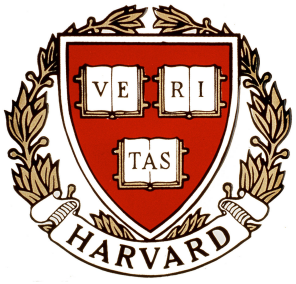

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CONSUMER CITY

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Abstract

Urban economics has traditionally viewed cities as having advantages in production and disadvantages in consumption. We argue that the role of urban density in facilitating consumption is extremely important and understudied. As firms become more mobile, the success of cities hinges more and more on cities' role as centers of consumption. Empirically, we find that high amenity cities have grown faster than low amenity cities. Urban rents have gone up faster than urban wages, suggesting that the demand for living in cities has risen for reasons beyond rising wages. The rise of reverse commuting suggests the same consumer city phenomena.

Keywords: Urban Growth, Consumption, Local Amenities
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Introduction

The future of the city depends on the demand for density. If cities are going to survive and flourish, then people must continue to want to live close to one another. Agglomeration effects—the effects of density—naturally determine the extent to which urban density is attractive. Most urban scholars think of cities as offering positive agglomeration benefits in the productive sphere, and as having negative agglomeration effects (or congestion effects) on non-work consumption. After all, firms and workers earn more in cities. In cities, workers pay higher rents, commute longer, and face more crime.

This basic viewpoint—that cities are good for production and bad for consumption—colors most of urban economics and has influenced most thinking on the future of cities. The critical questions about the future of cities have always been (1) whether cities can maintain their productive edge in the world of information technology and speedy transportation, and (2) whether the service industries that currently drive urban employment will stay in cities or follow manufacturing plants out to the non-city areas.

But we believe that too little attention has been paid to the role of cities as centers of consumption. In the next century, as human beings continue to get richer, quality of life will get increasingly critical in determining the attractiveness of particular areas. After all, choosing a pleasant place to live is among the most natural ways to spend one's money. As Costa (1997) shows, between 1950 and 1990 the share of personal income in the United States spent on transportation and housing rose from 24 percent to 35 percent. This increase can be seen as spending to get a desirable place to live. If these trends persist, then we must think that the future of cities depends on the ability of particular urban areas to provide attractive places for increasingly rich workers, who are less and less fettered by constraints on employment location.

This paper argues that there are four particularly critical urban amenities. First, and most obviously, is the presence of a rich variety of services and consumer goods. The Internet, and before it the revolution in catalog sales in the 1980s, means that manufactured goods really are national goods. However, restaurants, theaters and an attractive mix of social partners are hard to transport and are therefore local goods. Cities with more restaurants

and live performance theaters per capita have grown more quickly over the past 20 years both in the U.S. and in France. In cities with more educated populations, rents have gone up more quickly than wages since 1970—the natural interpretation of this fact is that while productivity has risen in places with more educated workers, quality of life has risen faster.

The second amenity is aesthetics and physical setting. We have little evidence on the role of architectural beauty, but it does seem that more attractive cities have done better since 1980 (e.g. San Francisco). However, weather—measured by January temperature or precipitation—is the single most important determinant of population or housing price growth at the county level. Physical attributes of a community that make life more pleasant appear to be increasingly valued by consumers.

The third critical amenity is good public services. Good schools and less crime are also linked with urban growth. Berry-Cullen and Levitt (1999) show that exogenous increases in crime reduce population growth. Dropout rates among teenagers (controlling for the education level of adults and the poverty rate) are strongly negatively correlated with growth from 1970 to 1990. Schools and low crime also appear to be important in attracting a highly educated workforce. If education then creates further growth (as suggested by Glaeser et al,, 1995), there will be multiplier effects on these amenities.

The fourth vital amenity is speed. In a sense, the range of services (and jobs) available in a metropolitan area is a function of the ease with which individuals can move around. As time becomes more valuable, individuals will particularly avoid areas where transport costs are high. Indeed, the movement to edge cities and the decentralization of employment have increased commuting distances but often decreased commuting times relative to traditional downtowns. But this increasing value of time has also produced a radical shift within traditional cities. Areas close to the central business district (CBD) have succeeded as outer areas (still within the city) have failed. For example, within New York City, areas close to Wall Street have done extremely well since 1980 particularly in terms of income of residents and housing prices. The outer boroughs have continued in their century long decline.

The importance of transport speed pushes us towards two visions of the urban future that are likely to coexist for decades to come. These two alternative future cities are based, ultimately, on transport modes. Essentially, the cities of the future will either be car cities

with decentralized employment or walking/public transport cities with extremely high levels of density. In both of these models, transport times can be low, and different types of cities will succeed in different areas. In the U.S., where public transportation is less subsidized and where gas taxes are low, low density "car cities" will continue to thrive. In cities where car transport is difficult because of older infrastructure, and in Europe where the infrastructure predates cars and where gas taxes are high, high density areas will also succeed. However, not all (or even most) high density centers will do well. Traditional cities will only succeed when they provide amenities that are attractive to high human capital residents. In principle, it may be beneficial for the poorer residents of a community for that community to attract wealthier residents. After all, it cannot help the poor to live in isolated communities filled with poverty.[1]

The implications of this work for local governments, seeking to grow, seem clear. The sovereignty of the consumer is inescapable. Trying to keep manufacturing is probably useless and because of the negative amenities related to manufacturing (see Kahn, 1997) possibly even harmful. The key is to attract high human capital consumers. This means providing strong basic services like safe streets and good schools. As desire for private schools continues to rise, it may be that allowing people who are paying for private schools to opt out of a fraction of public school taxes may be a particularly good means of attracting desirable urban residents. Naturally, policies that ensure an attractive city that is easy to get around will also be beneficial.

The next section discusses the framework that underlies our predictions. Section III evaluates empirical evidence on consumers and cities. Section IV discusses the two visions of the urban future. Section V discusses appropriate government policies at the local and government level. Section VI concludes.

[1] However, it is not necessarily obvious that if cities increasingly work to attract the rich that the poor on net will be better off. In principle, this may call for better social policies on the national level.

I. Discussion: The Shaky Business of Predicting the Future

Our approach to predicting the future of cities is to start with two major trends that we fully expect to continue for the foreseeable future: (1) rising incomes, and (2) improving transport technologies for people, goods and ideas. We then consider what we expect these trends to do to urban form. The projected effects of these trends on urban form are based on theory, cross-sectional evidence and past time series.

Two Trends: Rising Income and Improving Transport Technology

For the past 1200 years, since the reinvigoration of Europe after the early medieval period, the dominant fact of economic history has been rising real incomes. We assume that this will be the dominant fact in the future as well. While there will certainly be recessions (and even depressions) in the future, and income inequality may worsen, we strongly believe that GDP per capita will continue to increase in both the U.S. and Europe.

Rising incomes have both income and price effects. First, of course, rising incomes mean that people will demand more of "normal" goods and particularly they will demand more of luxury goods. Insofar as cities excel in providing these goods, this will increase the demand for cities. Second, rising incomes mean an increase in the price of time. As such, time intensive activities (like long commutes) will become more expensive. People will act in such a way as to eliminate these particularly time intensive activities. In this section we explore the implications of these two effects.

The second major trend has also marked the world for over a millennium: improving technology for transporting goods, people and ideas. The twentieth century has seen a particularly striking change in the ease of transportation (see Kim 1995). There have also been significant increases in the ability to transport people. The car and airplane have both been major changes. The post-war period has seen major improvements in car technology. Mileage, speed and comfort have all improved. The costs of commuting have been reduced through new technology not by faster speeds but rather by better gas mileage and an improved ability to make commuting hours fast and productive. Cars will surely continue to become more pleasant, but it seems unlikely that the disamenity associated with car travel (particularly in urban areas) will ever fall to zero. As such, we do not believe that

improvements in automobile technology will be able to offset the increases in the cost of time created by increases in income.

Finally, there are the striking improvements in the ability to transmit ideas. Faxes, email, the Internet and surely many more new technologies have completely changed the way that information is transferred in society. The portable telephone has improved the ability to communicate generally and particularly the ability to communicate while engaging in travel. While it is unlikely that new information technologies will ever replicate all of the advantages of face-to-face contact, the cost of transmitting ideas over space has certainly fallen. We will assume for the rest of this paper that the trend of better transportation through technology will continue into the future.

The Demand for Cities

Economists define cities as the spatial concentration of economic actors. This definition has been more extensively discussed elsewhere (Glaeser, 1998), but the primary implication is that the demand for cities must come ultimately from the desire to reduce transport costs for goods, people and ideas. We wish to draw a sharp distinction between the effects of cities on productivity (referred to as urban productivity) and the effects of cities on quality of life (referred to as the urban amenity). In general, the urban productivity premium can be directly measured with wages (see Glaeser and Mare, 2000).

As economists, we think in terms of a spatial equilibrium where individuals – at least on the margin -- are indifferent across locations. Because urban wages are much higher than wages in non-urban areas (the metropolitan area wage premium in the US was 28.9 percent in 1990 when other observable attributes were held constant), we think of higher urban rents and possibly negative urban amenities as offsetting this premium. The concept of a spatial equilibrium suggests the following equation:

(1) Urban Productivity Premium + Urban Amenity Premium = Urban Rent Premium

This equation says that the effect of cities on wages plus the effect of cities on quality of life must be offset by the effect of cities on housing rents. Naturally, the situation is

somewhat more complicated because of heterogeneity both among housing units and among workers. For our purposes this equation suggests that the urban amenity premium can be measured by looking at the difference between the urban wage premium and the urban rent premium. Changes in urban non-workplace effects can be mapped by looking at how this difference changes over time and over space.

We think of the urban productivity premium as coming from two distinct forces. First, firms are more productive in cities because of lower transportation costs in delivering goods or services. The transportation cost advantage for goods has basically vanished and goods producers have by and large left the cities. The transportation cost advantage for services is still very real and higher wages in service industries in cities are easy to understand. These firms are more productive because they have a greater array of consumers and can take advantage of economics of scale and scope.

Second, firms will also be more productive in cities because they have access to better ideas and technology. This springs from the urban advantage in transporting ideas, and Jane Jacobs (1968) is the great proponent of this role of cities. These ideas range from changes in means of production or product types to the most up-to-the-minute news. In Silicon Valley, for example, the key information relates to technological change. This information often is transported by workers as they change firms and in social settings like after-work happy hours. (Saxenian 1994)

When idea transfers involve the latest new information, the benefits to extremely high density become much larger. For example, success on Wall Street often involves knowing new events minutes (seconds?) before anyone else. In this environment, the informational advantages of extreme spatial proximity become very high. The possibility of seeing someone with knowledge while grabbing a coffee may lead to large financial returns. This difference between the need for lower frequency technological updates and high frequency news may explain why Silicon Valley works well at low density and Wall Street remains in a tiny physical area in the tip of Manhattan. In both cases, however, the spatial concentration of economic actors increases productivity at the firm level by increasing the flow of new ideas.

Urban density can also create a worker productivity premium even if technology isn't changing. Alfred Marshall introduced the idea that the large number of employers within an urban area will enable workers to change jobs more easily. This provides an advantage to workers if their firm receives a negative productivity shock—workers in Chicago, Illinois can always go to another firm in that city, but workers in Hershey, Pennsylvania may lack that luxury. This also provides an advantage for younger workers trying to find the right career for themselves. In a large urban area, they can hop jobs and careers at much less cost than in a low density environment. Importantly, the advantages of a dense labor market accrue to individuals living in large metropolitan areas but they do not require high density centers of production. Furthermore, these ideas don't imply that firms in cities will pay more, but they do imply that workers in cities are more likely to be better matched with their employers.

The second idea of Marshall's is that in dense urban areas "the mysteries of the trade become no mystery, but are, as it were, in the air." In dense environments there is a faster flow of ideas across workers. This occurs through contact, conversation and imitation. Insofar as workers learn how to better perform their jobs through observation, the existence of learning-by-seeing will favor the densest of workplace environments. This view of workers suggests that wages are higher in cities not because of individual firms are more productive but rather because workers in cities have acquired more (probably unobservable) skills.

Consumption in Cities

These functions of cities all focus on the production side. However, cities can also be desirable because of consumption amenities. Even at the same wage, some consumers may actually prefer denser cities. The lower transport costs in cities that make firms more productive may also make life outside of work more enjoyable.

For example, the low transport costs created by urban density may facilitate enjoyable social contact. The wide range of people living within a small geographic area means that big cities offer access to desirable interpersonal relationships. Glaeser and Sacerdote (1999) document that individuals who live in denser buildings and big cities are more likely to socialize with their neighbors. Of course, big cities can also create less desirable social

contacts. Parents may wish to isolate their children from some peers, which will be harder in a city. Low transport costs between people also helps to explain higher levels of crime in urban areas (Glaeser and Sacerdote, 1999).

One area where this appears to be particularly important is the location decisions of young single people, who live disproportionately in the densest urban areas. A natural explanation of this phenomenon is the crowding makes meeting other single people easier and facilitates the operation of the marriage market (see Costa and Kahn, 2000, for more discussion). Alternatively, married people may live disproportionately in suburbs so that they can consume more land.

Lower transport costs for people in large urban areas may also create benefits for households in the consumption of non-manufactured goods. Above, we argued that service industries will benefit from the agglomeration of people in cities and the reduced transport costs that this agglomeration creates. Of course, the incidence of reducing transports will surely affect both producers and consumers. Some of the benefits of reduced transport costs will go to the producers, but the consumers will also benefit. This benefit can be seen in the range and proximity of services available in large cities.

Large urban markets may also increase the welfare of consumers because of goods which appear to have substantial scale economies. For example, baseball teams, opera companies, and comprehensive art museums all need large audiences to be successful. For consumers who want to be able to go to the Opera regularly or go to live major league baseball games, living in large cities is a necessity. The advantages from scale economies and specialization are also clear in the restaurant business where large cities will have restaurants that specialize in a wide range of *cuisines* – scale economies mean that specialized retail can only be supported in places large enough to have a critical mass of customers.

The consumption value of some cities may be a product of their possession of a valuable stock of buildings that are considered to be aesthetically pleasant. Paris' attraction as a consumer city comes in part from the advantages of its service sector (restaurants) and its products which rely on scale economies to function (the *Louvre*), but also from its large stock of buildings which are considered by many (including the authors) to be beautiful. Several American cities also have an aesthetic edge which makes them desirable to

consumers. An aesthetic edge can clearly come from a good stock of buildings, but more generally some people may actually prefer city living itself for aesthetic reasons (of course, many people dislike city living on aesthetic grounds as well).

The Future of Cities

The future of cities depends on the interaction between the two trends discussed above and the functions of cities. When the trends mean that the advantages of cities will become more important, then cities will grow. When increasing incomes and reduced transport costs eliminate the advantages of cities, then cities will shrink.

In the productive sector, it is clear that the advantages the cities once had from reducing transport costs for manufactured goods are no longer important. But the urban advantage in saving transport costs for people and ideas still matters. Indeed, the cost of moving people will probably continue to rise, as argued above, because increases in the cost of time will probably go up more quickly than improvements in people-moving transport technologies. However, it is not obvious that these person-transporting advantages of cities need the denser, older cities to function well. Indeed, a large edge city appears to provide its residents with a large labor market where they can change employers easily without changing residences. For exchanging ideas, it is again unclear whether high-density Wall Streets are essential or whether Silicon Valley-style edge cities can facilitate information flows for tomorrow's dominant industries.

We are also convinced that rising incomes mean that people increasingly desire attractive places to live. It is surely misleading to talk about cities as a class, as there will be substantial heterogeneity among them. Attractive cities will thrive; unpleasant cities will decay. The stylized facts section of this paper offers evidence that consumers are becoming more important to the success of cities.

II. ***Stylized Facts***

a. The Rise of Reverse Commuting

Perhaps the most obvious fact pointing to the importance of consumer cities is the rise of reverse commuting. Reverse commuters live in central cities and work in the suburbs. Since they are generally paying higher rents to live further from their place of work, the most natural explanation is the demand for the consumption value of central cities. In some cases, reverse commutes may be the result of two-career households (where one member works in the central cities) or path dependence (i.e. the individual originally worked in the central city, but then changed job locations). Still, we believe that these situations are only a small part of the general reverse commuting phenomenon.

[Insert Table 1 here]

Table 1 shows the rise of reverse commutes in the U.S. since 1960. Overall, daily commutes increased by 2.62 percent per year between 1960 and 1980 and by 2.79 percent per year between 1980 and 1990. The rise in city to non-city commutes, though, has been far more dramatic. City-suburb commutes have almost tripled between 1960 and 1990. Commutes from cities to other (non-city, non-suburb) areas have risen by 4.7 percent per year between 1980 and 1990. Of course, suburb-suburb and suburb-other commutes have also risen quickly, reflecting the rise of edge cities. There has been a relative decline in the prevalance of city-city and suburb-city commutes.

These changes reflect the relative rise in suburban employment, but they also reflect the rise of consumer cities. In 1960, only 12.1 percent of urban commuters left the city. In 1990, 24.3 percent of urban commuters leave the city. The fraction of urban workers who live in the city, despite working elsewhere, has doubled since 1960 and that group now includes one in four urban residents.

[Insert Table 2 here]

Table 2 specifically looks at reverse commuting in the San Francisco Bay area. This table shows the relative rise of population (of employed workers) in the area relative to the rise of employment in the area. San Francisco county (central city San Francisco) is one of only three counties where population rises faster than employment. This rise reflects the increase in San Francisco residents who work outside of the city and presumably live in the city for consumption reasons. Again, a pattern emerges where central city populations are increasingly made up of people who produce outside the city and consume in the city.

b. *The Success of High Amenity Cities*

Population has grown fastest in high-amenity areas. The key point is that consumer sovereignty is pushing the population towards areas with attributes that consumers value. Our interpretation is that the constraints on business location have decreased substantially and that the cities of the future must cater to consumers.

[insert Table 3 here]

Table 3 shows the results from a multivariate regression of county population growth 1977-1995 on a vector of county-level characteristics in the U.S. All data sources are described in the Data Appendix. The dominant factors in county and city population growth since World War II have been natural features. This regression shows the extreme power of: (1) temperate climate (inverse of average deviation from 70 degrees), (2) dryness (inverse of average precipitation) and (3) proximity to the coast. All three of these variables are strong predictors of local growth. They are normalized so that a coefficient of .35 indicates that a one standard deviation increase in the temperate climate variable drives growth up by .35 standard deviations. These effects are much stronger than standard regional effects.

The second set of effects that we show in this regression illustrates the role of consumer goods. We use the presence of five different consumer amenity variables in 1977 as proxies for different forms of consumer amenities. We find that the presence of live performance venues and restaurants both significantly predict later growth at the county level. We find

no connection between art museums and county growth. Interestingly, amenities appealing to low human capital workers—bowling alleys and movie theaters—are both negatively associated with later county population growth.

Thus not all consumer goods matter. The more basic consumer goods have non-spatial substitutes. Video machines and television reduce the need to go to a movie theater. Perhaps video games or health clubs have substituted for bowling. The important consumer amenities are more difficult to duplicate and cater to higher human capital workers.

A final significant relationship is between initial human capital and later county growth. The human capital—city growth connection is among the strongest in the local growth literature (see Glaeser et al., 1995). One interpretation of this fact is that high human capital workers increase city productivity growth. An alternative, equally plausible interpretation is that high human capital areas are pleasant to live in. Higher human capital areas are relatively free of social problems and offer better schools.

Indeed, the literature on the importance of schools and crime appears to be quite strong. As mentioned earlier, Berry-Cullen and Levitt (1999) show a strong negative relationship between crime and city growth. Rappaport (1999) looks at the effects of government spending. He finds that spending on schools predicts city growth and the spending on redistribution deters growth. Again, it appears that catering to high human capital consumers is particularly critical.

Amenities attract population in Europe, too. For France, we look at restaurants per capita and hotel rooms per capita. We do not think of hotel rooms as an amenity, but rather a proxy for tourist demand for the city. Cities with more hotel rooms are presumably more attractive to visitors and potential residents as well. There is a strong positive relationship between both of these variables and city population growth in France. Indeed, the restaurant-growth connection is as important in France (quantitatively, if not statistically) as the climate-growth connection in the U.S. In England there is also a connection between tourist demand for the city and city growth.

[insert Table 4 here]

Our last exercise on the amenity growth connection is to use housing prices to form an "amenity index." We regress housing prices (a rough measure of the present value of housing rents) on per capita income and think of the residual as reflecting demand for local amenities. This "amenity index" appears to resolve well with our views about high and low amenity areas within the U.S (see Table 4). The high amenity cities are all in California, except for Honolulu, which is the highest amenity city in this index. The low amenity cities generally seem to correspond well with areas that are thought to be low amenity (Anchorage, Alaska, Trenton, New Jersey).

[Insert Figure 1 here]

Figure 1 shows the relationship between this amenity value in 1980 and population growth between 1980 and 1990. The connection is quite strong. A one standard deviation increase in the amenity value increases local population growth by 0.34 of a standard deviation. One particular worry is that housing prices in 1980 are reflecting future housing rents growth and that the causality is therefore reversed. However, this relationship is much stronger than the connection between the amenity value measure and future housing rents growth. Thus, even if we form the amenity value controlling for future housing rent growth, there would still be a strong positive relationship between the amenity value and future population growth.

[Insert Table 5 here]

c. Is demand for the urban amenity rising?

We now turn with time patterns in urban wages and urban rents. Our interest is in whether cities are increasingly being thought of as high amenity locales. We first look at the correlation between the amenity index and urban size and how this has changed over time (Table 5). In 1980, the correlation between the index and MSA population size in 1980 is 0.22. In 1990, the correlation has risen to 0.36. It appears that big cities are increasingly

associated with higher values of this index, which may mean that they are increasingly valued as high amenity locales.

As argued above, the gap between rents and wages tells us something about the way that urban amenities are moving. We will interpret the extent to which urban rents are rising faster than urban wages suggests as suggesting increased demand for cities that is not being caused by increases in urban productivity.

[Insert Table 6 here]

Table 6 shows the relationship between the logarithms of metropolitan area size and both wages and housing prices in the U.S. In 1980 in the U.S. the elasticity of wages with respect to metropolitan area size was 0.051. As metropolitan area size doubles, wages rise by 5.1 percent. By 1990, the elasticity had risen to 8.2 percent. This fact immediately casts doubt on the notion that the importance of location for productivity is declining. If anything, the urban productivity edge appears to be rising.

The second column of this table shows the same elasticity for housing prices. In 1980, the elasticity of housing prices with respect to metropolitan population was 0.114. While this elasticity is already large, the elasticity had almost doubled by 1990 to 0.225. It appears that the demand for cities is rising quicker than the urban wage premium. This could alternatively be compatible with a constant urban amenity premium if other urban prices had remained constant over time, but since the correlation between housing prices and the Chamber of Commerce's local cost-of-living index is 0.79, we consider housing prices to be a good proxy for overall local prices. We conclude that the demand for urban amenities is rising.

[insert Table 7 here]

The data for England is less clear. Over the 1990s, the wage elasticity with respect to metropolitan area size rose from 0.047 to 0.072 while the rent elasticity fell. This is driven by cities outside of London, which have gotten relatively cheaper over the 1990s. In

London itself, as shown in Table 7, growth in housing rents has outpaced growth in wages over this period. This fast housing rent growth is true both in absolute terms and also relative to England outside of London. Our view of England is therefore that London itself seems to have gotten more attractive as a consumer city, but other urban areas are not succeeding as well.

Table 7 also shows rent growth in Paris and the rest of France. In Paris, housing rents are rising faster than wages. In the rest of France, the opposite is true. This probably reflects increased demand for the amenities of the capital.

[insert Table 8 here]

Table 8 shows income and home value growth for a set of U.S. cities in the 1990s. This data illustrates the remarkable disparity across American cities. For some cities, like San Francisco and Boston home value growth is moving faster than wages. Since 1998, this trend appears to have accelerated in these cities. In Chicago and New York City, income growth and home value growth kept pace with each other over this period. Again, preliminary evidence since 1998 suggests that in both cities home value growth has particularly shot up. Of course, the remarkable rise in home prices is also related to the remarkable rise in national wealth associated with the stock market.

On the other hand, Los Angeles and Washington D.C. have seen home value growth that lies far below income growth. This is surely best interpreted as declining demand for the amenities in those cities. In the case of Washington, D.C., home values lie far below new construction costs in most areas but have been rising rapidly in the past year. This increase has reflected renewed faith in city government as the legacies of Marion Barry's administrations fade – a nice example of public goods being amenities on the consumption side.

The findings in this section are suggestive of rising demand for the amenities of those large cities. However, there is great disparity across metropolitan areas and, particularly in England, demand for urban amenities in some cities appear to be dropping.

[insert Table 9 here]

d. The Increasing Wealth of the Inner City

A final piece of evidence on demand for the urban amenity is the patterns of income and population changes within inner cities. We are looking at the relationship between population, income and the central business district (CBD) of the city. For this work, we use the definition of central business district given by the U.S. census.[2] The CBD is clearly the business center of the city and in some cases differs from the consumption center of the city. For example, in New York the business center is Wall Street. The consumption center is probably 57th Street and Fifth Avenue. In Chicago, the business center is the Loop. The consumption center is probably Water Tower Place. The rise of separate work and consumption is yet further evidence of the rising focus of cities on providing consumption.

Table 9 shows the movement of populations within cities. Panel A shows results for all American cities. Panel B shows results for the 10 largest MSAs. In all cities, population is generally moving away from the city central business district. In the largest cities, there is actually an increase within 1 mile of the city center. Within 1 to 3 miles, there is a small decline. Overall, our view is that there is not much from population flows that would suggest anything about changing demand for central cities.

[insert Table 10 here]

However, the results from income changes look quite different. Table 10 shows results for income changes. For both the entire city sample and for the 10 largest MSA sample, incomes have risen (relative to the MSA as a whole) close to the city center. In the largest MSAs the change is striking. Within one mile of the CBD, incomes rose 19 percent relative to the MSA average over a 10-year period. Between one and three miles of the CBD, incomes rise 9 percent over that period. This middle area is the area of substantial gentrification. Preliminary evidence on the 1990s suggests that this pattern has, if anything,

[2] This definition comes from a 1982 survey of local leaders.

sped up. Areas that offer proximity to the CBD have become increasingly valued to consumers who have a high opportunity cost of time.

[insert Figures 2, 3 and 4 here]

Figures 2-4 show this pattern in Manhattan. Figure 2 shows the basic income pattern within Manhattan. The rich generally live closer to the city center and the poor live on the fringes. Of course, this pattern is usual only to the larger MSAs where income first falls and then rises with distance from the CBD (see Glaeser, Kahn and Rappaport, 1999). Figure 3 shows the pattern of income growth in Manhattan from 1970 to 1990. The areas that are close to the CBD have gotten much richer. The areas further away have gotten poorer. In Figure 4, we show the housing rent patterns roughly follow the pattern of income growth. Areas that are close to the CBD have gotten more valuable.

e. The Importance of Gas Taxes

Our last empirical fact concerns the relationship between urban density and the price of gasoline. We have suggested above that the relative demand for traditional cities and edge cities depends critically on the use of automobiles. It seems likely that individual will stay in traditional cities if gas taxes make cars prohibitively expensive. To test this hypothesis, we have assembled a small data set of cities in developed countries (our cutoff was gross national product above $1,000) where we could get data on urban density, gas prices and car usage.[3]

[Insert Table 11 here]

Our dependent variable is the logarithm of people per hectare in the capital city. While this is admittedly an imperfect measure of the degree to which individuals are crowded in the country as a whole, it represents one measure of the extent to which edge cities exist. Table

[3] Our selection rule involved choosing only countries with gross national product per capita above $1,000. The relationships don't hold up well among extremely poor countries.

11 shows the results from two multivariate regression. In the first regression, we control for the logarithm of gross national product per capita (averaged over the 1970 to 1995 period) and for the share of the population that uses cars to get to work. There is a significant relationship between car usage and density. A 10 percent increase in the share of the population that uses cars to get to work is connected with a .108 log point decrease in density. Obviously, car usage is an endogenous variable so interpretation of this result is difficult. The correlation might exist because people use more cars in low density areas.

A more exogenous (but hardly perfect) variable is the price of gasoline in these countries. In the second regression, we regress the logarithm of density on the logarithm of the price of premium gasoline in the country in 1990. The elasticity is 1.10, suggesting that as gas prices double, density also doubles.[4] This exercise involved only 14 countries and needs much further investigation, but it points to the potential importance of transportation policies in determining the future of cities in the U.S. and Europe. Low density American living is only possible with mass use of the car. Clearly public policies like gasoline taxes affect the translation of the demand for urban amenities into residential decision and the demand for density.

III. Three Classes of Cities

American urban areas in the year 2000 can be divided into three classes. First, there are the resurgent dense cities discussed above. These include New York, San Francisco, Boston and several others. In the Midwest, Chicago and Pittsburgh are cities that may belong in these categories. These are cities with relatively successful industries that have done well in the information economy. They are all relatively high human capital. They have interesting architectural endowments. They provide a rich set of consumption activities. While populations have not grown sharply in these cities, constant populations mask significant transformations that bode well for their futures. In many of these cities, the existing density of housing and local regulations governing construction mean that the rising demand for density results more in increasing average income (gentrification) than in population growth.

Accompanying gentrification has been an exodus of low human capital manufacturing workers and an increase in high-skill workers (see Kolko, 2000).

Many of the European cities look like these American cities. For example, London and Paris are also examples of high human capital cities that offer stunning consumption advantages to their residents. Indeed, all of the major European cities have architectural legacies that seem to buffer the cities against any temporary downturns in productivity.

Second, there are older dense cities with little chance for real growth. These cities are generally marked by property values that are far below the costs of new construction. They include Detroit, Philadelphia, and St. Louis. Indeed, the low real estate prices in these cities suggest that these cities are being kept alive by long-lived housing stocks that are slowly depreciating. These cities have industries that have done poorly and generally have lower levels of human capital. There are European cities that also fall into this group. The most striking examples are cities in the north of England that grew during the industrial revolution (e.g. Manchester). These cities were never political capitals so they didn't acquire the physical beauty that supports Vienna or Edinburgh. They have lower levels of human capital and few consumption advantages.

The third class of cities is the edge cities, among which we would include lower density, car cities from Los Angeles to Tyson's Corner. These are clearly thriving and in the absence of major government intervention they seem very likely to continue to grow. Car transport just seems to be very effective and desired by most Americans. Commuting costs can be cut by decentralization of employment. It seems likely that these areas will continue to thrive in the U.S. The prevalence of these edge cities is the most striking difference between the U.S. and Europe. European gas taxes and subsidization of public transport have meant that edge cities are much less attractive. Indeed, there is not a single European city that looks like Los Angeles. The difference is not the availability of land, of which most European countries have in abundance, but the policies towards transportation.

Elsewhere in the world, edge cities are more prevalent. The cities of Australia and New Zealand are displaying classic urban sprawl. Latin American cities are not yet full car cities

[4] This fact is not statistically robust to excluding the United States from the regression. The fact on car usage is robust to excluding the U.S.

because low incomes put cars out of reach for much of the population, but we cannot help thinking that edge cities will be more prevalent there as well. Asia is marked by so much heterogeneity, that it is particularly hard to create any general predictions.

IV. Policy Discussion

There are two types of policy advice that one can give regarding urban areas. First, there is policy advice that can be given to local officials that are trying to boost their own cities. Second, there is policy advice for national leaders who should not be trying to favor particular cities. Instead, national leaders should presumably be trying to push for Pareto optimality for the country as a whole.

Our advice for local leaders is to pay attention to creating consumer cities. This means that the quality of life is paramount. Safe and clean streets are critical. Good public amenities are a primary function of local governments. In particular, policies that attract high human capital workers are particularly important. In the U.S., this particularly means good public schools. Indeed, crime prevention and public amenities have marked the administrations of recent successful mayors such as Rudolph Giuliani in New York and Richard M. Daley in Chicago.

On the other hand, local mayors should carefully consider the effects of local redistribution. Many local policies – like rent control or high wages for unionized transit workers – are both inequitable and guaranteed to reduce urban amenities that might otherwise attract new residents. At the same time, redistributive policies may attract lower income groups that contribute to urban amenities. Cultural movements often arise from oppressed groups (see Hall, 1998). Diversity in itself is often an urban amenity, since urban consumers are attracted to cities with ethnic restaurants, international cultural offering, and a lively street scene.

National policy should ultimately be guided by policies of spatial neutrality. While there surely are spatial externalities that might justify favoring particular regions, we cannot measure these well enough to really guide policy. Furthermore, when governments get in

the business of favoring particular regions this almost always does more harm than good.[5] Spatially based favoritism raises property values in the favored areas, which may hurt renters in those areas more than it helps them. Furthermore, spatial favoritism will limit the out-migration that is often the best response to local trouble. In the U.S., we class Enterprise and Empowerment Zones as unfortunate spatial policies. In Europe, the set of regional policies are much larger and include policies such as the massive subsidies for the Italian Mezzogiorno.

We have argued that national transportation policies are particularly important in driving urban form and good advice in this area is more complicated. Indeed, it is not possible for us to propose an ideal level for gasoline taxes. The case for gas taxes is based on many factors including the role of these taxes as (1) possible relatively efficient sources of revenue, (2) a form of pricing for roads, (3) taxes on congestion and pollution externalities. Nevertheless, the downside of these taxes appears to be the elimination of edge cities. It is unclear whether the edge cities of America or the dense cities of Europe reflect an inefficient distortion. In any case, this issue should be at the top of any discussion of the future of cities worldwide.

V. Conclusion

This paper has argued that the future of cities increasingly depends on whether cities are attractive places for consumers to live. Changes in the costs of transporting goods and idea may eliminate some of the productive advantages, at least outside of highly information intensive industries. If cities are to remain strong, they must attract workers on the basis of quality of life as well as on the basis of higher wages. It seems clear that some cities are managing to be successful consumer haven, but that many will not. This suggests an ever-widening disparity across urban areas.

[5] Ades and Glaeser (1995) address the distortionary impact of spatial favoritism on city size.

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Data Appendix

United States Data

Data on local amenities were obtained from the Census Bureau "County Business Patterns 1977". Data on population and income were obtained from the 1970, 1980 and 1990 edition of the "*US Census*". Metropolitan Area income was obtained from the Bureau of Labor Statistics "*Metropolitan Standard Area Income Longitudinal Series*". Housing prices for some cities was presented using Freddie Mac's "*Repeated Sales Index*". Data on income and distance to the CBD were obtained from the *"Urban Institute Underclass Database*". Data on the geographic characteristics of US MSAs were kindly provided by Jordan Rappaport.

European Data

Our Metropolitan Area unit for France is the *Zone d'Emploi* as defined by the *Institut National de la Statistique et des Estudes Economiques (INSEE)*. The *Zone d'emploi* corresponds basically to an urban agglomeration and the surrounding area for which working commutes are frequent. We selected the *Zones d'Emploi* for which the central urban agglomeration's population in 1990 exceeded 50,000 inhabitants.

Data for the number of restaurants and hotel rooms for the *Zones d'emploi* in France are for 1996, and were obtained from: "*Atlas des zones d'emploi. CD-ROM*", *INSEE*. Population, labor force participation and unemployment for France in 1975 and 1990 at the *Zone d'Emploi* level were obtained from the volumes of the "*Recensement de Population et Loisirs 1990*" from the INSEE. Wages are assigned to the "Zone d'Emploi" by matching data from the French "agglomérations de plus de 50,000 habitants", obtained from "*Les salaires dans l'industrie, le commerce et les services, Edition 1996*", from the *INSEE Resultats* series. Data on the evolution of rents are gathered from the "*Rapport sur l'evolution des loyers. Juin 1999*", from the

Ministère de l'Equipement, des Transports et du Logement, Secrétariat d'État au Longement. This source offers the evolution of the average rent for Paris and the following group of cities ("*Province*") that we report as "rest of France": Aix en Provence, Bordeaux, Brest, Grenoble, Lille, Lyon, Nancy, Strasbourg, Toulouse, Bessançon and Rennes.

Average weekly earnings and average weekly unrebated rent per dwelling data for the UK are from several issues of "*Regional Trends*", by the *Office for National Statistics*. Our basic unit of measure is a "county proxy". We select the counties with local authorities of urban nature and with population over 90,000 (as defined in *"Regional Trends 1987*"). Because of the local government changes recent data is presented at a "local authority" level that differs from previous releases. We add the 1998 Unitary Authority and other local government populations to form an "artificial" county unit. The resulting "county proxies" keep as close to the older county boundaries as possible. We weight wages and rents data according to the local unit population to form "county proxy" estimates. The 1998 local authority data includes population change from 1991-97. We use the same weighting scheme to obtain "county proxy" population growth rates. Previous growth rates of the older counties are used to induce past population estimates for our "county proxy" units. 1988 wage and rent data are averages for the old county units. The number of tourist night stays is obtained from "*Key Facts of Tourism in UK*" from the UK Tourism Office, and are available online at www.staruk.org.uk.

Other Data Sources

Gasoline price data are obtained from the "*International Energy Annual 1989*", issued by the *Energy Information Administration.* City population density and car use data obtained from the "*Global Urban Indicators Database*" provided by the *Global Urban Observatory* at www.urbanobservatory.org.

TABLE 1

Commuting patterns - US Metropolitan Areas

	Daily Commutes (millions)			Annualized growth rate	
	1960	**1980**	**1990**	**80-60**	**90-80**
City-city	**18.8**	**20.9**	**24.3**	**0.52%**	**1.52%**
City-suburb	**2.0**	**4.2**	**5.9**	**3.65%**	**3.46%**
City-other	**0.6**	**1.2**	**1.9**	**3.63%**	**4.70%**
Suburb-city	**6.6**	**12.7**	**15.2**	**3.34%**	**1.81%**
Suburb-suburb	11.3	**25.3**	**35.4**	**4.09%**	**3.42%**
Suburb-other	1.1	**3.7**	**6.8**	**6.22%**	**6.27%**
Total	**40.5**	**68.0**	**89.5**	**2.62%**	**2.79%**

Source : Commuting in America. ENO Transportation Foundation

TABLE 2

Reverse commuting in the San Francisco Bay Area Counties

	% change of employment in county (1)	% change of employees living in county (2)	(2)-(1)
San Francisco	9.2%	14.5%	5.3%
San Mateo	22.0%	14.0%	-7.9%
Santa Clara	25.1%	22.1%	-3.0%
Alameda	21.5%	24.7%	3.1%
Contra Costa	47.1%	33.7%	-13.5%
Solano	35.5%	57.0%	21.5%
Napa	33.6%	24.9%	-8.7%
Sonoma	51.0%	51.0%	***0.0%***
Marin	24.7%	8.7%	-16.0%

Source : Census Tabulations from the Metropolitan Transportation Comission, San Francisco Bay Area

TABLE 3

Population growth and amenities

	Population Growth	
UNITED STATES (77-95)	**Estimate**	**t-value**
Temperate climate	0.35	17.8
Proximity to ocean coast	0.24	12.5
Live performance venues per capita	0.14	6
Dry climate	0.12	6.5
Restaurants per capita	0.05	2.9
Art museums per capita	-0.03	-1.5
Movie theaters per capita	-0.05	-2.6
Bowling alleys per capita	-0.19	-11.3
FRANCE (1975-1990)		
Restaurants per capita	0.45	5
Hotel rooms per capita	0.33	4
ENGLAND (1981-1997)		
Tourist nights per capita	0.31	2.7

Notes : Each coeffkient is the result of a separate regression of population growth on each amenity and other controls. The values of the variables were transformed to have standard error=1.The temperate climate variable is the inverse of (average temperature per year-70 degrees). All temperatures are measured in Farenheit degrees. Dry climate stands for the inverse of average precipitation. US regressions included controls for county density, share of college educated, and a shift-share industry growth measure. France observation units are the "Zones d'Emploi". France regressions included controls for participation rate and population in 1975. The England regression is for counties, as defined in the Data Appendix. The England regression included a dummy for Northern counties and initial population as controls.

TABLE 4

Ranking of Top and Bottom US MSA's, according to Estimated Amenity Value

Metropolitan Statistical Area (MSA)	
Highest	**Lowest**
Honolulu, HI	Stamford, CT
Santa Cruz, CA	Norwalk, CT
Santa Barbara-Santa Maria-Lompoc, CA	Anchorage, AK
Salinas-Seaside-Monterey, CA	Rochester, MN
Los Angeles-Long Beach, CA	Detroit, MI
San Francisco, CA	Midland, TX
San Jose, CA	Trenton, NJ
Santa Rosa-Petaluma, CA	Minneapolis-St.Paul, MN
Oxnard-Ventura, CA	Nassau-Suffolk, NY
San Diego, CA	Bloomington-Normal, IL

Notes : Estimated Amenity Value measured as residual from an OLS regression of log median house value on log median income in 1990.

TABLE 5

Correlation between estimated amenity value and population

		Amenity-Population correlation
US	1980	0.22
	1990	0.36

of median house value on median income for the US. at the MSA level.

TABLE 6

Elasticities with respect to population size

		wages	housing prices
u s	**1980**	0.05 1	0.114
	1990	0.082	0.225
		wages	**housing rents**
England	**1988**	0.047	0.036
	1998	0.072	0.021

Notes: Population at the MSA level for US, county level for England. See Data Appendix for data description.

TABLE 7
Wage and rent growth in Paris and London

	Wage growth	Rent growth
ENGLAND (1988- 1998)		
London	**4.90%**	**8.60%**
Rest of England	**4.70%**	**7.50%**
Difference-in-difference (London amenity premium)		**0.90%**
FRANCE (1990-1995)		
Paris	**3.60%**	**4.20%**
rest of France	**4.00%**	**3.50%**
difference-in-difference (Paris amenity premium)		*1.10%*

Notes : Annualized growth rates. See Data Appendix for data sources

TABLE 8

Income and housing value growth in selected American cities

	1993-1998		
	Income growth	**Home value growth**	**Difference**
San Francisco	2.46%	4.51%	2.05%
Boston	3.11%	4.65%	1.54%
Chicago	3.64%	3.76%	0.12%
New York City	***2.69%***	2.57%	-0.12%
Los Angeles	1.82%	1.21%	-0.61%
Washington, DC	3.83%	1.12%	-2.71%

Notes: Annual growth rates over the 1993-1998 period

TABLE 9
Population distribution within the city

Panel A: All MSAs

Share of City Population Living:	*1980*	*1990*
Within one mile of CBD	10.70%	10.30%
One to three miles of CBD	*35.50%*	*34.00%*
Three to five miles of CBD	21.90%	21.80%
Beyond five miles of CBD	31.90%	33.90%

Panel B: 10 biggest MSAs

Share of City Population Living:	*1980*	*1990*
Within one mile of CBD	*4.80%*	*4.90%*
One to three miles of CBD	17.00%	16.50%
Three to five miles of CBD	19.00%	*18.40%*
Beyond five miles of CBD	**59.20%**	*60.20%*

Notes : See data Appendix for data sources.

TABLE 10
Income distribution within the city

Panel A: All MSAs

Income Relative to City Average	***1980***	***1990***
Within one mile of CBD	**89%**	**94%**
One to three miles of CBD	**95%**	**95%**
Three to five miles of CBD	101%	100%
Beyond five miles of CBD	109%	107%

Panel B: 10 biggest MSAs

Income Relative to City Average	***1980***	***1990***
Within one mile of CBD	144%	163%
One to three miles of CBD	**88%**	**97%**
Three to five miles of CBD	**86%**	**86%**
Beyond five miles of CBD	105%	100%

Notes : See data Appendix for data sources.

TABLE 11

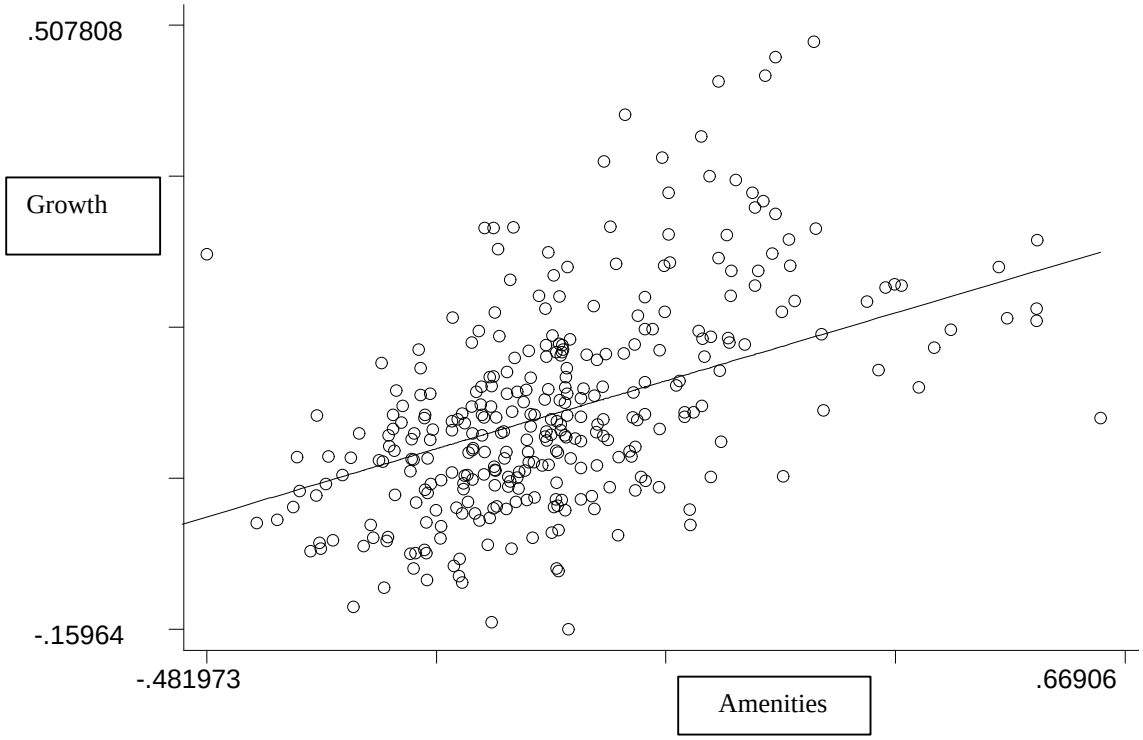
Demand for space, car use, and gasoline prices

Dependent variable:Log(City population density)	1	2
Percent of work trips made by car	-0.0108	
	(0.0050)	
Log(Price of gasoline)		1.0991
		(0.3 145)
Log(Average GNP per capita 1970-l 995)	-0.0578	-0.4702
	(0.1146)	(0.1578)
Intercept	5.5637	7.7542
	(0.8417)	(1.2652)
R-squared	0.2036	0.3539
N	46	35

Notes : Observations are major cities in a sample of countries with average GNP per capita 1970-1995 greater than $1000. Standard errors are corrected for intracountry correlation. Price of gasoline is price in January 1990 measured in 1990 US$/gallon. Average annual GNP per capita 1970-1995 measured in US$. City population density measured in persons/hectare. Data sources described in Data Appendix.

Figure 1

Growth and Amenities in the US



F i g u r e 2

Manhattan: median income by tract 1990

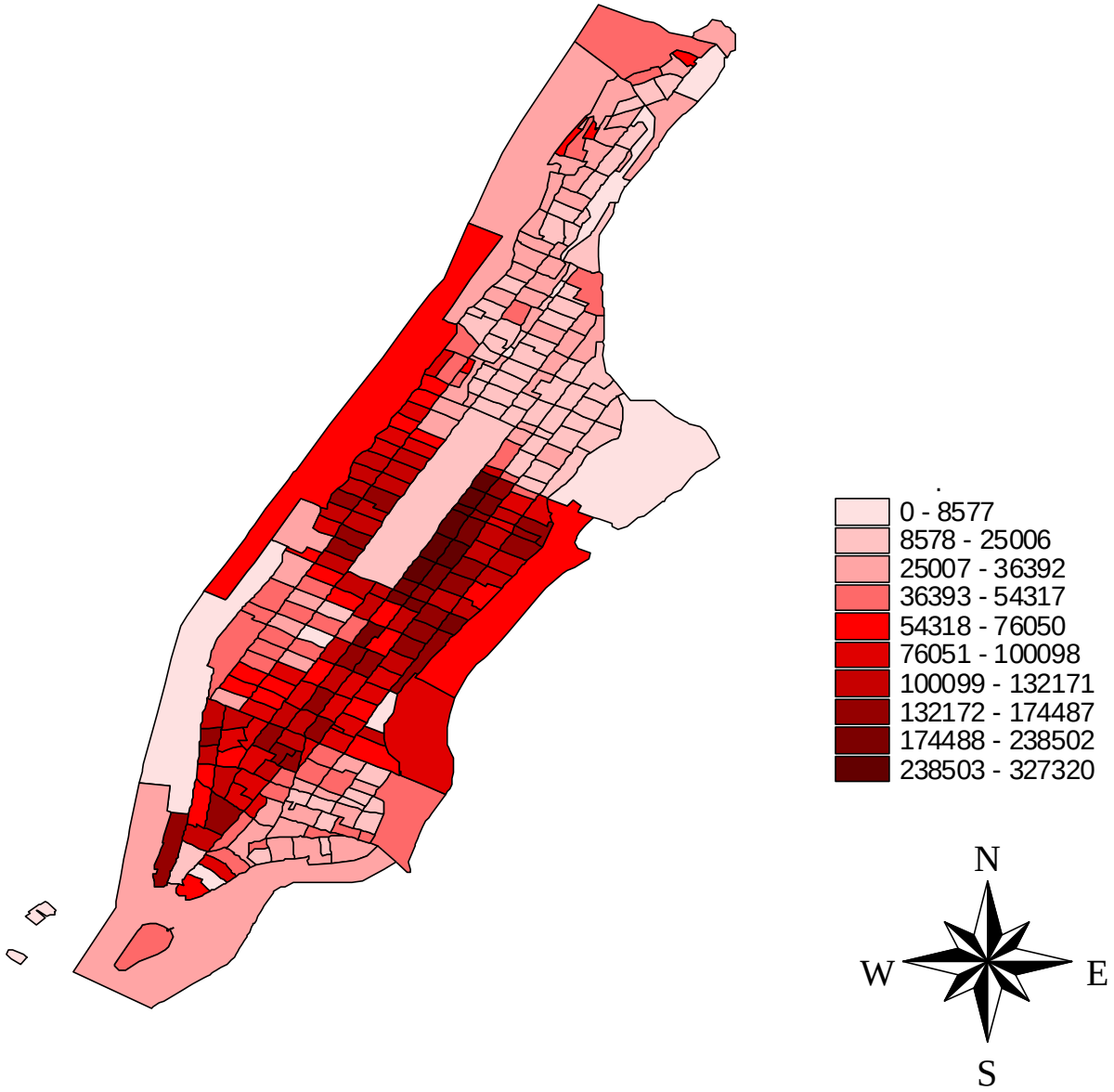


Figure 3

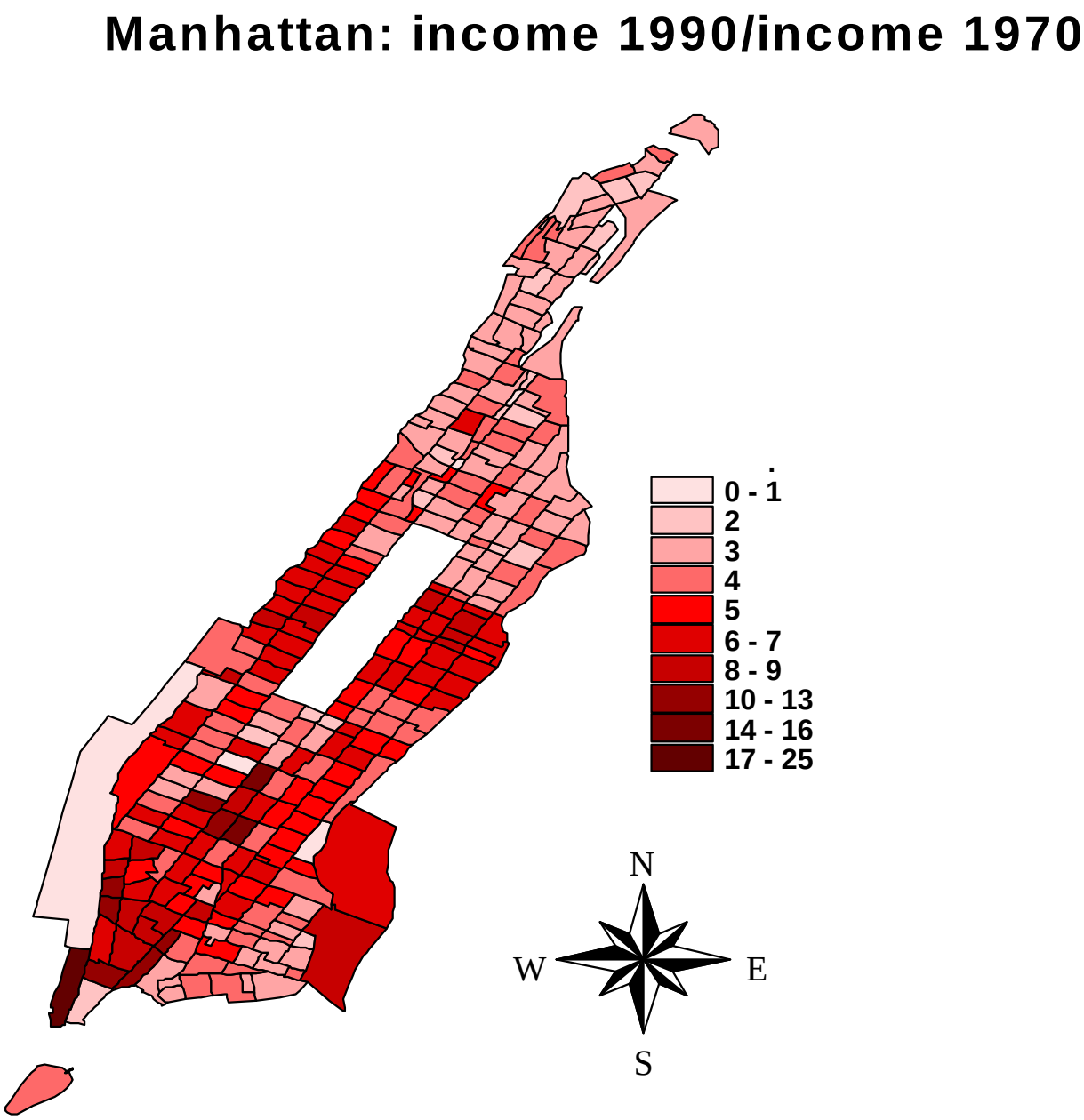

Manhattan: income 1990/income 1970
0 - 1
2
3
4
5
6 - 7
8 - 9
10 - 13
14 - 16
17 - 25
N
W
E
S

Figure 4

Manhattan: median rent 90/ median rent 80