loss at all. The town decides to lower

the tax on manufacturing firms, starting from $7.50. As the tax is gradually lowered, at some point one of two things will happen: either the second manufacturing firm will enter, or commercial taxes will become so high that the second commercial firm will leave. The second manufacturing firm will enter when the manufacturing tax falls to $4. Before that, for every dollar that the manufacturing tax falls, the tax on each commercial firm rises by $0.50 to make up for it. Thus when the manufacturing tax falls by more than a dollar—so it's below $6.50—the tax on commercial firms will be above $8, and the second commercial firm will leave.

Step 3: Summarize the results for manufacturing taxes above $4 and calculate deadweight loss. If the manufacturing tax is $6.50 or above, nothing real happens—the abatement is just a transfer from the commercial firms to the manufacturing firm. Deadweight loss remains at $4.

If the manufacturing tax is between $4 and $6.50, only one commercial firm and one manufacturing firm will operate. Deadweight loss is $12: $4 from the manufacturing firm that isn't operating, and $8 from the commercial firm that isn't operating. Abatements like this are worse than uniform taxes.

Step 4: Find out what happens when the manufacturing tax is $4 or below. In this range, both manufacturing firms will operate. The question is whether the second commercial firm will operate. If manufacturing taxes are $4, then manufacturing firms contribute $8 in taxes and the tax on commercial firms is $7.25 each (($22.50 − 8)/2). The second commercial firm operates, and deadweight loss is zero. This is how abatements are alleged to operate always.

Since the number of manufacturing firms is now the same as the number of commercial firms, in this range the commercial tax goes up at the same rate as the manufacturing tax goes down. The second commercial firm will shut down when the commercial tax goes over $8. This is $0.75 more than the commercial tax when the manufacturing tax is $4. So when the manufacturing tax falls below $3.25, the second commercial firm shuts down, and deadweight loss rises to $8—more than the deadweight loss with uniform taxes.

Figure 18B.3 summarizes deadweight loss as a function of the tax on manufacturing firms. Only when that tax is between $3.25 and $4 will total deadweight loss be less than it was under uniform taxes.

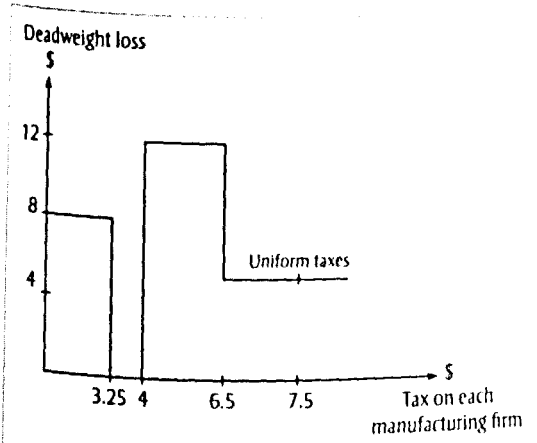

Figure 18B.3 Deadweight loss as a function of manufacturing tax.

sons of large firms with small, or high-tech firms with others. Within manufacturing, plastics, printing and publishing, and electrical components appear to be quite insensitive to taxes, but it's not clear which industries are more sensitive than average. The numerical example in Box 18B shows that dispersion within the group of firms getting tax abatements matters as much as averages, and since we know little about dispersion, it seems safe to conclude that the amount of useful information local decision makers have about the types of firms that should get abatements is small. (Even Michigan's manufacturing distinction is questionable; officials in Newark, in contrast, have argued that manufacturing plants are polluting and therefore generate negative externalities, these negative externalities make few New Jersey municipalities willing to zone them in, and thus they are neither footloose nor desirable.)

Tenure is another piece of information that decision makers could use in determining which firms should be granted abatements. In many states, abatements are limited to new construction and substantial rehabilitation. The theory is that decisions about the size and height of structures are much more easily influenced in the planning stages than they are after a building is built. The cost of adding a fifth story to an existing four-story building is much greater than the difference between the cost of a new five-story building and a new four-story building; the cost of wiring an existing building for Ethernet is more than the difference between the cost of a new building with Ethernet and one without. Thus the cost of inducing expansion and enhancement of structures is less before they're built than after. Since employment and many other aspects of market activity are often complementary to structure, this ease of influencing structure carries over to ease of influencing employment and market activity. Once a building is built, going from five employees to six can be expensive if you have to split somebody's office or reconfigure the interior walls. In the planning stage, it's a lot easier: you can design six offices in the space you had for five, or you can plan to make the building a little bigger. On average, then, inducements to firms involved in building new structures should be more effective than inducements offered to other firms.

That doesn't mean that firms in existing structures make no decisions that are sensitive to taxes. Payroll taxes affect how many workers an existing firm employs, and other taxes can affect decisions about whether to stay in business or whether to move to a new location. Buildings can also be on the margin of abandonment.

In some circumstances, however, abatements on new construction can lead to obvious deadweight losses. As an example, consider the office-building market in a declining city. Suppose the existing office buildings are all identical, and owners of the existing buildings collect enough rent to cover their operating costs and taxes, but no more. If an abatement or other subsidy leads to the construction of a new office building, rents tenants pay will have to go down if the new building is occupied, or some old buildings will have to be

abandoned—since demand curves slope down, the only way you can get more office space rented is by lowering rents. But if rents fall, all the old buildings will be abandoned. So in equilibrium, every square foot of new office space built must be offset by a square foot of old office space abandoned—or rents will fall. Since all that happens is that new office space replaces perfectly serviceable old space, no one is better off, and the new construction the abatement induced was pure waste. For more detail, see Box 18C.

By itself, the greater average malleability of new capital doesn't guarantee that a policy of abatements for new construction will pick out the right properties to abate, or that the costs of its misses will be less than the benefits of its hits. But it might happen that way—the question is ultimately empirical.

Confining abatements to new construction and substantial rehabilitation also induces two kinds of rent-seeking behavior. Rewarding new construction reduces the incentive for maintenance: the faster you let your building run down, the sooner you're in a position to fix it up (or tear it down) and get an abatement.

On the other hand, with parking lots and mainly empty spaces, new construction abatements can cause rent-seeking owners to delay construction. The reason is uncertainty: once you build, you lose forever the option of getting an abatement or the prospect of getting a more generous one. Abatement rules change frequently, and to the extent discretion is part of the process, government favorites and priorities change even more often. Even if building is profitable now, it might be more profitable if the owners waited a little while and the rules, the players, or the owners' political standing improved. In this way, tying abatements to timing can distort the timing of construction and maintenance.

The final piece of information that's sometimes used in awarding abatements is location. Many states specify that abatements can be granted only in areas labeled "blighted" or "in need of rehabilitation," or some similar phrase. The argument for location is primarily an argument about external benefits, rather than an argument about sensitivity to taxes: buildings in these areas are believed to produce greater external benefits than buildings in other places. The first new buildings are said to "jump-start" development, in a frequently used metaphor. Rauch (1993) shows that developers of private industrial parks offer early tenants discounts in order to attain a "critical mass" that will permit economies of scale to be realized. The external benefits of early entrants are great—they make the developer credible and they guarantee later entrants that they won't be alone—and so developers are willing to pay them. The location argument for abatements is that cities should act the way these private developers do.

Of course, spotting potential for agglomeration economies and matching that potential with the right locations is a difficult task—at least as difficult as spotting tax sensitivity. Successful developers are able to do it, but few people

Box 18C

When Can Abatements on New Buildings Topple Old?

≡ How could it come about that existing buildings collect enough rent to cover their operating costs and no more? This circumstance is quite likely in a city that's declining faster than people many years ago thought it would.

In the short run, the supply of office space is like this: any amount you want is available at operating cost, up to the amount of current capacity. Nothing more than current capacity is available. So the supply curve looks like Figure 18C.1.

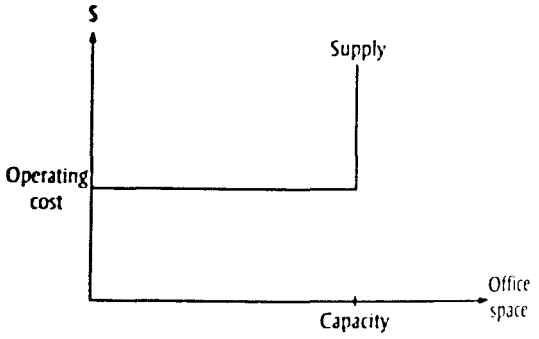

Figure 18C.1 Short-run supply curve.

When you build an office building, you hope that in the future demand will be sufficiently high, relative to capacity, that at equilibrium all space will be used, and rent will be greater than operating cost, as in Figure 18C.2.

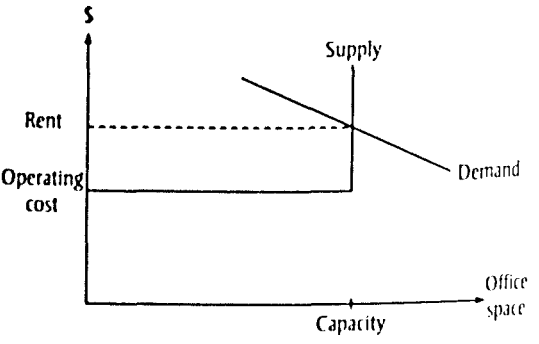

Figure 18C.2 What builders hoped would happen.

have the talent or luck to be successful developers; that's why the few who are successful are so rich.

c. Summary on Tax Abatements So while it's possible that a regime of tax abatements could create potential Pareto improvements, information and incentives may keep them from being used effectively. They could cause more harm than good. Notice that I haven't even examined the question of whether decision makers would use good information if they had it.

Empirically, few economists have found abatement policies to do more good than harm. James White (1988) looked at small cities in upstate New

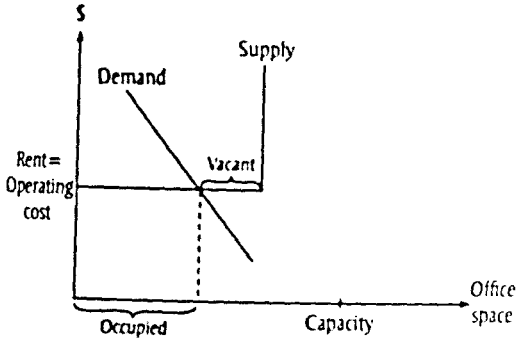

Figure 18C.3 What happened (short run).

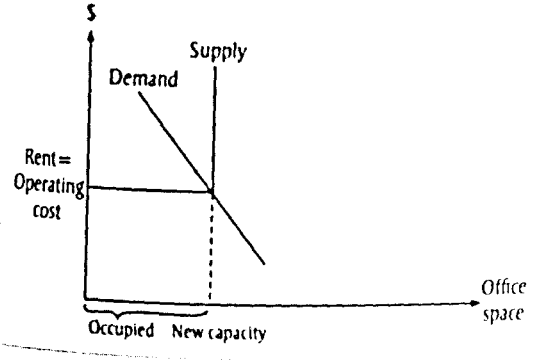

Figure 18C.4 What happened after supply adjusted.

Only if the excess of equilibrium rent over operating cost is large enough to pay for construction do builders want to go ahead with construction.

Suppose, however, that the demand curve isn't where the builders hoped it would be. Twenty years after construction, the city has declined a lot. In particular, suppose the short-run equilibrium looks like Figure 18C.3. Rents equal operating cost, and some office space is vacant.

Over time, vacant office space will be abandoned, and the city's office capacity will fall. This will keep happening until capacity falls to the level warranted by demand at operating cost, as in Figure 18C.4.

Figure 18C.4 illustrates the situation described in the text. Thus such a situation would not be unusual at all—something pretty close to it is what you would expect to see in declining cities.

York and found that those that offered more generous abatement policies had less total capital stock and higher property tax rates: abatement displaced more investment than it stimulated. (White tried to control for the fact that towns in more desperate economic straits tended to adopt generous abatement policies.) Wassmer (1992), using Michigan data, found that commercial abatements increased commercial investment but decreased manufacturing and median home value and caused regular property tax rates to rise. Manufacturing abatements also reduced median home value, but they did encourage manufacturing investment and had no effect on regular property taxes. Anderson and Wassmer (2000, pp. 143–146) found that manufacturing abate-

ments after 1983 decreased manufacturing property value and increased local poverty and the regular property tax rate (results before 1977 were somewhat more optimistic). Commercial tax abatements worked the same way, even before 1983.

More indirectly, Anderson and Wassmer (1995) found that abatements don't work like Rauch's developer inducements to early movers. Using an abatement in one year makes a city more likely, not less likely, to use it later, and abatements grow more generous as time passes, not less generous.

Are there alternatives to tax abatements? As we've already noted, land taxes would solve cleanly all the problems that tax abatements are supposed to address. A less radical alternative is outlined in O'Flaherty (2000): selling the right to build without taxes on improvements. The idea here is to prohibit the origination of abatements on privately owned land; New Jersey law, for instance, carried this prohibition between 1961 and 1967. A property where a tax-sensitive development was being contemplated would be sold to a public agency, the taxes (except land taxes) would be stripped from it, and then it would be sold again to the ultimate developer. In the first sale the public agency would pay the value of the existing property with regular taxes; in the second sale the public agency would receive the value of the existing property with an abatement on whatever would be built there.

This difference between the value of a property with regular taxes and the value of the same property with an option to build abated is the heart of the problem with current tax abatements. It's the rent, and so it drives rent-seeking behavior. It's also one measure of the potential loss in tax revenue, and so it's a major source of the losses for other taxpayers. By trying to secure a significant portion of the efficiency gains from tax abatements for taxpayers generally, this proposed alternative attacks both problems. But it would need considerable refinement before being implemented.

3. Other Specifically Tailored Incentives

Tax abatements aren't the only way that governments have tried to provide targeted incentives. Instead of giving abatements—or in addition to giving abatements—governments sometimes construct specific infrastructure (expressway exits, for instance), or establish special free training programs, or subsidize construction of private physical plant, either directly or through industrial revenue bonds or tax increment financing authorities. Since the mechanisms are so varied, these incentive programs have generally been little studied. They present many of the same opportunities and issues as tax abatements—they would be excellent if administered by extraordinarily percipient and wonderfully altruistic beings, but they aren't.

Of these incentives, **tax increment financing** (TIF) probably deserves the most notice, both because it has been the object of some scholarly attention and because it represents an extremely opaque way of giving subsidies. In one

version, TIF centers around some physical improvement that would normally be privately constructed, because it benefits only one or a few properties. Under TIF, the government (or some governmental agency) builds this improvement, issuing bonds to pay for the construction. The improvement increases value and market activity at one or more properties, and these increases would normally result in higher tax payments from these properties (although the improvement may also result in lower tax payments from elsewhere). Under TIF, tax payments from the benefiting area are frozen where they were before the improvement was built; owners in the area pay the government no more than what they used to pay.

The fiction that the properties are still paying at normal rates, however, is maintained. The owners must take the tax revenue that otherwise would have gone to the general treasury and use it to pay off the bonds that the government issued to build the improvement. This maneuver is fiscal legerdemain. Requiring me to use $100 of my taxes for some expense like my mortgage that I would otherwise pay myself is the same thing as cutting my taxes by $100. TIF is thus just a fancy (and probably deceptive) way of giving a tax abatement.

For instance, consider an office building owner thinking about borrowing money to build a parking garage adjacent to her building for use by her tenants. This will increase the value of her property (at the very least because it will now have a garage on it), and increase her property taxes in the normal course of events.

Suppose the city government wants to encourage this construction, and can use either tax abatement or a TIF to do so. Among possible tax abatements, one of the most generous would be to exempt from property taxation the entire value of the garage and whatever enhancement to the value of the building the garage caused—at least until the garage loan was paid off. In other words, the most generous tax abatement freezes property taxes at the pre-garage level. The owner pays taxes at the old level, the city receives taxes at the old level, and the owner pays for the garage by paying back the money she borrowed.

With TIF, the city rather than the owner borrows the money to pay for the garage, and the owner's taxes go up. But the increased taxes the owner pays are used to pay off the loan. So the owner is paying the same amount she would have paid with the most generous tax abatement: the old taxes plus the amount of the loan. The city government is receiving, on net, exactly what it would have received under the generous tax abatement: the old taxes. (It receives incremental taxes from the owner but has incremental taxes in paying off the loan, and these two increments cancel each other out because they're equal.) That's why I say that TIF is just a roundabout way of giving a tax abatement.

(Not all TIF is used for facilities the developer would build privately in

the normal course of events. Sometimes TIF is used for things normally financed from general tax revenues—a street, traffic light, or sewer extension—but that the city thinks it can't afford. In this case, TIF is worse than a tax abatement, because the improvement is worth less to the developer than it costs the city to build.)

Not surprisingly, then, the empirical results on TIF are about the same as the empirical results on tax abatements. Dardia (1998) found that in California in the 1980s, small areas covered by TIF districts grew faster than areas without TIFs, but this growth was almost never fast enough to offset the revenue loss they caused. Anderson and Wassmer (2000, pp. 142–143) find the presence of an area with TIF increases commercial property values but raises property taxes. It causes a small decrease in poverty.

4. Linkages

"Linkages" is the catchphrase for efforts to tie specific economic development incentives to specific outcomes that are thought to make economic development desirable. The standard example of a linkage is a provision in a tax abatement agreement requiring the firm receiving the abatement to hire a certain number of poor people from certain neighborhoods. Linkages are often talked about but not much implemented.

Two arguments can be made for linkages. The first one, and the most frequently heard, is cynical: if the government is going to throw money away on useless tax abatements, poor people should have a place at the trough, too. The second is that linkages are needed to make sure economic development efforts accomplish the goals they are supposed to accomplish.

It's difficult to see how linkages do anything that direct subsidies to the desired ends couldn't do better. If the goal is to find good employment for poor people from a certain neighborhood (assuming housing prices won't rise fast enough to offset any benefits from good employment), then subsidizing their wages is much more straightforward and effective than subsidizing a specific firm with specific jobs in a specific location. If I were hungry, I would much prefer that you give me a few dollars to buy whatever food I wanted, rather than that you pay thousands of dollars to someone to establish a pickle farm on the condition that I be permitted to eat a few of the pickles.

5. Reducing Regulations

Many states and localities enforce regulations, especially environmental regulations, that increase the cost of doing business there for various types of firms. Relaxing some of those regulations is like cutting taxes: it encourages those firms to move in or expand, and when they do, they produce the external benefits of economic development.

Like taxes, though, environmental regulations, especially moderately in-

telligent ones, are a two-faced coin. Loosening regulations attracts some firms but it repels others. Laundries don't like to operate near incinerators, for example. Environmental problems can also harm large numbers of firms indirectly: a city with severe air pollution will have to pay high wages to attract workers to any job, and so firms of all kinds will face higher employment costs if some firms are allowed to pollute egregiously.

Empirically, there is little evidence that stricter environmental regulation discourages economic development. Many studies do show that more stringent environmental regulations have a negative impact on measures of economic development, but most find that this impact is small. Levinson (1996), for instance, estimates that a big increase in the stringency of a state's regulation—one that would move it past about ten to fifteen states on his measure—would cost the average state only about 500 start-up manufacturing jobs over a five-year period. The studies also concentrate on particular types of jobs—manufacturing, for instance—or on new plants. Thus they can't tell whether the regulations are augmenting other types of market activity because they make the environment better or because they reduce competition for land and labor from manufacturing. Tannenwald (1997) gives a comprehensive review of many of these studies.

Of course, these studies don't imply that really bad regulation couldn't stifle economic development or really brilliant regulation couldn't spur it tremendously. What they show is that variation within the range of regulation that states in this country have adopted doesn't make a big difference for economic development.

6. Urban Enterprise and Empowerment Zones

Urban enterprise and empowerment zones package together all the programs I have just discussed, and focus them on a small, heavily distressed geographic area, usually just a few neighborhoods in a larger city. Various kinds of taxes are lowered, regulations are loosened, and often some sort of linkage is required. Government authorities have a great deal of discretion in setting the zone boundaries, and sometimes have some discretion in changing them, but once the boundaries are established, benefits are available to pretty much every business that qualifies. Zones also generally don't face a budget constraint: lower tax revenues are made up for by a much bigger entity like a state or national government, not by the other taxpayers in the zone. Implicitly in the United States, urban enterprise and empowerment zones are places where minorities live, but nobody states this explicitly.

The phrase urban enterprise zone and the concept originated in Great Britain under Prime Minister Margaret Thatcher and migrated to the United States in the 1980s. By the early 1990s, most states had set up urban enterprise zone programs, and a federal version of the program, called "urban empower-

ment zones," was started in 1996. Over time, emphasis gradually shifted from a Thatcherite fondness for deregulation to a Clintonite fondness for linkage and social services. State programs differ widely on many important details.

The theory behind enterprise zones is that the external benefits of business activity in poor and minority neighborhoods are much greater than their external benefits in other neighborhoods. (Otherwise, dragging businesses away from the locations in which they would be most productive is just a way of creating deadweight losses.) We've already seen why this might be so—jobs might be filled by people who would otherwise be idle or less productively employed, external economies of scale might be rekindled, infrastructure might be more fully used. But in the discussion of spatial mismatch (Chapter 11), we also saw the advantages of moving people out of these neighborhoods, instead of moving jobs into them.

Since urban enterprise zones represent a packaging of the programs we've already examined, together with a restriction to a small geographical area, most of our analysis has already been done. Lower taxes should increase the amount of market activity occurring in the zones (and decrease the amount occurring outside them), with the exact form of the increase depending on the form of the tax breaks. Regulatory relaxation will help some industries and hurt others. Since the amount of land in the zones doesn't change, the simple fact that some uses will expand will force others to contract. Business expansion will raise the price of land for housing, and so raise the price of housing.

Housing prices will rise for another reason, too: if better job access (or better shopping, or more amenities) make the zones more attractive places to live, more people will want to live in them, and housing prices will be bid up until those who live in the zones are no better off than similarly skilled people who live elsewhere in the metropolitan area, or in the world. Because migration into and out of a small sliver of a city should be much faster than the migration among states and metropolitan areas that concerned, say, Bartik (1991) and Blanchard and Katz (1992), any hysteresis effects are likely to be small, and almost all benefits from the zones will probably accrue to landowners.

The empirical results on enterprise zones have been somewhat surprising: the effects have been much smaller than the studies of intrametropolitan tax differentials would lead you to expect. Some studies have found that zones spurred some kinds of business activity, but the effects were small. Papke (1993, 1994) found that inventory investments rose and unemployment fell in Indiana's urban enterprise zones, but per capita income didn't improve. Alm and Hart (1998) found mixed results in Colorado, and Engberg and Greenbaum (1997) found a small impact in moderately distressed cities nationwide. Bollinger and Ihlanfeldt (2003) found that jobs in the metropolitan Atlanta area grew faster in census tracts where an enterprise zone lowered

property taxes. On the other hand, more studies have found no positive impact whatsoever: Boarnet and Bogart (1996) for New Jersey, Dowall (1996) for California, Bondonio (1998) for five states, Engberg and Greenbaum (1997) for severely distressed cities, Greenbaum and Engberg (2004) for six states, and Peters and Fisher (2003) for thirteen states.[2] That zones seem to have little or no effect on business activity is also consistent with the finding of Greenbaum and Engberg (2002) that they have little or no effect on housing markets either.

Why haven't enterprise zones been as powerful as general reductions in taxes? One possible explanation is that many of the zones just promote churning—the replacement of old capital stock with new capital stock, as I discussed in the model of tax abatements and office buildings in a declining city. Greenbaum and Engberg (2004) note that "since many of the zone subsidies are tied to the number of new hires or the amount of new investment, new establishments will receive a much larger total subsidy than existing establishments." This explanation is consistent with their finding that enterprise zones made businesses new to the zones start up or enter and grow faster, but depressed the growth of existing businesses; the result was a wash as far as the total volume of business activity was concerned. Even when they're eligible, existing businesses may not take advantage of the tax breaks and subsidies: Dowall (1996) surveyed firms located in California zones, and found that 48 percent of them did not use the incentives available to them. This may be because incentives are marketed to new firms and firms contemplating new construction. As with tax abatements, the real goal of enterprise zones may be to make casual observers think that people's lives are getting better, rather than to make people's lives better.

7. Sports Stadiums and Arenas

Professional sports is a very small industry that receives an awful lot of attention. In 1996, average gross revenue for a team was about $75 million in football, $65 million in baseball, $55 million in basketball, and $30 million in hockey (Noll and Zimbalist 1997, p. 86). The average hospital in 1997 had $63 million in revenue (U.S. Bureau of the Census 2000, table 1303). Total revenues for all four major professional sports in 1997 were around $6 billion, less than a quarter of what Americans spent on books, half of what they spent on

2. More precisely, Boarnet and Bogart found that enterprise zones in New Jersey did not increase employment in the cities they were located in. On average, each enterprise zone covered about a third of its city, and Boarnet and Bogart had no data on employment within the zones. These results are compatible with three different outcomes: employment stayed the same in both the zone and the rest of the city; employment grew in the zone at the expense of the rest of the city; or employment fell in the zone and grew in the rest of the city. Greenbaum and Engberg (2004) found that zones didn't affect employment in nearby areas (or in the zone itself), and so the two studies together weakly support the first possible outcome.

sound recordings or athletic footwear (2000 Statistical Abstract, tables 421, 423, 426).

I'm writing about this particular tiny industry because many people claim that attracting and keeping major league sports franchises has an almost magical role in promoting economic development. Around $7.2 billion has been spent, directly or indirectly, on such ventures in recent years (Siegfried and Zimbalist 2000), most of it from public sources. Again, $7 billion is not a lot to invest over a decade or more—public entities spent more than $7 billion on new construction of water supply facilities in 1999 alone, and families in the South spent more than $8 billion on mobile homes (2000 Statistical Abstract, tables 1191, 1200). But much more attention has been paid to the $7 billion invested in stadiums and arenas than to the much larger amounts invested in public water supplies and southern mobile homes.

The claim that sports franchises promote economic development has two different versions, one about regions and the other about the allocation of market activity between the central city and suburbs within a region. I'll examine each in turn.

The regional claim is that stadiums (or arenas—I'll say "stadiums" when I mean both) make metropolitan areas grow faster. Getting a new franchise, in this view, causes a one-time increase in market activity and employment in a region, and this increase is sustained as long as the franchise stays. The increase comes because people spend money on tickets and related goods and services, and this spending generates jobs.

This reasoning is seriously flawed for obvious reasons. Teams can create economic development externalities within a region only to the extent that they draw money from outside the region into it—money that would not otherwise be coming in—and keep money in the region that would otherwise be going out. The local fan who goes to a ball game but would have gone bowling if the ball team were elsewhere thus makes no difference on the demand side—and that's the vast majority of fans. Neither does the visitor from out of town who would have been in the region anyway—the salesperson who would have gone to a club in the absence of a ball game, or the visiting cousin you would have taken to a restaurant. All that counts so far as bringing in money from outside the region are network broadcast revenues, the expenses of visiting teams and reporters, and those visitors to the region who would not have visited if the team hadn't been there.

On the other hand, once they receive money, from inside the region or outside of it, sports teams tend to spend more of it outside the region than regular enterprises do. Most of their revenues go to players, coaches and managers, and owners—none of whom are especially likely to live in the region year-round. Players and coaches must be on the road for half of the season and often live elsewhere in the off-season. Players save a lot of their money and invest it in worldwide markets. They also pay hefty income taxes, which

leave the local area and go to Washington. Relative to other possible recipients of money that local residents are going to spend on entertainment, professional sports teams are much more likely to send money outside the region. Bartenders, bowling alley mechanics, and waitresses don't live like professional athletes.

Thus there's no reason for thinking that a baseball team, for example, can create any economic development externalities for a region. Moreover, any public subsidy used to attract or keep the team will have to be funded from higher taxes on existing taxpayers—with the negative implications for economic development that higher taxes entail.

Serious empirical work confirms this rough, commonsense reasoning. As Siegfried and Zimbalist (2000, p. 103) summarize the literature: "Few fields of empirical economic research offer virtual unanimity of findings. Yet, independent work on the economic impact of stadiums and arenas has uniformly found that there is no statistically significant positive correlation between sports facility construction and economic development." For instance, Baade (1994) found that personal income grew between 1958 and 1987 at the same rate in thirty-six metropolitan areas that had major league sports teams as it did in twelve otherwise comparable areas that didn't. Walden (1997) concluded that having a major league sports team slowed growth, everything else being equal. Baade and Sanderson (1997) found no perceptible net increase in economic activity or employment in cities that acquired new sports teams between 1958 and 1993, and for Coates and Humphreys (1999), new stadiums and new teams actually reduce per capita income in host communities.

The empirical results are really a lot stronger than the theoretical argument about flows in and out of the region. Proponents of stadiums often claim a different route for stimulating economic development: getting a franchise makes a town a "big-league" city; it generates free publicity; it makes prospective employers feel good about the place; it promotes a favorable image. If any of these effects were large, the empirical results would have been different.

The alternative claim about sports franchises is that they are the key to revitalizing downtown business districts. Teams may have no effect on a metropolitan area, but they can redirect investment to aging downtowns and jump-start development there. Stadiums attract large crowds to the downtown. Large crowds encourage investments in restaurants, bars, and retail outlets. Recreation and retail opportunities make the area attractive for corporate offices, and for higher-income families looking for a lively downtown where they can both work and live while enjoying urban amenities.

On the other hand, stadiums take up large amounts of land—land that might be used for any number of other activities that also attract crowds. Stadiums are often idle, and so may be more of a damper on street activity than a catalyst. Moving large numbers of people into and out of a stadium at the

same time also causes congestion—much more congestion than a block of stores would generate to achieve the same number of person-hours in the downtown. (One plausible story for the recent spate of downtown stadiums is that suburban homeowners found the disamenities of stadium operation so high that their political opposition was guaranteed.)

Building stadiums also seems like a roundabout way of achieving downtown revitalization objectives. If you want restaurants, why not subsidize restaurants? If you want jobs, why not subsidize jobs? (Indeed if you want stadiums as a way of attracting crowds, why not subsidize them by paying something for every ticket sold, rather than providing capital subsidies that are the same no matter whether the teams attract crowds or not?)

At any rate, the question of whether stadiums are likely to help revitalize downtown areas is an empirical one, and the answer is probably not. Rosentraub (1997) found that population levels fell more in the downtown areas of cities with downtown stadiums than in those without, and job levels fell in both sets of cities at about the same rate. In a study with a less rigorous set of comparisons, Austrian and Rosentraub (1997) looked at Cleveland, perhaps the most famous of the urban revitalization stories, and concluded that there were about 1,000 more jobs downtown than you would expect, but that each job represented a public investment of $231,000. Since these jobs would have been located somewhere in the Cleveland metropolitan area, anyway, it's difficult to think that this sort of investment is the best way to go about revitalizing downtowns.

If stadiums produce little or no economic development benefits, does that imply that public subsidies are a bad idea? Not necessarily. Teams may provide all sorts of other external benefits: they give people something to talk about, newspapers something to write about, fans something to be proud of. (There may also be some consumer surplus—the amount that some people spend to attend games may be less than the maximum they would be willing to pay. But research [Alexander, Kern, and Neill 2000] indicates that demand for tickets is highly price elastic, and owners use a large variety of discriminatory pricing schemes to extract as much surplus as they can. Consumer surplus therefore is likely to be small.) See Box 18D for more on the popularity of stadiums.

Each of these external benefits is open to question: employers may not appreciate the time their workers spend chatting in front of the water cooler about last night's game; newspapers can print stories about ball games 200 miles away or about influenza, and we might all be better off if they printed more about influenza; and pride in the accomplishments of someone you never met, who grew up far away and lives most of the year in a different place, who works in the general vicinity of where you work but shows up there only fewer than a hundred times a year and rarely spends a whole workday there—this sort of pride is difficult to comprehend. The real questions to ask

Box 18D

Why Are Stadiums Popular?

If building stadiums is such a miserable policy, why are they so popular, especially with elected officials? It can't be simply that the officials will get construction kickbacks—they can get those kickbacks from building more popular and more meritorious facilities. I can think of four possible answers.

First, local media may be important. A sports franchise gives them something to cover that national media won't. To the extent that people are interested in learning all the details about the local franchise, news media can see their audience increase, possibly at the expense of more national outlets. That sells advertising. Politicians want the media on their side, and so they support stadiums because they help local media.

Second, politicians like the perquisites that come with stadiums: the opportunities to attend events and sit in good seats at reduced prices, to hobnob with celebrities, to be recognized and applauded by fans. A water treatment plant may be a better investment, but it's not something you can really enjoy. Since reporters and media executives also like to attend sports events at discount prices, important media individuals may also enjoy the stadiums. This reinforces media support for stadiums.

Third, voters may systematically underestimate the size of subsidies and interpret a stadium as a sign of confidence in the city. If the stadium is there, they may think, the city is really doing well, and that means the elected officials are doing a good job.

Finally, pride, however misguided, may be important.

in the study of sports stadiums would be about the size and reality of these sorts of external benefits, not about economic development effects.[3] These are difficult questions to answer. And since this chapter is about economic development, not sports, I won't pursue them further.

8. Summary of Economic Development Tools

Economists don't know of any miraculous ways to spur economic development. Neither do other people. The only difference is that economists know that they don't know. We do know what retards economic development, how-

3. The evidence on the consumption externalities of stadiums is meager and conflicting. Carlino and Coulson (2004) find big benefits from National Football League teams—rents go up and wages go down when a team moves to town. Johnson, Groothuis, and Whitehead (2001) found in their surveys that people in Pittsburgh were not willing to pay very much to have the local hockey team around. The difference in the results of these two studies could be due either to different methods, or to different values that people place on hockey and football.

ever: lousy and expensive public services, bizarre and draconian regulatory policies, high taxes, corruption, crime and ethnic conflict, poor and capricious law enforcement, fear of expropriation.

What this review of economic development tools has shown is that governments can't do an otherwise bad job and make up for it by running great economic development programs—because there is no such thing as a great economic development program by itself.

The difficulties we have had in this section in identifying economic development policies, as opposed to policies wise or unwise on traditional cost-benefit grounds, reinforce this general advice. Section I.A showed that economic development externalities are real, because many markets don't work perfectly, but they are not huge, especially in the long run. Section I.B showed that, among otherwise reasonably wise policies, the size of economic development externalities doesn't vary much. It follows that differences in the size of economic development externalities are not often going to be decisive in choosing one policy or another. Making economic development the last chapter in this book was a deliberate decision on my part.

One obvious consequence of this analysis is that economic development—as the term has come to be used in the United States—is not a good way of improving the lives of poor people. The benefits of these programs don't generally accrue to poor people, and often the benefits are small. "Helping poor places" is not a good way of helping poor people, if only because often the best course of action for poor people is to leave poor places (almost everyone reading this book is wildly affluent by world standards, a gift we owe to whatever ancestors of ours left the Old Country or the rural South, if we didn't do it ourselves).

This is not to say that poverty is inescapable. Eating chocolate cream pie is good for some purposes, but not for cleaning carpets. The relationship between chocolate cream pie and carpet cleaning is like the relationship between economic development and poverty alleviation.

Which doesn't imply that carpets can't be cleaned. Carpet cleaning, like poverty alleviation, is just a separate topic. There are many good policies to alleviate poverty—the vast reduction in worldwide poverty over the past two centuries attests to that—and no political ideology seems to have a monopoly on these good ideas. (There are also a lot of bad ideas, and there's no ideological monopoly on them, either.) It just doesn't make a lot of sense to go looking for these good poverty-alleviation policies in the catalog of U.S.-style economic development policies, any more than it makes sense to go looking for carpet cleaner in a bakery.

What about the Erie Canal and other great episodes of economic development? The Erie Canal was good because it was a potential Pareto improvement, not because it brought a lot of jobs to New York City. By hugely reducing the cost of transporting goods to and from the Midwest (both American

and Canadian), the Erie Canal produced great benefits for huge numbers of people throughout the world.

If the leaders of New York State had thought only about the immediate benefits to people living in New York State at the time, however, they might not have gone ahead with the project. The positive role that the idea of economic development sometimes plays in public debates is that it introduces in concrete form the concerns of people who aren't there yet and may never be part of the jurisdiction making a decision. Economic development counteracts parochialism. Thus it sometimes leads government officials to make the right decisions for the wrong reasons, which is good. But it's better to make the right decisions for the right reasons.

II. Economic Development in Many Cities

Section I asked what sorts of economic development policies a wise city or state government might want to adopt—a government that cared about people living in its jurisdiction, not those living elsewhere. We didn't ask how policies in city A affect residents in city B, or vice versa. But surely such interactions occur: when North Carolina's economic development policies lure a pharmaceutical plant from New Jersey, New Jerseyans are affected, and when a Los Angeles movie studio decides to expand its operations, there's less work for New York filmmakers.

These interactions should concern a benevolent government whose citizenry includes both North Carolina and New Jersey, or both Los Angeles and New York. This section asks about policies for that higher-level government: how should it think about the losses that people in New Jersey and New York suffer? Should it encourage lower-level governments to pursue aggressive economic development policies? Should it discourage them, or remain neutral? What does neutrality mean? When we talk about higher-level governments in this section, we'll be concerned both with the federal government, in relation to states and cities, and to state governments, in relation to cities.

Questions like these are heavily debated. One camp wants strict federal controls on economic development activity. In its view, North Carolina's stealing jobs from New Jersey is not much different from any other kind of theft: North Carolina is imposing a negative externality and should not be permitted to do so. The other camp thinks that North Carolina and New Jersey are engaging in healthy competition from which will emerge a stronger nation; that the more state and local governments are forced to innovate, to hold down taxes, and to produce high-value public services, and the less they are able to exploit the businesses in their midst, the better off we'll be. This camp opposes federal controls on economic development activity.

Any discussion of these competing points of view, of course, presumes

some clear definition of what economic development activity is (and is not). We saw in section I how difficult it is to decide what activities constitute economic development, and this difficulty will continue here. If you want to prohibit cities from competing for businesses by offering more attractive tax abatement packages, do you also want to prohibit them from competing by offering better police protection, swifter approval of permits, and lower general tax rates?

Because interjurisdictional competition is a difficult issue, we'll approach it the same way we have approached all difficult issues in this book—we will pare it down into a much simpler problem by making some unrealistic assumptions, come to a good understanding of that simple problem, and then explore what happens when we drop the unrealistic assumptions.

A. The Marriage Market

One way to look at the relationships between cities and firms is to compare them with the marriage market. Just as marriages link men and women, locations link cities and businesses. Different businesses bring different costs and benefits to different cities; different cities offer different opportunities and problems for different businesses. In marriages, it's important to bring together women and men who like each other; in economics, you want to make sure the shipyards don't end up in Oklahoma City and the slaughterhouses aren't in midtown Manhattan.

Let's assume (for now) that each city can accommodate at most one business and each business can locate in at most one city. Some cities can end up without any businesses—ghost towns, and cities that never existed—and some businesses can end up without any cities—businesses that never got started. It is just like having some men or some women end up being single. Notice that in this formulation, benefits and costs are general—the benefits cities get can include economic development benefits, traditional externalities (both positive or negative), and even intangibles like pride; the benefits firms get include the usual advantages of location and climate, as well as anything more idiosyncratic, like the opportunities the CEO might have to visit her grandchildren. But I want to leave out of these costs and benefits the taxes cities collect from firms and the subsidies they pay them—I want to consider taxes and subsidies separately as outcomes of bargaining, not as inputs to the process.

What happens in a marriage market if women and men are left to bargain on their own? Under some circumstances, which I'll discuss shortly, the outcome will be Pareto optimal. Men and women will end up paired with each other in a way that maximizes total benefits realized. Any other system of matches can be broken up by someone who will promise enough to lure a more preferred partner out of whatever match he or she is in. This is a theory

of the marriage market first developed by University of Chicago economist and Nobel Prize winner Gary Becker (1981).

Intuitively, marriages in Becker's system break up when one of the partners is worth more to a potential partner outside the marriage than to the partner inside the marriage. The breakup increases total benefits. Only when total benefits are as great as they can be will no further breakups be possible.

The equilibrium is efficient, but it's not without heartbreak. When Iseult runs off with Tristan, Mark's heart is broken and he must settle for an inferior partner. Is this an externality that calls for government intervention? No—because Tristan must pay for the heartbreak he inflicts on Mark. He doesn't pay Mark, though; he pays Iseult instead. The more Mark is willing to do for Iseult, the more Tristan must do for her in order to keep her away from Mark. Remember that what's important for efficiency is that the person causing damage pays for it, not that the person suffering it be compensated. This is just like an auction: the winning bidder pays the auctioneer, not the losing bidders, but the amount the winner pays depends on how much his winning harms the losers. The pain that jilted and unrequited lovers feel is both real and great, but it's no cause for government intervention.

Similarly, when North Carolina bids a pharmaceutical plant away from New Jersey, or when Phoenix bids a football team away from St. Louis, there's no reason for federal government intervention. The business moves only if the total benefits of the new match are greater than the total benefits of the old; otherwise the old city would have been able to mount a successful counteroffer. The winning city pays for the harm it causes to the losing city—but it pays this, one way or another, to the business, not to the losing city (see Box 18E).

The conclusion about no cause for intervention, however, has merit only to the extent that interjurisdictional competition for business is really like the Becker marriage market. (A similar question arises, too, about whether courtship and marriage in Western countries is really like the Becker marriage market, but since this chapter isn't about marriage, I'll ignore it.) One assumption we made—that each city could attract at most one business—wasn't really essential: we can think about a bunch of sites rather than a bunch of cities, with the benefits realized by the city in which a site is located, and the decisions made on behalf of that site by that city.

Two other assumptions, though, are much more crucial. The first is that cities and businesses actually know and want to act upon the true benefits of every possible match. We call this the perfect agency assumption—that city governments, especially, act as perfect, selfless, knowledgeable agents of their citizens. The last section gave us considerable reason to doubt that cities actually work like this. The second crucial assumption is that cities and businesses can credibly promise to pay each other arbitrary amounts of money just to make a deal happen. We call this the perfect flexibility assumption. Since city governments are supposed to act according to laws, and because

Box 18E

See for Yourself

≡ Suppose there are two cities, Princeton and Camden, and two firms, Campbell Soup and Johnson and Johnson (J&J). Each firm is going to build a single plant, and neither city has room for more than one plant. The cities evaluate the benefits from each firm like this, excluding taxes and other special payments:

	Campbell	J&J
Evaluation by Princeton	$4	$7
Evaluation by Camden	$3	$5

The firms evaluate the profits they could make in the two cities like this:

	Evaluation by Campbell	Evaluation by J&J
Princeton	$10	$9
Camden	$5	$3

Find the stable matching between firms and cities. (A stable matching is one that no other pair can change to their mutual advantage.) What payments have to be made to sustain this matching?

Step 1: Find the matching that maximizes total benefits. There are two matchings:

Princeton with Campbell and Camden with J&J

and

Princeton with J&J and Camden with Campbell.

For brevity, I'll sometimes refer to the first matching as the Campbell matching and the second as the J&J matching. Princeton is the first city in each matching, and once we know which firm is in Princeton, everything else follows.

We can summarize the information about preferences by constructing a chart showing the total benefits to both partners for each possible pairing:

	Campbell	J&J
Princeton	4 + 10 = 14	7 + 9 = 16
Camden	3 + 5 = 8	5 + 3 = 8

Then the grand total benefits under the Campbell matching are the sum along the main diagonal (northwest to southeast): $14 + 8 = 22$. Grand total benefits under the J&J matching are along the other diagonal (northeast to southwest): $16 + 8 = 24$.

Step 2: Show that the Campbell matching is not stable. Suppose we try to operate under the Campbell matching. Then Princeton could approach J&J and say: "Why don't you move here? I'll get rid of Campbell. Right now, I'm only getting \$4 in benefits and you're getting \$3. If we got together, you'd get \$7 and I'd get \$9. We'd both be better off."

Can Campbell and Camden come up with counteroffers to quash this deal? In a nutshell, the answer is no. Princeton and J&J gain together \$9 from replacing the Campbell matching with the J&J matching. Camden and Campbell together are only willing to pay \$7 to stop it. They won't stop it.

Step 3: Find the range of tax or subsidy payments that have to be made to sustain the stable matching. Two different attacks against the J&J matching could be mounted: either Princeton and Campbell could try to get together, or Camden and J&J. A system of payments has to be set to repel both attacks.

Princeton and Campbell, if they got together, would realize total benefits of \$14. So the J&J matching will be stable only if together Princeton and Campbell realize at least \$14 in benefits. Let p denote Princeton's net benefit—the intrinsic value of the match plus any taxes it receives or minus any subsidy it pays—and let c denote Camden's net benefit. Then Campbell's net benefit is $(8 - c)$ and together in the J&J matching Princeton and Campbell realize

$$8 - c + p.$$

So the condition for stability is

$$8 - c + p \geq 14,$$

or

$$p - c \geq 6.$$

Similarly, if Camden and J&J got together they would realize benefits of \$8. Camden's net benefits are c and J&J's net benefits are $(16 - p)$. So the other condition for stability is

$$c + 16 - p \geq 8,$$

or

$$p - c \leq 8.$$

In addition, Camden's benefit cannot exceed \$8 and Princeton's benefit cannot ex-

ceed $16. This is because we rule out negative benefits for the companies (they could just shut down). Together these conditions give the pairs of benefits to Princeton and Camden that make the matching stable. These are illustrated in Figure 18E.1.

The parallelogram in this graph gives the combinations of net benefits that induce stability. To find the taxes or subsidies implied, just subtract $5 from Princeton's benefit and $3 from Camden's. Unless we know something more about the bargaining process or the other options the agents have, we can't specify more precisely what payments will be made.

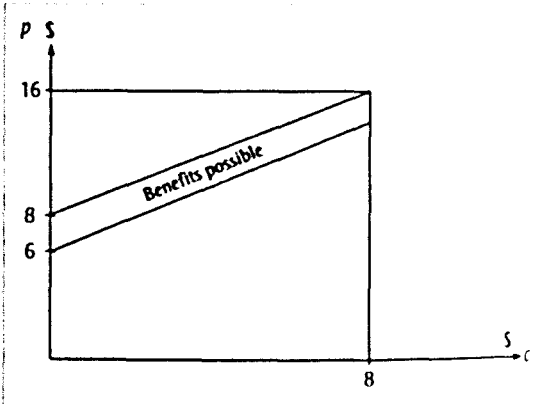

Figure 18E.1 Possible net benefits under the stable matching.

Step 4: What happens if firms and cities always split the range of benefits down the middle? This is a simple assumption about bargaining that will allow us to compare different policies more definitely. Splitting the difference results in the benefits associated with the point in the middle of the parallelogram. Camden's benefits lie between zero and $8; so the split gets Camden $4 in benefits. Campbell also gets $4. That means Campbell pays Camden taxes of $1. With Camden's benefits equal to $4, Princeton's benefits lie between $10 and $12. Splitting the difference gives Princeton $11; it collects $6 in taxes from J&J. J&J's benefits are $5.

governments in many cases can't be bound by their predecessors, there's also reason to doubt how applicable the perfect flexibility assumption is.

But I don't want to take up immediately an examination of these two assumptions and the consequences for marriage markets if one or both don't hold. Instead, I want to look next at what it would imply for policies of the federal government if they did hold. That way, we'll be able to understand how important these assumptions are for policies.

B. Perfect Agency and Perfect Flexibility

The obvious policy implication of the perfect agency and perfect flexibility assumptions is that the federal government should not interfere in economic development competition among states and cities. The outcome without federal (or state) interference will always be Pareto optimal, and so federal in-

volvement can't make things better. The cure would be worse than the illness, because the patient is otherwise perfectly healthy. However, it's worthwhile considering the details of how various putative cures harm the patient.

1. Helping Poor Places

Quite a few serious writers have argued that the federal government should aid the economic development efforts of places with poor and unemployed populations, but not those of richer places. (Bartik 1991 and Anderson and Wassmer 2000, for example, have espoused this view.) The argument is that economic development externalities are greater in poor localities—which may be accurate, as we saw in section I.A. Several federal programs, such as Urban Development Action Grants and parts of the Economic Development Administration, operate in this way. States have analogous programs for their poorer cities.

But if poor cities benefit more from economic development than rich cities do, they should be willing to bid more for business. With perfect agency and perfect flexibility, any greater benefits to poor cities are already incorporated in the bargaining process. Subsidizing businesses in poor cities only makes poor cities more similar to rich cities in their bidding for business. This gives businesses in other cities a better bargaining position. It might also help poor cities, but it might not, and it could lead to deadweight losses by inducing firms to locate in the wrong places.

How? Consider first a general subsidy: a federal subsidy of the same amount to any firm that locates in a poor city. A general subsidy won't change locational patterns. The matching of firms to cities that maximized total benefits before the federal subsidy still maximizes total benefits with the subsidy. Any system of matches includes the poor city exactly once, and so the grand total benefits of each system of matches increases by the amount of the subsidy; the ranking stays the same. The businesses in the poor city stay the same.

The threats and counteroffers that govern the distribution of benefits between cities and firms change, however. In the poor city, there's more for everyone, so we would expect both the city and the firm that locates there to gain something—and we have no reason to think that the city gains the whole amount of the subsidy. In the other cities, firms are in better bargaining position because their threats to leave and go to the poor city are more credible. Hence firms in nonpoor cities gain at the expense of those cities. For an example of the effect of subsidies, see Box 18F.

(Since firms gain generally, and stock ownership is usually concentrated in richer regions, subsidies for firms in poor regions can end up benefiting rich regions more than poor; see Dupont and Martin 2003.)

Instead of a general subsidy, the federal government could give a specific subsidy—a subsidy targeting only certain kinds of businesses (for instance, new or high-tech firms). Such a subsidy may or may not alter locational pat-

Box 18F

See for Yourself

≡ Let's take another look at the example described in Box 18E. This time, what happens when the federal government gives a subsidy of G dollars to any firm that locates in Camden?

Step 1: Revise the total benefits table and find the stable matching. If any firm locating in Camden gets G dollars from the federal government, the total benefits table looks like this:

	Campbell	J&J
Princeton	14	16
Camden	$8 + G$	$8 + G$

So the main diagonal, what we call the Campbell matching, has grand total benefits of $(22 + G)$, and the other diagonal, the J&J matching, has grand total benefits of $(24 + G)$. No matter how big or how small the federal subsidy is, the matching that has greater total benefits does not change.

Step 2: Find the parallelogram of city benefits. As before, consider the two challenges to the J&J matching. If Princeton and Campbell get together, their benefits are still \$14. Princeton's benefit is p, and Campbell's benefit is $(8 + G - c)$, and so one condition for stability is

$$8 + G - c + p \geq 14$$

or

$$p - c \geq 6 - G.$$

terns. If it's not big enough to alter locational patterns, then its only effect is to change bargaining in existing matches. Firms of the targeted type get more out of their existing partners, and those partners—cities otherwise hosting the targeted firms—lose out. Since a subsidy that's not big enough to alter locations doesn't make anything happen in the poor city, the poor city is unlikely to gain.

If the specific subsidy is large enough, it can alter locational patterns. Of course, this implies a deadweight loss, since the pattern without subsidies maximized total benefits. As with general subsidies, the poor city gains, since its firm is now subsidized, but is unlikely to gain the full amount of the sub-

If Camden and J&J get together, they realize benefits of $(8 + G)$. Camden's benefits are c and J&J's are $(16 - p)$. Thus the stability condition is

$$16 - p + c \geq 8 + G$$

or

$$p - c \leq 8 - G.$$

In addition, Princeton's benefits cannot exceed 16, and Camden's cannot exceed $(8 + G)$. Figure 18F.1 illustrates the resulting parallelogram.

Step 3: What happens if firms and cities split benefits in the bargaining range evenly? Camden's benefits lie between zero and $(8 + G)$. Thus, with splitting the difference, Camden gets $(4 + G/2)$. Half of the subsidy goes to Camden, half to Campbell. With Camden's benefits at $(4 + G/2)$, Princeton's benefits lie between

$$6 + c - G = 6 + 4 + G/2 - G$$
$$= 10 - G/2$$

and

$$8 + c - G = 8 + 4 + G/2 - G$$
$$= 12 - G/2.$$

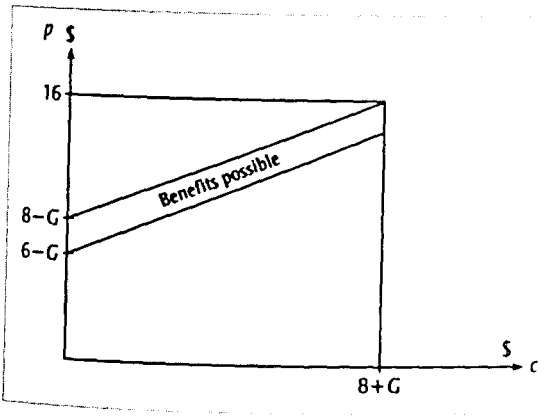

Figure 18F.1 Possible net benefits under the stable matching with a federal subsidy.

Splitting the difference gives Princeton benefits of $(11 - G/2)$ and J&J benefits of $(5 + G/2)$. Thus J&J gains half the subsidy from its threat to move to Camden, and Princeton loses half.

sidy. The firm that moves also gains—otherwise it would not have moved—and its gains come at the expense of the poor city and the federal government. Once the locational pattern has changed, additional subsidies don't necessarily affect the nonpoor cities (unless they still contain some targeted firms). In short, if the federal government wants to help cities, subsidizing economic development in them is a bad way to do it.

b. Industrial Revenue Bonds The federal income tax exempts interest from state and local bonds from taxation. This allows state and local governments to borrow at lower rates than ordinary corporations. Under some circum-

stances (describing exactly which circumstances would require another volume), states and cities can borrow money to build a plant for a business, and then get paid by the business. The bonds that states and cities use to do this are called industrial revenue bonds. They're a roundabout way for some firms to get the federal government to lower their interest costs.

If this policy has an impact on industrial location, it creates deadweight loss by moving businesses to where they shouldn't be. If not, it just subsidizes businesses, and may harm jurisdictions that refrain from using these bonds. Since industrial revenue bonds can be used even by rich states and cities, there's no reason to think that the policy helps poor cities. But the policy lets individual cities help individual firms at what appears to be no cost to the city, and so it is an immensely popular approach, despite its almost total lack of merit.

Getting rid of a federal policy like this presents another problem as well: how to define the objectionable activity. You can't just say, "No tax-exempt bonds for economic development purposes," because it's almost impossible to say what economic development activities are. What do you say about a police precinct house built across the street from a new office building? Or an enhanced sewer system in a town with a paper plant?

The history of sports stadiums is instructive on this point. In 1986, concerned about implicit federal subsidies because cities had been building stadiums with industrial revenue bonds, Congress removed the tax exemption from stadium bonds when cities planned to use ticket revenues to pay off more than 10 percent of the money. Cities reacted by reducing other forms of subsidies to teams, and by paying off stadium bonds without any ticket revenue. So the implicit federal subsidy for stadiums continued.

Thus, ending implicit federal subsidies for some economic development projects would probably be difficult, so long as "normal" state and city bonds are tax exempt. However, there don't seem to be any particularly compelling reasons why these bonds should be tax exempt. See, for instance, Zimmerman (1991) for a more detailed analysis of this issue.

C. Imperfect Agency and Imperfect Flexibility

Any argument for higher-level involvement in state and local economic development has to start from a rejection of either the perfect agency or the perfect flexibility assumption. In this section, we'll try to figure out whether plausible alternatives to these assumptions lead to any definite policy recommendations.

Consider first imperfect agency, the assumption that city officials don't always act in the best interest of their constituents. Many forces might lead government officials astray: ignorance, corruption, desire to get good media coverage, laziness. They may be systematically too generous to large, visible,

and new businesses; systematically too tough on small, invisible, and old businesses—or maybe not; no definitive empirical evidence exists. It has been found, however, that counties that win bidding wars for large manufacturing plants seem to do better than those that lose (Greenstone and Moretti 2003); this suggests that city officials operating under current laws are somewhat responsible.

When one city's officials misperceive the benefits particular businesses would bring, their own constituents are not the only ones who lose out. Their higher bids, even if not successful, can cause other cities to give up more to retain the businesses they are bidding for. If their higher bids are successful, they create an inefficient system of matches. In the example of Camden and Princeton, for instance (Boxes 18E and 18F), if Camden officials overvalued all businesses by $1, the location pattern wouldn't change and nothing would be different in Camden, but Princeton would have to reduce its tax collection by $1. If the Camden officials overvalued only J&J by $3, they would force the replacement of the efficient system of matches with the inefficient one.

Since everyone can lose when city officials are poor agents, some upper-level intervention might be justified. The analogy with marriage markets comes in handy here: because we believe that people are not always good agents of their own well-being in their love lives, governments restrict in many ways the marriages people can enter into. You can't marry a cousin, a child, a dog, or a married person, even if you're desperately in love and the other party wants to marry you. Most states also require waiting periods, both for marriage and divorce, and some require blood tests. Even though governments generally don't intervene in marriage markets, they do stop actions they think are serious mistakes.

Are there analogous steps that higher-level governments take to prevent lower-level governments from making huge mistakes? Some are obvious: laws against corruption, public-notice requirements, waiting periods; in general, procedural due process is imposed before a government body can be either extremely generous or extremely mean to a business or a person. Most of these are state rules binding cities, not federal rules binding states. These rules don't prevent all mistakes, and they stop some deals that in fact would be good. The case that's made for these restrictions is that, on average, they prevent more bad deals than good (and so it's ultimately empirical). Some guys really would be happiest married to their dog or their cousin, and the other party would be happy, too.

The other way higher-level governments approach the agency problem is by limiting the flexibility of city officials. Imperfect flexibility is basically a consequence of imperfect agency, a way of ameliorating the problems it causes. Thus taxes have to be imposed with some degree of uniformity; lump-sum subsidies can't be given willy-nilly; legislation has to address classes, not individuals. (Again, these are usually state rules binding cities.) A lot of the re-

strictions on flexibility can be subverted by sufficiently clever legal minds, but sufficiently clever legal minds are expensive, and so the laws form a significant disincentive to flexibility.

Losing flexibility, of course, is a problem. The economic-development marriage market leads to an optimal assignment of businesses to cities only if cities can make appropriate offers and counteroffers, and promise transfers or taxes within sometimes narrow ranges. They can't do this if they are bound up by restrictions like uniformity and generality. It's difficult to tell, though, what biases this lack of flexibility creates.

So it appears that we face a dilemma: higher-level governments can either leave city officials alone and be content with letting those officials make lots of mistakes of their own volition; or they can bind them with rules so that the mistakes are premade. In reality, though, the choice is not quite so stark.

The way to improve the trade-off between mistakes caused by discretion and mistakes caused by rules is to improve considerably the quality of rules. If operating according to uniform rules means that a city must charge every firm an average share of some huge general overhead cost, unrelated to either the costs or the benefits that a firm brings to the city, then operating according to uniform rules will cause enormous inefficiencies. A supermarket that charged everyone who entered the same price, no matter what they left with, would do poorly, and its manager would soon start cutting side deals with customers and potential customers.

But operating according to uniform rules doesn't have to mean charging average shares of general overhead, any more than operating a supermarket has to mean charging the same price for every shopper. The more money a city gets from land taxes, the less it has to raise through general uniform taxes on businesses and households. If businesses and the people associated with them pay marginal cost for the services they use and the negative externalities they cause, and if they're subsidized for the positive externalities they create (including employment), then there's a lot less about the relationship between the city and the business that has to be the subject of discretion and back-room negotiation. Rules can be reasonably finely tuned to marginal costs and marginal benefits and still be uniform. In supermarket management, careful pricing of particular items is the preferred alternative to the idiocy of one price for every shopper. Individual discretionary haggling is not the preferred alternative.

Marginal-cost prices and marginal-benefit subsidies have two other benefits for economic development: they provide better incentives for businesses to operate well once they've arrived in a city, and they affect all businesses, not just those that are big enough or loud enough to attract officials' attention. Probably the most productive intervention that higher-level governments can engage in is to permit, encourage, or require lower-level governments to establish good systems for taxes and subsidies. Like congestion pricing, these systems may not have been technically feasible fifty or even twenty years ago, but

the progress of information technology has gone a long way to reducing feasibility as a problem.

III. Conclusion

Economic development is a worthy goal for cities to pursue. Economic development externalities are real, even though they've never been measured well and are surely not so large as popularly believed. Economic development is not a good way to fight poverty, but many other worthy activities are not good ways of fighting poverty either. The tools that cities commonly employ to foster economic development are not particularly effective, and some are spectacularly counterproductive, but some policies are better than others—and most of the good ones can be identified without reference to economic development.

There don't seem to be any particularly strong arguments for upper-level governments either to restrain or to encourage the economic development activities of cities. Prohibiting interjurisdictional job stealing seems as hopeless and as unproductive as prohibiting the alienation of affections of unmarried lovers (or even married ones). Encouraging economic development activity, even on a geographically selective basis, doesn't seem to have much to commend it either. Upper-level governments should help lower-level governments use better tax systems, systems that impose smaller deadweight losses, but you don't need to study economic development to come to this conclusion.

In the final analysis, economic development is a lot like sleep. Sleep is great, but it's not a panacea. Moreover, it's a goal best pursued by not thinking about it. If you stay healthy and active and don't drink too much caffeine (and you curl up with a book like this), you'll fall asleep on your own. But if you think about whether you're falling asleep and you worry about it, you'll never get there.

Questions

1. Using the example in Boxes 18E and 18F, work through the implications of a specific subsidy to J&J if it locates in Camden.
   a. How big does the subsidy have to be to induce J&J to move to Camden? Call this the critical value.
   b. If the subsidy is less than the critical value, construct the parallelogram of benefits required for stability.
   c. Find the midpoint. Who gains as the subsidy rises? Who loses? Who is unaffected?

d. Suppose the subsidy is greater than the critical value. Construct the region of benefits required for stability. (*Hint:* It's not going to be a parallelogram this time.) Princeton's benefits cannot exceed \$14. Draw this line on the diagram and note that it places a different upper bound on the benefits that Camden can get.

e. Find the midpoint. Who gains as the subsidy rises? Who loses? Who is unaffected?

2. In the same example (without federal subsidies), how do the benefits that Princeton realizes change as the benefits that Camden would enjoy if J&J located there change by a small amount? Discuss the contention that, in luring J&J away from Camden, Princeton is imposing an external cost that should be corrected.

3. Outline how you would perform a serious cost-benefit analysis of holding the 2016 Summer Olympics in Chicago. Who gains? Who loses? How much? Can the winners compensate the losers?

4. Legal pot in Quonset, Rhode Island? Ever since Quonset seceded from the United States and joined the United Nations, this issue has been intensely debated. A group of businesspeople has proposed that marijuana consumption be legalized in Quonset (exports would be prohibited). "It will be good for business and good for Quonset," they say. "Tourists will come from all over the world; they'll stay in our hotels and eat in our restaurants; they'll buy snacks and souvenirs in our shops; they'll use water and electricity; and they'll pay all sorts of taxes."

a. Consider the following three markets: marijuana (which would be produced at constant marginal cost); Quonset souvenirs (produced at constant marginal cost and sold in a competitive market); and electricity (produced by a regulated monopoly and sold at average cost, which is greater than marginal cost). In each market, identify the winners (if any) and losers (if any) from legalization. In which markets is the gain of the winners more than sufficient to compensate the losers for their losses?

b. Assume the following values. Before legalization, the price and marginal cost of marijuana in Quonset was 10 Quonset-dollars. After legalization, it will be 5 Quonset-dollars. The annual demand for marijuana in Quonset is

$$m = 1{,}000 - 50p_m - 200p_L,$$

where m is the quantity of marijuana demanded in grams, p_m is the price of marijuana per gram in Quonset dollars, and p_L is the price of Quonset land per hectare in Quonset dollars. The quantity of land in Quonset is 5,000 hectares. The annual demand for land in Quonset is

$$L = 10{,}000 - 200p_m - 3{,}000p_L.$$

Who gains from legalization? How much?

c. The U.S. government offers to pay Quonset 2,500 Quonset-dollars per year if it doesn't legalize marijuana. Should the government of Quonset accept this offer? Why or why not? If it accepts the offer, what should it do with the money?

5. How, if at all, would this chapter be different if it were about cities in developing countries rather than cities in the United States?

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