

Stemming Sprawl: The Fiscal Approach

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SPRAWL DEVELOPMENT CONFIGURATIONS are not natural. Were it not for incentives to the contrary, people would choose to live and work in close proximity. This has been well documented in studies of every era and place.¹ Only when incentives are put in place that induce people to live in other circumstances do they choose settlement patterns that are remote, less accessible, and alienating. Only in the industrial era and after have outlying areas become more attractive. Tracing the history of such developments makes it clear that they are a response to less livable conditions of urban life as they have evolved—the pollution of air and water, loss of nature, loss of privacy, housing deficiencies, and so on. In more recent years, differentials in taxation and the quality of services (such as schools) have also played a role in making the suburbs more attractive.

Those differentials are explained by public policies that were never understood or envisioned by their designers. Lacking an appreciation of land economics or the relationship between land value and transportation service, governments have put into place a system of taxes and subsidies that amplify and exacerbate whatever impulses already exist to escape the pathologies of urban environments. The polluting industries of the nineteenth and early twentieth centuries are largely gone, but the impulses to leave cities behind continue, driven now by policies for which governments themselves are responsible.

It is important to understand how closely linked transportation costs and land costs are. There are fixed costs involved in locating a home or a business in either place: the costs of building a home, office, or factory and the costs of purchasing

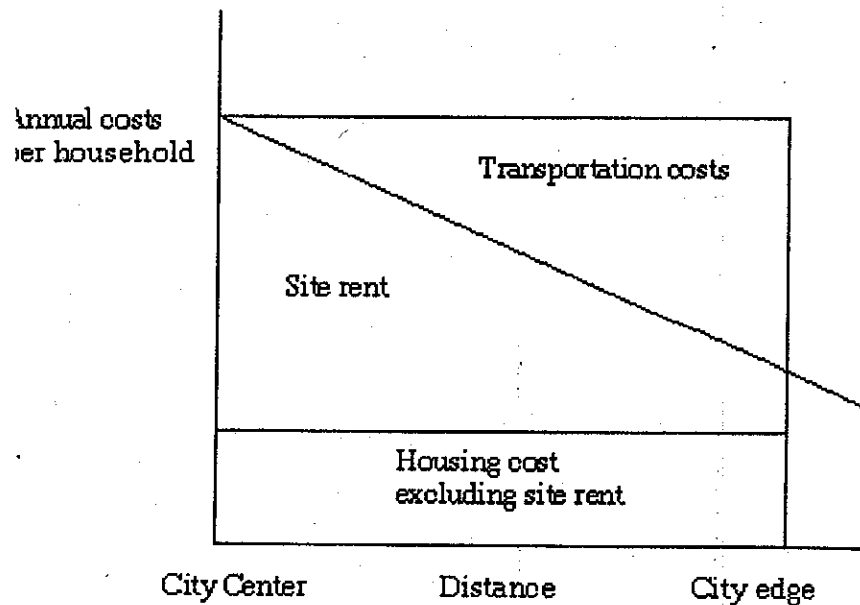


FIGURE 10.1.

a car or a truck. Leaving those costs aside for the moment, consider the relationship between the variable operating costs due to locating in an urban center versus those in locating at the periphery, expressed conceptually in figure 10.1.

Figure 10.1 shows that a household or business is likely to incur costs by locating at either site, whether at a city's center or at the city's edge. At a center site, the costs will take the form of higher land rent; at the city's edge, the costs will be transportation related. If this is not readily apparent, it is because society provides subsidies to titleholders and travelers beyond what are directly experienced or understood.

Transportation Costs

Consider first the costs of transportation in remote areas; such costs are necessarily higher. The way in which geographers and some land economists understand transportation is by using the terms "accessibility" and "mobility." As explained in one basic textbook,

Accessibility refers to the number of opportunities, also called activity sites, available within a certain distance or travel time. *Mobility* refers to the ability to move between different activity sites (e.g., from home to a grocery store).²

American transportation planners have focused excessively on mobility with almost total disregard for accessibility. The result is that we are frequently hard put to accomplish our transactions for lack of easy access, even though it is easy to travel great distances with facility. One old joke will serve as a metaphor to better illustrate the dilemma:

A man ordered a cup of coffee at a lunch counter and shortly then ordered a second cup. After quickly drinking that cup, he ordered a third cup, and then a fourth, and then a fifth. The waitress, astonished at this man's requests, finally said to him, "My Sir! You certainly do like coffee." "I certainly do," he replied. "Otherwise I wouldn't be drinking all this water just to get a little."

The analogy is apparent: Water is to mobility as coffee is to accessibility. We do an awful lot of driving just to do what we need to do. This is because transportation engineers and land use planners have confused two fundamental concepts: access and mobility.

By confusing these two principles, we spend an inordinate amount of money on transportation services, most of it on roads and highways. One 1993 study calculated that the total costs of motor vehicle transportation to our society equal approximately a fourth of our gross domestic product (GDP).³ The study concluded that "when the full range of costs of transportation are tallied, passenger ground transportation costs the American public a total of \$1.2 to \$1.6 trillion each year. Just the costs of automobile crashes represents a figure equal to 8 percent of the American GDP.⁴ Japan, by way of comparison, spends an estimated 10.4 percent to satisfy all its transportation requirements, although the figure might be a bit low because not all externalities are included in the calculation.⁵ Road user fees in 1991 totaled only about \$33 billion, whereas the true costs to society were ten times that;⁶ put another way, drivers pay only 10 percent of the true costs of their motor vehicle use.⁷ The balance is paid by society, effectively subsidizing highway use by paying for all but the marginal out-of-pocket operating costs.

The relationship between transportation costs and land values can be made even clearer by empirical study of how land values increase as one moves toward the center of the city. In an investigation for the Urban Land Institute, the author concluded that, for Portland, Oregon,

each additional mile [traveled] translated into slightly more than \$5,000 in housing costs; closer-in locations command a premium, those farther out save money. A ten-mile difference, all other things being equal, would amount to about \$56,000 in new home value.

For a household in which one worker drives downtown (or at least to a more central location) to work, that ten-mile difference may amount to 4,600 miles annually, assuming 230 days of commuting and a round-trip of 20 miles each

day. Moreover, if non-work trips to the central area and elsewhere doubled that amount, the tradeoff would be about 9,000 miles annually, which could mean a higher/lower driving cost of \$3,000 annually, not counting the time saved/spent.⁸

Such are the savings for living closer to the urban center by ten miles. If the urban resident has to rely on a car nonetheless, subtracting some \$3,000 annual travel expenses will still leave him paying again that much (and likely more) to own a car. Author James Kunstler put the true costs along with other experts at about \$6,100 annually seven years ago.⁹ The American Automobile Association calculated that a car driven 15,000 miles in 2001 cost 51 cents per mile, or \$7,650.¹⁰ This figure reflects only direct costs to the driver, not the additional costs passed on to society.

The latter figures include externalities such as pollution and the costs of highway crashes. Hortatory public pleas for people to tune up their engines so that they pollute less, to inflate tires properly, and to drive more safely are not likely to change the reality that people are forgetful and fallible. Pollution-free cars are not available; people must drive to participate in this society. The consequences of sulfur dioxide, carbon dioxide, and ozone are no longer a matter of debate; they are scientific fact. Despite frequent headlines about replacing the internal combustion engine, all the realistic substitutes also ultimately rely on fossil fuel power; solar-powered cars are far in the future, if at all, and also fail to deal with any transition. And every person driving his or her own car multiplies the probabilities of accidents. When people step into a car, they are seldom mindful of such odds. Yet if the direct pecuniary costs of driving increase in any substantial way, there will surely be significant changes in the trade-offs involved in housing/transportation choices. As will be made clear later, making costs visible and linking them to private personal behavior is one way to ensure that transportation pays its own way.

Sooner than Americans are likely to bear the real burden of global warming's environmental consequences, they are likely to experience the onset of price rises for petroleum. Experts are divided, but among those best insulated from the pressures of bias, there is increasing consensus that the peak of oil extraction worldwide will come sometime around 2010 if not sooner.¹¹ Rising prices will not induce greater supply; it will not change the fact that the world will have passed the point of most easily extracted oil and will enter a long and increasingly steep period of declining availability. It is rather a matter of physics: When it costs more in energy to bring oil from deep in the earth than what can be extracted, it is not worth the investment. Even the greater wealth of American society will not insulate it from world competition over what is a limited and fungible commodity. How this alters the calculations Americans make about where to live and work will increasingly depend on the price they are willing to pay for transportation service.

Looking at figure 10.1 once more, it is likely that the slope of the line reflecting land rent and transportation costs will become steeper in time, making each factor greater relative to the other. The century during which motor vehicle transportation was dominant tended to flatten that line, but the greater and growing transportation costs will tend to make land values at urban centers higher relative to remote locales, much as occurred in pre-industrial times or during the railroad and canal eras. George Kennan notes in one of his books that

The railway . . . was capable of accepting and disgorging its loads, whether of passengers or freight, only at fixed points. This being the case, it tended to gather together, and to concentrate around its urban terminus and railhead, all activity that was in any way related to movements of freight or passengers into or out of the city. It was in this quality that it had made major and in some ways decisive contributions to the development not only of the great railway metropolises of the Victorian age—particularly of such inland cities as Moscow, Berlin, Paris, and Chicago—but even certain of the great maritime turnover ports, such as London and New York.

The automobile, on the other hand, had precisely the opposite qualities. Incapable, in view of its own cumbersomeness and requirements for space, of accepting or releasing large loads at any concentrated points anywhere, but peculiarly capable of accepting and releasing them at multitudes of unconcentrated points anywhere else, the automobile tended to disintegrate and to explode all that the railway had brought together. It was, in fact, the enemy of the concentrated city. Thus it was destined to destroy the great densely populated urban centers of the nineteenth century, with all the glories of economic and cultural life that had flowed from their very unity and compactness.¹²

Land Rent

From the standpoint of an economic geographer and for some land economists, land rent is simply capitalized transportation cost. Land rent is the surplus generated by social activity on or in the vicinity of locational sites that accrues to titleholders of those parcels. Whether or not it is recaptured by public policy, rent is a natural factor deriving from the intensive use of natural capital. One must return to nineteenth-century classical economics to appreciate the importance of economic rent or land rent; neoclassical economic frameworks have largely discarded it.¹³ More intensive use of high-value land sites leads to site configurations that are less dependent on transportation services. Land rent is highest where the greatest traffic and market exchanges occur, that being at the center of large conurbations. Comparing land values of urban property parcels, the highest land rent in the urban cores and traffic

junctures are analogous to the contours of land elevations. Mountain peaks gradually slope down to valleys and flatland regions and continue outward until at distant points—perhaps at the poles of the earth—land sites have no market value at all.

The differentials in land values are profound, even more than most people realize. In 1995, in the small city of Ithaca, New York, the highest quintile of land had a value of over \$56,000 per acre in the downtown center, whereas the lowest quintile only a mile away falls to less than \$3,000.¹⁴ Large city centers have far higher site prices. Even in Polk County, Iowa (which includes Des Moines), in the middle of cornfields where I did a study two years ago, the highest urban value land site was \$31.3 million per acre, which quickly declined to about \$20,000 per acre only about a mile away. In the spring of 1998, one land parcel (the building was to be razed) of less than an acre in New York City's Times Square and split in two pieces by Broadway was sold by Prudential Life to Disney for roughly \$240 million.¹⁵ To take another instance, a nine-acre tract on the East River in New York City occupied by an obsolete power plant was purchased by Mort Zuckerman to build high-rise condominiums two years ago. The sale price was in the neighborhood of \$680 million and would have been higher were it not for some enormous costs associated with the demolition of the old structures.¹⁶ It should be noted that the overwhelming proportion of land value is in cities; relatively speaking, the site values of peripheral lands, typically used for agriculture and timber growth, are negligible.

Land values are high in urban areas because, over time, rent accrues to a site. Each improvement in proximity to a property parcel enhances the value of all other parcels. This makes even unimproved sites attractive objects for speculation, particularly when land sites surrounding it are to be improved by adding either transportation service or new structures. One nine-mile stretch of interstate highway in Albany, New York, costing \$125 million to construct, has yielded \$3.8 billion in increased land values (constant dollars) within just two miles of its corridor in the forty years of its existence.¹⁷ This is a thirty-fold return in a time span typically used for bond repayment! The Washington *Metro* created increments in land value along much of the 101-mile system completed by 1980 that easily exceeded \$3.5 billion, compared with the \$2.7 billion of federal funds invested in *Metro* up until that time.¹⁸ Any major building construction project, private or public, will have a similar effect on adjacent land sites. Differentials in land value can have a profound effect on decisions made by titleholders, either positively by inducing appropriate development in urban cores or negatively by giving monopoly titleholders power to hold sites out of use for long-term speculative gain. Such decisions of course determine the character of urban configurations and society as well.

Stemming Sprawl: Command-and-Control Measures

Policymakers have two modes of leverage by which to implement public will: 1) so-called command-and-control approaches that are typically enforced by what state and federal constitutions group under "police powers" and 2) fiscal approaches that typically involve a variety of taxes, fees, fines, and other charges that derive constitutionally from either police powers or "tax powers." When governments administer either of these powers, they are legitimate and authoritative. Fiscal measures available to governments can come from either ground. The charges that the private sector usually impose differ in that they usually are responsive to market forces. Prices that are established by government, however, are not necessarily responsive to market forces, nor are they intended to be. Rather, they are set in order to accomplish specific public policy goals.¹⁹ They can be no less efficient, however, when responsibly instituted.

Governments face the challenge of knowing which of the tools at their disposal—command-and-control approaches or "pricing" approaches—will best serve effective and efficient achievement of public policies. Only in recent years, however, has there been a renewed interest in fiscal levers to achieve goals that policymakers seek to achieve. There is particular interest among students of welfare economics in incorporating costs earlier regarded as externalities, especially in designing environmental policies. Moreover, the use of pricing approaches to recover costs of government services that have a high level of private good about them can bring about more attractive and achievable goals than reliance on conventional police power approaches. User fees, environmental fees, and other such fiscal tools have become more fascinating—at least to students of public policy—than conventional taxes.

The renewed interest in fiscal approaches comes in recognition of the fact that traditional command-and-control approaches have not been successful. Government authority is far more effective at prohibiting and controlling than it is inducing and channeling.²⁰ Three illustrations of failed command-and-control approaches will demonstrate this: zoning, urban growth boundaries, and altering (usually expanding) political jurisdictions.

Zoning

The largest single and impartial study of zoning, a 1969 report to the National Commission on Urban Problems (the Douglas Commission), conceded that zoning is of questionable value. A part titled "Fragmentation in Land-Use Planning and Control" quoted with approval a (then) recent study that had held the following:

- 1) While a great deal has been said about what zoning ought to do, very little has been said about what zoning actually does to the city and its inhabitants.

- 2) Although zoning is the most widespread tool of land-use control and urban planning in the United States, there is almost no evidence, logical or empirical, to indicate whether or not zoning accomplishes the goals and purposes attributed to it by planners and other proponents.
- 3) There is almost no evidence to indicate that the unzoned city is substantially different from, or substantially similar to, the zoned city.²¹

Planners, of course, respond by saying that they have been given too little power and that their designs needed to be incorporated more widely, comprehensively, and stringently over broader regions. To their way of thinking, it is the balkanization of municipal plans, as well as their tepid injunctions, that account for failure. Zoning, they argue, needs the even more fundamental support of "master plans," that is, more command-and-control instruments.

Zoning becomes captive of parochial interests—home owners, speculators, the highway industry, and building contractors—who naturally either resist or exploit the inexorable and evolutionary patterns of change. The political Right criticizes zoning for interfering with individual choice and rational land use,²² and the Progressive Center criticizes it for being outdated and rigid at best, unresponsive and destructive at worst. Alan Ehrenhalt, columnist for *Governing Magazine*, said,

The postwar zoning codes discouraged the old pedestrian-scale Main Street corridors that had flourished before World War II, and encouraged their replacement with strip-mall-like businesses that provided large amounts of parking. They took the idea of segregated uses and pressed it much further than the original versions had dared go. The more distance they could create between residential, commercial and industrial uses, planners reasoned, the easier it would be to dissuade residents from escaping to greener pastures.²³

Implicit in all this is an authoritarian approach to land use decisions. It arises out of the notion that professionals—in this case planners—know best and that fragmented land use is an outgrowth of "excessive localism" and fragmented decision making and an inability to see the "big picture." The report recognized the continuing influence of the classic approach of planners first put forth in the (congressional) Standard City Planning Act of 1928 and defined in detail in Edward Bassett's classic book *The Master Plan*. In that text, to influence planners for decades to come, three criteria determined the scope of a good plan: "Each of the elements of the plan relates to land areas; has been stamped on land areas by the community for the community use; [and] can be shown on a map."²⁴ Particularly revealing, and no doubt deliberate, is the use of the word "stamp." The approach is autocratic, static rather than organic, and governmentally expensive.

Urban Growth Boundaries

Urban growth boundaries (UGBs) are another panacea receiving great attention: the attempt to curtail outward growth by imposing a constraining girdle on development. Portland, Oregon, and Boulder, Colorado, are the exemplars, both having instituted their policies decades ago. In Boulder, however, the results are more in consequence of factors relating to topography and infrastructure service than to prohibition of outward extension.²⁵ And Portland has been pressured to alter its boundary repeatedly as differential land values within and beyond the boundary induce growth patterns both unnatural and inefficient.²⁶ Landholders within the city endorsed it because it doubled their site values in a decade, which has meant that, relative to local income, housing is now more expensive than in any city except San Francisco.²⁷ Inevitably, the economic pressures grew to the point of political crisis, at which time the policies were relaxed. This is because UGBs deal with symptoms rather than the root economic causes of the problem. In 1996, six Bay Area communities "locked in" long-term protection for the greenbelt by adopting a UGB covering a total of 3.75 million acres.²⁸ For perspective, this translates to 5,860 square miles, an expanse equal to that of Connecticut and Rhode Island together. But only 731,000 acres, 1,142 square miles, are urbanized²⁹ at the present time, and it could be a century before "build-out" and any significant impact from such measures occur. It was politically impossible to impose any smaller design, which illustrates the difficulty, and indeed the fallacy, of using a command-and-control device to constrain an inexorable economic force.

Elastic City Boundaries

The former mayor of Albuquerque, New Mexico, David Rusk, has made a name for himself promoting what he calls "elastic cities."³⁰ His answer is for municipalities to expand or combine their political boundaries in order to "capture" suburban growth in their tax base. In some cases, state laws must be passed to authorize this, overcoming the reluctance of suburbs to relinquish their privileged status. In those states where such annexation is permissible and has occurred, it might momentarily help address a shrinking tax base, but the urban configuration is unaltered and perhaps bloated. Consider, for example, the case of Columbus, Ohio, which in 1950 had an incorporated area of only 39.9 square miles.³¹ The total number of square miles by 1967 had grown to 114 and in 1996 had almost doubled again to 206.³² One unwelcome consequence, however, is the reduction of farmland, which the city is now realizing.

Stemming Sprawl: Pricing Measures for Transportation

From the foregoing, it is clear that insofar as the causes of sprawl development are economic, the solution needs to be economic as well. The equilibrium of forces can be restored in two ways: 1) by charging the true marginal costs of motor vehicle transportation to users and 2) by recovering the economic rent from urban site owners that is really the socially created value.

It is easy to distinguish five elements of transportation service cost: capital investment, maintenance costs, regulation costs, environmental externalities, and congestion costs. Each of these calls for a different treatment with respect to revenue design. Capital costs are best recovered by recapturing the land rent proximate to the highway corridors. This is socially created value, which is better used to honor debt service of infrastructure investment than allowing it to be retained as windfall gains by titleholders to property close by. User fees, most aptly linked to the purchase of motor fuel and tire wear, serve as a proxy for the use of the roads and can be designed to be commensurate with use. As the wear and tear of roads as well as police patrol, snow and ice control, and signaling all involve operating and maintenance costs, such charges are easily linked with benefits received. In the future, still more accurate systems of service charges are likely to appear: Singapore, Hong Kong, and New Zealand are already reliant on electronic devices that record road use by time, place, and vehicle weight.

Ensuring the safety of drivers and vehicles through licenses, registrations, and inspections is most appropriately financed by fees commensurate with the costs of their administration. This way, if a vehicle is used but seldom, it is charged on the basis of its identification rather than assuming any projected level of use. Environmental externalities such as pollution costs can be linked to the polluting source, such as diesel fuel and gasoline consumption, to the full extent necessary to equilibrate air quality and other environmental ambiances. Congestion costs, the last of the major components of a pricing design for highway use, are partially paid for by the time loss of those caught in traffic. The costs of time lost due to highway congestion are enormous: In 2000, the average driver spent 62 hours sitting in traffic at a nationwide cost of \$68 billion in gas and time lost. In Los Angeles, the average driver spent 136 hours stalled in traffic at an average cost of \$2,510.³³ Commuting times were also 20 percent longer than they were a decade ago, about 22 minutes one way nationally on average but as high as 32 minutes on average in New York.³⁴ But not all people's time is valued equally, and people themselves value their time differently at different times, and it is unfair to require people to impose their congestion on others. Therefore, congestion pricing, being explored in several urban regions, provides a rationing of limited highway space. In a sense, that payment for space usage, in time or money, is a form of land rent.

Stemming Sprawl: Pricing Measures for Land Use

Just as recovering the costs of transportation service equilibrates costs and benefits on one side of the equation, recovering the economic rent accruing to land value facilitates efficient space configurations on the other side. Figure 10.2, again conceptually, portrays how the collection of various transportation user fees as well as the recovery of land rent corrects the economic distortions that today result in sprawl development. The shaded area indicates the pricing correctives necessary to ensure that neither urban nor rural land sites are disadvantaged in travel or location choices that individuals make for either residential or commercial purposes.

As it happens, collecting land rent is a relatively simple operation: It involves a small computer adjustment in the assessment base of what is now the local real property tax. The real property tax to an economist is really two separate taxes: that put on land value and that put on improvement values. A gradual phaseout of the tax on the improvement component, shifting totally to a tax on the land, recovers economic rent in a way that satisfies all the principles of sound tax theory.³⁵ It is efficient, neutral, equitable, administrable, stable, and simple. It is also absolutely foolproof: One cannot hide land or take

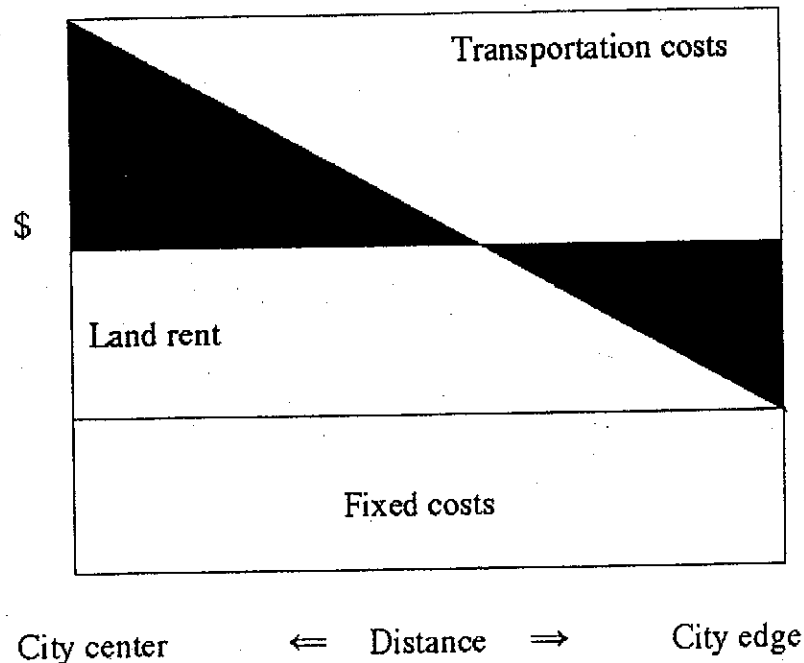


FIGURE 10.2.

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