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“TRADING PLACES”: THE ROLE OF ZONING IN PROMOTING AND DISCOURAGING INTRAMETROPOLITAN TRADE

William T. Bogart[†]

*It is futile to plan a city's appearance, or speculate on how to endow it with a pleasing appearance of order, without knowing what sort of innate, functioning order it has.*¹

INTRODUCTION

Before Copernicus, the dominant view of the solar system was that the sun and the other planets orbited the Earth. Increasingly ingenious explanations were invented to justify this theoretical construct in the face of anomalous empirical observations. Finally, Copernicus demonstrated that there was a more sensible way of understanding the universe. Similarly, the ongoing debate on the causes and consequences of urban sprawl has been hampered by a fundamental misunderstanding of how metropolitan areas work. This misunderstanding is analogous to the pre-Copernican fallacy that the Earth was the center of the universe, and everything else revolved around the Earth. In the discussion of urban sprawl, the downtown or central city takes the place of the Earth in the Ptolemaic cosmology, and the rest of the metropolitan area is defined only in relation to the downtown.

It is possible for the basic structure of a metropolitan area to change over time. Such a change has been occurring in United States metropolitan areas for the last 100 years, and the change is coming to fruition at the cusp of a new century. To plan for future urban growth, it is vital to recast our understanding of how our urban areas

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¹ JANE JACOBS, *THE DEATH AND LIFE OF GREAT AMERICAN CITIES* 14 (1961).

operate. It is time for a Copernican revolution that puts the downtown and the central city in their appropriate place—not unique and solitary, but rather one important part of a system.

Urban planners have engaged in the type of behavior that gives economists a bad name. Planners have based policy prescriptions on a theoretical model that has little empirical basis. Fortunately, zoning is often ineffective, as people are able to alter or work around the system to achieve their goals. However, the increased local land use control resulting from ever-stricter environmental laws implies that planners could wield greater control while their mental map of urban areas departs farther from reality.

Is the type of zoning developed for monocentric cities appropriate for the more complicated urban structure of the twentieth century?² In this Article, I will argue the need to focus on the role of zoning as a barrier to some types of trade and an encouragement to other types of trade to understand zoning in the twentieth century.³ I begin by surveying the state of the art in understanding how metropolitan areas function and then proceed to an analysis of the role of zoning. To briefly summarize, the issue is not merely “a pig in the parlor instead of the barnyard”⁴ but whether the barnyard is big enough to accommodate the pig. In other words, will the zoning process allow for the appropriate activities to occur, and will it allow them to occur on a large enough scale to be efficient?

I conclude with a brief discussion of why *Euclid* might not be as important in shaping metropolitan areas as the conventional wisdom holds. The basic idea is simple: people want (and are willing to pay for) the ability to exclude certain types of activity. If Euclidean zoning had not been upheld, there could have been alternative means of achieving the same goal. Ironically, these alternatives could have led to even more sprawl than the current system.⁵

² In *Village of Euclid v. Ambler Realty Co.*, 272 U.S. 365 (1926), the Court upheld the constitutionality of zoning while emphasizing the suburban nature of Euclid and its location in the direct path of Cleveland’s industrial expansion.

³ This work is complementary to Fischel’s thesis that zoning arose as a result of the revolution in transportation that enabled people to commute long distances. See WILLIAM A. FISCHEL, *THE HOMEVOTER HYPOTHESES: HOW HOME VALUES INFLUENCE LOCAL GOVERNMENT TAXATION, SCHOOL FINANCE, AND LAND USE POLICIES* ¶ 1-5 (forthcoming 2001) (draft date Oct. 2000) <<http://www.dartmouth.edu/~wfischel/WP.html>>. He argues that the uncertainty about urban form generated by the advent of first the streetcar and then the automobile gave impetus to people to incorporate their municipalities and to zone in an exclusionary fashion. See *id.* In my framework, this has the effect of encouraging trade among municipalities as businesses locate further from residences than they would in the absence of zoning.

⁴ *Village of Euclid*, 272 U.S. at 388.

⁵ See, e.g., ANTHONY DOWNS, *STUCK IN TRAFFIC: COPING WITH PEAK-HOUR TRAFFIC CONGESTION* (1992) (citing zoning as a cause of sprawl); James Howard Kunstler, *Home from Nowhere*, *ATLANTIC MONTHLY*, Sept. 1996, at 43, 48-49 (providing a composite picture of a town’s zoning requirements which may adversely affect the population). See also FISCHEL, *supra* note 3 (arguing that zoning must be important because people pay attention to it). I agree

I. WHAT DOES A NORMAL METROPOLITAN AREA LOOK LIKE?

"From now on, I'll describe the cities to you," the Khan had said, "in your journeys you will see if they exist."

But the cities visited by Marco Polo were always different from those thought of by the emperor.

"And yet I have constructed in my mind a model city from which all possible cities can be deduced," Kublai said. "It contains everything corresponding to the norm. Since the cities that exist diverge in varying degree from the norm, I need only foresee the exceptions to the norm and calculate the most probable combinations."

"I have also thought of a model city from which I deduce all the others," Marco answered. "It is a city made only of exceptions, exclusions, incongruities, contradictions. If such a city is the most improbable, by reducing the number of abnormal elements, we increase the probability that the city really exists. So I have only to subtract exceptions from my model, and in whatever direction I proceed, I will arrive at one of the cities which, always as an exception, exist. But I cannot force my operation beyond a certain limit: I would achieve cities too probable to be real."⁶

The dominant intellectual approach to describing cities during the twentieth century was the *monocentric city* model.⁷ In a monocentric city, all commercial and industrial activity takes place in the central business district, while the rest of the city consists of residential areas. This description was reasonably accurate as recently as 1950 in most cities,⁸ but even by 1960 some observers had discerned a new structure for metropolitan areas.⁹ This new structure was called

with Fischel in that each alternative way of allocating property rights implies substantial redistribution, hence great interest. I only argue that metropolitan spatial structure would be quite recognizable even if *Euclid* had been adjudicated otherwise.

⁶ ITALO CALVINO, *INVISIBLE CITIES* 69 (William Weaver trans., 1974).

⁷ See WILLIAM T. BOGART, *THE ECONOMICS OF CITIES AND SUBURBS* 177-206 (1998) (discussing metropolitan structure).

⁸ See Joel Schwartz, *The Evolution of the Suburbs*, in *SUBURBIA: THE AMERICAN DREAM* 23 (Philip Doles ed., 1976) (discussing how even the monocentric city model was a simplified description of the urban form of twentieth century cities). Chicago, in many ways the canonical monocentric city, and the city where the so-called "Chicago school" of urban sociology developed, emphasizing a model of urban areas as concentric circles with distinct land uses, had as many as six distinct commercial subcenters as early as 1910. See *id.*; see also JOEL GARREAU, *EDGE CITY: LIFE ON THE NEW FRONTIER* 76-78 (1991) (discussing how commercial subcenters were located at transit intersections, foreshadowing the future edge cities at the intersection of major highways).

⁹ See JEAN GOTTMAN, *MEGALOPOLIS: THE URBANIZED NORTHEASTERN SEABOARD OF THE UNITED STATES* 17-22 (describing the historical development of Megalopolis, the highly developed Northeastern Atlantic seaboard); JACOBS, *supra* note 1, at 14 (recognizing that metropolitan areas no longer have a single center of economic activity). Cf. ARTHUR KOESTLER, *THE SLEEPWALKERS: A HISTORY OF MAN'S CHANGING VISION OF THE UNIVERSE* 13-16 (1959)

the *polycentric city*, in recognition of the multiple centers of economic activity that comprised the metropolitan area. While some people have recognized this change for over forty years, it still has surprisingly little impact on the design of public policy. With notable exceptions such as Phoenix's "urban villages" planning concept, most metropolitan areas remain wedded to a picture of the world in which the downtown of the central city is the dominant employment center. Local governments and private individuals devote great resources to reverse the exodus of businesses from the downtown. Some of this activity is appropriate, but much of it resembles King Canute's orders to the tide.¹⁰

While there is now some general recognition that the polycentric model is a more accurate depiction of reality than the monocentric city model, the world has evolved beyond the basic polycentric model to a more diffuse system. The best analysis indicates that less than fifty percent of all metropolitan employment is located in employment centers, with the rest being distributed throughout the metropolitan area.¹¹

This dramatic change in the location of employment¹² has implications for understanding individual behavior. In a monocentric city, accessibility to work is equivalent to accessibility to shopping and cultural activities, because all are located downtown. In a polycentric city, the picture becomes more complicated, because people now need access not just to their jobs but also to the services produced in other employment centers. In addition, businesses in one employment

(discussing how scientific analysis of the solar system did not always fully utilize earlier insights).

¹⁰ See JUVAL PORTUGALI, *SELF-ORGANIZATION AND THE CITY* chs. 1-2 (2000) (introducing a variety of "idea maps" of cities, including the prototype of the monocentric city and the post-modern city exemplified by Los Angeles). See also E.W. SOJA, *POSTMODERN GEOGRAPHIES* (1989) (discussing how post-modernism applies to regional planning).

¹¹ See Alex Anas et al., *Urban Spatial Structure*, 32 J. ECON. LIT. 1426-64 (1998); Nathan Anderson & William T. Bogart, *The Structure of Sprawl: Identifying and Characterizing Employment Centers in Polycentric Metropolitan Areas*, 60 AMER. J. ECON. & SOC. 147-69 (2001); William T. Bogart & William C. Ferry, *Employment Centers in Greater Cleveland: Evidence of Evolution in a Formerly Monocentric City*, 36 URB. STUD. 2099-2110 (1999) (these sources validate the figure cited above in several metropolitan areas). See generally GARREAU, *supra* note 8, at 19-20, 102, 142, 182, 212, 306, 346 (including both detailed interviews and maps that illustrate the changing structure of United States metropolitan areas).

¹² It is possible to overemphasize how dramatic the change has been. Gottman quotes a European's impressions of American cities and marked sprawling in 1912-13:

In America the city has spread out with heretofore unknown proportions . . . The American city has a transportation apparatus that makes it possible to specialize its various wards, to separate the 'town' of business from the 'town' of the *home*, to place between them vast parks, to keep the countryside within itself. 'The locomotive,' Anthony Trollope wrote half a century ago, 'is here a domestic animal.' What would he say nowadays? Swarming all around, indefinitely expanding its suburban districts, the city is the most perfect expression of Americanism.

GOTTMAN, *supra* note 9, at 397 (alteration in original) (quoting PAUL VIDAL DE LA BLACHE, *PRINCIPES DE GÉOGRAPHIE HUMAINE* 295 (1921)).

center often consume services produced in other employment centers, such as a suburban corporate headquarters using a downtown accounting firm. The increasing percentage of two-worker households makes the accessibility question even more complicated. When two people work in two different places, their total commute is the same in a variety of locations, although one person might have a longer commute in one location than the other person.¹³ When my wife and I married in 1992, for example, she worked in Mentor, Ohio, about thirty miles east of where I worked in Cleveland. We looked for houses in between our two jobs, but our total one-way commute each day was bound to be about thirty miles. The only question was which one of us would have the longer commute.

The relative importance of commuting in household location decisions has fallen because of these trends in employment location.¹⁴ Accessibility can no longer be simply measured as the distance or time from home to downtown but must include several workplaces, shopping areas, cultural centers, and so on. In his book on metropolitan structure, Deyan Sudjik writes:

For the affluent, the home is the centre [sic] of life
From it, the city radiates outwards as a star-shaped pattern of overlapping routes to and from the workplace, the shopping centre [sic], and the school. They are all self-contained abstractions that function as free-floating elements. Each destination caters to a certain range of the needs of urban life, but they have no physical or spatial connection with each other in the way that we have been conditioned to expect of the city.¹⁵

Even the polycentric city model is insufficient to capture the richness of the interconnections in the modern metropolitan area. When only about half of all employment is concentrated into employment centers, the diffusion of production, consumption, and trade throughout the metropolitan area has gone to a new level. Rather than

¹³ See David Hotchkiss & Michelle White, *A Simulation Model of a Decentralized Metropolitan Area with Two Worker, 'Traditional,' and Female-Headed Households*, 34 J. URB. ECON. 159 (1993) (presenting a detailed theoretical and simulation analysis of the impact of two-worker households on metropolitan structure and finding even with only one worker, the simple tradeoff of accessibility to downtown versus housing price is not completely satisfying as a description of the choices made by households). See also Randall Crane, *The Influence of Uncertain Job Location on Urban Form and the Journey to Work*, 39 J. URB. ECON. 342, 343 (1996) (discussing the impact of the potential for suburban employment on household preferences for location relative to the workplace and concluding that a household will not minimize its current commute, but instead will take into account the possibility that the commute could change while the household remains in the same residence).

¹⁴ Cf. DOWNS, *supra* note 5, at 15-16 (citing statistics regarding commuting and finding that, by 1990, commuting accounted for less than twenty-five percent of all personal trips, and that the percentage has been falling for several decades).

¹⁵ DEYAN SUDJIK, *THE 100 MILE CITY* 308 (1992).

focus narrowly on bilateral trade between bedroom suburbs and downtowns, we are now forced to consider a complicated web of trade in goods and services among a wide range of economies within the metropolitan area. As Rybczynski says:

The old hierarchy of center and periphery, of downtown and suburb . . . is being replaced by a system of roads and highways and, one could add, by a system of telephone wires, television cables, and computer links. . . . [W]hat was once a composition of well-defined physical places has been replaced by vague zones of influence; accessibility, not permanence, is what characterizes the metro area.¹⁶

What has been described as "urban sprawl" is perhaps best understood as a time of transition from monocentric metropolitan areas of the early twentieth century to the interrelated trading place metropolitan areas of the twenty-first century. This follows the complex systems paradigm of:

steady state → *chaos* → *bifurcation* → *phase transition* → *steady state*.¹⁷

In other words, urban sprawl represents the chaotic time of transition from one equilibrium metropolitan structure to another.¹⁸ Part of the difficulty in recognizing this pattern is that the transition takes place over a period of years, so that the daily (and even annual) experience of many people encompasses only the chaos.¹⁹ The most important feature of local land use in efficiently generating this new structure is arguably flexibility. If the land use regime is flexible, then as the new structure begins to emerge people can make the most appropriate use of land instead of being forced into a configuration based on an obsolescent structure. Richard Peiser finds that cities that allow early development at low densities have a final density higher

¹⁶ WITOLD RYBCZYNSKI, *CITY LIFE: URBAN EXPECTATIONS IN A NEW WORLD* 232 (1995).

¹⁷ See PORTUGALI, *supra* note 10, at 310.

¹⁸ See GARREAU, *supra* note 8, at 4 (theorizing that edge cities represent a new and so far unrecognized type of urban structure). See also MASAHISA FUJITA ET AL., *THE SPATIAL ECONOMY: CITIES, REGIONS AND INTERNATIONAL TRADE* (1999) (discussing a formal mathematical treatment of bifurcations and phase transitions applied to metropolitan structure).

¹⁹ See WILLIAM FISCHER, *THE ECONOMICS OF ZONING LAWS: A PROPERTY-RIGHTS APPROACH TO AMERICAN LAND USE CONTROLS* (1985) (discussing the idea in the context of concern over lost farmland near urban areas because even though only four percent of the U.S. is developed for urban purposes, most people see nothing but urban areas, and therefore when even a small amount of farmland nearby is converted, it can represent a large fraction of the farmland with which the people are familiar.) See also GOTTMAN, *supra* note 9, at 258-59 (providing a thoughtful analysis of how agriculture near urban areas shifts from land-intensive to capital-intensive activities rather than disappearing and providing as an example a farmer who sells his cornfields, but continues to operate a dairy or poultry operation by importing the feed rather than growing it himself).

than cities that force early development to be built at a higher density.²⁰ This illustrates the value of flexibility in a time of structural transition. Not only is the planner's approach of zoning in advance of development based on a flawed paradigm, it is ineffective at accomplishing the goal of relatively high density development compared to a more flexible, "sprawl-friendly" regime.

Trading Places

[A] man who earns \$5.00 an hour would consider the time cost of a half-hour trip to be \$2.50. This rate of time cost equals the accrual of interest (at 5 per cent per annum) on an investment of about \$880,000. So, calculated on that basis, human freight carries a time cost equivalent to that of a commodity worth at least \$300 an ounce—perhaps not "more precious than rubies," but somewhere in the range between gold and diamonds.²¹

Economists model metropolitan areas as small countries that specialize and trade with each other. In turn, metropolitan areas are composed of a variety of regions that produce goods traded within the metropolitan area as well as exported from the metropolitan area.²² Consider the extreme example of a bedroom suburb. It locally produces and consumes housing and local government services, exports labor services, and imports everything else. Perhaps the best metaphor for a metropolitan area is a commonwealth of independent countries—a world of "trading places." Households and firms reside in one country but engage in trade throughout the commonwealth. Intrametropolitan trade is substantial. Henderson estimates that about sixty percent of all employment in a metropolitan area produces goods and services consumed within the metropolitan area.²³ Glaeser and colleagues emphasize the importance of local amenities—that is, nontraded features of the region—in determining the level of metropolitan economic growth and its distribution throughout the metropolitan area.²⁴

The idea that the parts of a metropolitan area are interconnected is not new. Marion Clawson argued that people live in many locations, not just where they sleep:

²⁰ See Richard B. Peiser, *Density and Urban Sprawl*, 65 *LAND ECON.* 193 (1989).

²¹ Edgar M. Hoover, *The Evolving Form and Organization of the Metropolis*, in *ISSUES IN URBAN ECONOMICS* 237, 242 (Harvey Perloff & Lowdon Wingo, Jr. eds., 1968).

²² See BOGART, *supra* note 7, at 249-50.

²³ See J. VERNON HENDERSON, *URBAN DEVELOPMENT: THEORY, FACT AND ILLUSION* 20 (1988).

²⁴ See Edward Glaeser et al., *Consumer City* (last modified July 2000) <<http://www.nber.org/papers/w7790>>.

As a result of these relationships, standard data on population classified according to customary sleeping location must be supplemented by data on place of employment, on location of commercial and industrial activities, on places of recreation and of education. Transportation routes and methods and customary travel patterns are the means whereby the various scattered locations are linked together into a total living pattern for the individual and for the community.²⁵

Urban planners, though, are more likely to take the distribution of activity at a point in time as definitive and to focus on whether all necessary activities are located in the correct location at that point. This myopia, which results in part from their inaccurate understanding of how metropolitan economies work, handicaps their ability to allow experimentation and the discovery of new and successful urban forms. Kunstler's attacks on zoning²⁶ are largely a condemnation of the unwillingness of planners to move outside their existing prescriptions.²⁷ While Kunstler has his own blinders, especially his belief in New Urbanism as the one true faith, his attack on the inertia of planners is on target.

II. A TALE OF TWO METROPOLITAN AREAS—CLEVELAND, OHIO AND LOS ANGELES, CALIFORNIA

The new world that I describe will hardly surprise people inured to shocking ideas about sprawling cities like Los Angeles, Houston, or Atlanta. But what many popular commentators have missed is that these cities are not the exception but the rule. I will now illustrate how even a staid Midwestern city like Cleveland looks, for economic purposes at least, very much like that quintessence of sprawl, Los Angeles.

Los Angeles is the stereotypical auto-dependent, centerless city decried by critics of modern metropolitan structure. It has been castigated in fiction as a city designed by the devil²⁸ and in nonfiction as a

²⁵ MARION CLAWSON, *SUBURBAN LAND CONSERVATION IN THE UNITED STATES: AN ECONOMIC AND GOVERNMENTAL PROCESS* 16 (1971). See also Nathan Anderson, "Trading Places": *Measuring Trade in Labor Services Among Suburbs in Greater Cleveland* (1999) (unpublished senior honors thesis, Case Western Reserve University) (on file with the author) (using travel diary data from a survey of households in Northeast Ohio to examine this issue).

²⁶ See Kunstler, *supra* note 5, at 50.

²⁷ See JOSEPH SCHUMPETER, *CAPITALISM, SOCIALISM, AND DEMOCRACY* 81-86 (3d ed. 1950) (emphasizing the role of "creative destruction" in advancing the quality of life). Because new ideas often lead to substantial upheaval, they are disturbing to defenders of the status quo. Moreover, he points out that the benefits of these unpredictable and entrepreneurial advances are often concentrated among the less wealthy, because of the nature of capitalism as an engine of mass production. See *id.*

²⁸ See FRED HOYLE, *Welcome to Slippage City*, in *ELEMENT* 79, at 57, 72 (1967).

post-modern hell.²⁹ Cleveland, on the other hand, is just one more stop in “flyover country,” a staid Midwestern town known more for football (and its suburb of Euclid among land-use aficionados) than for pathbreaking urban structure.

By 1990 Cleveland looked, in overall statistical terms, quite similar to Los Angeles. In 1990, for example, about thirty-two percent of total employment in the Los Angeles metropolitan area was concentrated in employment centers, defined as areas with both dense employment and large total employment.³⁰ In 1990, only thirty-one percent of total employment in Cleveland was concentrated in employment centers.³¹ To put it differently, one could argue that in 1990 employment in Cleveland was *more* diffuse than employment in Los Angeles.

An alternative measure of centralization is the extent to which employment is concentrated in the downtown of the largest city in the metropolitan area. In Los Angeles, in 1990 about ten percent of total metropolitan area employment was located downtown.³² In Cleveland, about ten percent of total metropolitan employment was located downtown.³³

Moreover, the number and size distribution of employment centers in the two metropolitan areas follow a common statistical regularity, the so-called “rank-size rule.” This rule says that the size of an employment center is inversely proportional to its rank in terms of employment, that is, the second largest employment center is about one-half the size of the largest, the third largest employment center is about one-third the size of the largest, and so on. Not only does the rank-size rule accurately describe the employment distribution of the current employment centers, but it is also a good description of the employment distribution of “prospective” employment centers, areas with dense employment but with total employment below a threshold level.³⁴

The employment centers in Cleveland and Los Angeles also seem to have similar economic functions as measured by the way that they specialize. Although the exact way of measuring specialization

²⁹ See MIKE DAVIS, CITY OF QUARTZ 19-20 (1992).

³⁰ See Genevieve Giuliano & Kenneth Small, *Subcenters in the Los Angeles Region*, 21 REGIONAL SCI. & URB. ECON. 163, 178 (1991).

³¹ See Bogart & Ferry, *supra* note 11, at 2100.

³² See Giuliano & Small, *supra* note 30, at 178.

³³ See Bogart & Ferry, *supra* note 11, at 2110 (giving data for total downtown employment for Cleveland); BOGART, *supra* note 7, at 5 tbl.1.1 (giving total metropolitan employment for Cleveland).

³⁴ See Anderson & Bogart, *supra* note 11, at 163-66 (discussing in detail the rank-size rule and presenting evidence on its applicability to prospective employment centers in Cleveland); Bogart & Ferry, *supra* note 11, at 2103-04 (reporting the rank-size rule results for Los Angeles and Cleveland).

is not the same in the studies of the two metropolitan areas, the conclusion that the employment centers specialize and that they can be described as falling into one of a few categories is common.³⁵

The discussion in this section has focused on these two seemingly extreme cases, but the results are consistent across the entire range of metropolitan areas that have been studied. The conclusion to draw from careful analysis of the data is that as early as 1990 there was a clear trend in the structure of metropolitan areas in the United States.³⁶ When data from the 2000 census become available, that trend will probably be even clearer.

III. INTRAMETROPOLITAN TRADE

We are caught in the tension between forces that encourage distinctiveness and forces that compel all communities toward identity. Centrifugal forces broke down the huge ancient cities, the Londons and Tokyos and New Yorks, into neighborhood communities that seized quasi-autonomous powers. Those giant cities were too unwieldy to survive; density of population, making long-distance transport unfeasible and communication difficult, shattered the urban fabric, destroyed the authority of the central government, and left the closely knit small-scale subcity as the only viable unit. Two dynamic and contradictory processes now asserted themselves. Pride and the quest for local advantage led each community toward specialization: this one a center primarily of industrial production, this one devoted to advanced education, this to finance, this to the processing of raw materials, this to wholesale marketing of commodities, this to retail distribution, and so on, the shape and texture of each district defined by its chosen function. And yet the new decentralization required a high degree of redundancy, duplication of governmental structures, of utilities, of community services; for its own safety each district felt the need to transform itself into a microcosm of the former full city. Ideally we should

³⁵ See, e.g., Anderson & Bogart, *supra* note 11, at 154 (using location quotient analysis to identify the specializations of employment centers); Bogart and Ferry, *supra* note 11, at 2102 (same); Giuliano & Small, *supra* note 30, at 176 (using cluster analysis to group similar employment centers together). Bingham and Kimble use expert opinion to identify edge cities in Ohio and ZIP code level employment data to calculate their specializations. See Richard Bingham & Deborah Kimble, *Industrial Composition of Edge Cities and Downtowns*, 9 *ECON. DEV. Q.* 259, 262-63 (1995).

³⁶ See Anderson & Bogart, *supra* note 11, at 158-63 (applying the same methodology as Bogart and Ferry to Indianapolis, St. Louis, and Portland (Or.) and finding that those metropolitan areas are quite similar to Cleveland). McMillen and McDonald analyze Chicago and find similar results. See Daniel McMillen & John McDonald, *Suburban Subcenters and Employment Density in Metropolitan Chicago*, 43 *J. URB. ECON.* 157, 168 (1998).

have hovered in perfect balance between specialization and redundancy, all communities striving to fulfill the needs of all other communities with the least possible overlap and waste of resources; in fact our human frailty has brought into being these irreversible trends of rivalry and irrational fear, dividing district from district, so that against our own self-interest we sever year after year our bonds of interdependence and stubbornly seek self-sufficiency at the district level. Since this is impossible, our lives grow constantly more impoverished.³⁷

Robert Silverberg captures the emerging structure of the twenty-first century metropolitan area as a set of relations among “trading places.” However, he is not an architect, urban planner, economist, lawyer, political scientist, or sociologist. His view is pessimistic, but this might just be a plot device—the excerpt above is from a short story in a science fiction anthology.

This Article is about the *future* of metropolitan areas in the United States, and the only way to anticipate the future is to understand the present. The present situation represents a balancing between the forces of specialization and redundancy. There is local specialization in the production of goods and services for export to other areas, and there is local specialization in the production of goods and services for local consumption. There is also redundancy, not just in government services and utilities, as Silverberg observes in his fictional society, but also in the form of diffuse service employment in the form of McDonalds, Walgreens, Dominos, and urgent care medical facilities.³⁸

A. *Specialization in Local Consumption Goods—The Tiebout Model*

We can usefully think of the suburbs in a metropolitan area as “small open economies,” which is another way of saying that for economic purposes they are small countries. They are open because they import and export goods and services to other economies. They are small in the sense that their individual actions are unlikely to have a dramatic effect on the entire market for goods and services.

Countries import some goods and services, export some goods and services, and locally produce and consume some goods and services. The United States, for example, imports VCRs from other countries, exports corn to other countries, and consumes soft drinks

³⁷ Robert Silverberg, *Getting Across*, in *FUTURE CITY* 155, 169-70 (Roger Elwood ed., 1973).

³⁸ See *supra* Part II for a discussion about the extent of employment concentration in Cleveland and Los Angeles. If about fifty percent of employment is located in employment centers, perhaps the remaining employment is more diffuse throughout the metropolitan area.

produced within the United States. What are the analogous products for the suburban economy? The most common export is labor—people live in the suburb and work in another suburb or downtown. A typical import is retail services from a regional shopping mall. (The shopping mall represents an export activity for the suburb in which it is located.) Important locally produced services include housing and local government services.

Just because every suburb produces housing and local government services does not mean that every suburb is identical. Quite the opposite, in fact: local government services and the quality and density of the local housing stock are among the primary ways that different suburbs are distinguished from one another. The dominant approach among economists to analyze suburbs focuses precisely on these differences. This approach is called the “Tiebout model,” after the economist who first proposed it.³⁹

The Tiebout model assumes that people are free to choose the town in which they reside. Towns compete for residents by offering a bundle of public services financed by local taxes. Individuals then “vote with their feet” and choose the combination of taxes and public services that is most appealing to them. The conclusion of the model is that suburbs will tend to consist of people who have similar tastes for public services, and further that the system will be efficient in that the local taxes are essentially a price for local public services.

The Tiebout model has been the basis for most economic research focused on local governments for the past forty-five years. There is considerable evidence that suburbs are relatively homogeneous.⁴⁰ It is difficult to measure individual preferences for public goods, but we know that these preferences are correlated with other characteristics, such as age and income. Much of the literature has focused on measuring these other characteristics and examining whether suburbs in metropolitan areas with a more fragmented local government structure are more homogeneous.⁴¹

³⁹ See Charles M. Tiebout, *A Pure Theory of Local Expenditures*, 64 J. POL. ECON 416 (1956). His original article has spawned an enormous research literature that will be only briefly summarized here. An important modern interpretation and extension of Tiebout’s work is FISCHER, *supra* note 3.

⁴⁰ See FISCHER, *supra* note 19, at ch.14.

⁴¹ See William T. Bogart, “What Big Teeth You Have!” *Identifying the Motivations for Exclusionary Zoning*, 30 URB. STUD. 1669, 1679 (1993). The Tiebout model is only one reason that suburbs tend towards homogeneity, in particular that they will attempt to exclude lower income households. I identify four reasons for exclusion: fiscal zoning (excluding households that pay less in taxes than they consume in public services); public goods (excluding households that increase the cost of producing public services); consumption (excluding households that generate negative externalities, especially in housing); and political economic (excluding households that are likely to have systematically different preferences for public services than the politically dominant residents). See *id.* at 1669. It is impossible to distinguish among these

An important assumption of the Tiebout model is that people are free to locate without worrying about their commute.⁴² This assumption of accessibility flies in the face of anecdotes about long drives and gridlock. However, the evidence is that commuting times have remained roughly constant or fallen slightly over the past few decades, with the commute in most metropolitan areas averaging less than twenty-five minutes. Hence, the assumption that households are free to locate without regard to their workplace is consistent with the observed patterns of commuting.⁴³

The most important theoretical addition to the original Tiebout model was provided by Bruce Hamilton. Hamilton argued that communities could use zoning to ensure that people were unable to free ride and enjoy local public services.⁴⁴ As Hamilton points out, the most common local tax is the property tax, which varies according to the value of one's house.⁴⁵ So households have an incentive to own a below-average market value house in a town that supplies a high level of local public services. Fiscal zoning, in which towns set a minimum house value, solves this problem. Of course, it is illegal for towns to set a minimum house value, but the combination of zoning, subdivision regulations, and building codes can implicitly have the same effect. Mieszkowski and Zodrow argue that the flexibility available to local governments is insufficient to make the property tax efficient.⁴⁶ Fischel disagrees, arguing that zoning reflects local preferences and is not a major restriction on households.⁴⁷

reasons based solely on the observation that certain types of households (low income) are being excluded. *See id.* at 1679.

⁴² *See* Tiebout, *supra* note 39, at 419 (assuming that “[c]onsumer-voters are fully mobile and will move to that community where their preference patterns, which are set, are best satisfied”).

⁴³ *See* Bruce Hamilton, *Wasteful Commuting Again*, 97 J. POL. ECON. 1497, 1504 (1989).

⁴⁴ *See* Bruce Hamilton, *Capitalization of Intrajurisdictional Differences in Local Tax Prices*, 66 AM. ECON. REV. 743, 748 (1976) (arguing that “some sort of market interference, such as zoning, is required” to discourage people from “shopping among jurisdictions for their most preferred bundle of public services”); *see also* Bruce Hamilton, *Zoning and Property Taxation in a System of Local Governments*, 12 URB. STUD. 205, 205 (1975) (arguing that “in the absence of the constraints which will be built into my model, the Tiebout Hypothesis seems to be a formula for musical suburbs, with the poor following the rich in a never-ending quest for a tax base”) [hereinafter Hamilton, *Zoning and Property Taxation*].

⁴⁵ *See* Hamilton, *Zoning and Property Taxation*, *supra* note 44, at 206 (assuming that “local governments finance their operations solely with a proportional property tax”).

⁴⁶ *See* Peter Mieszkowski & George Zodrow, *Taxation and the Tiebout Model: The Differential Effects of Head Taxes, Taxes on Land Rents, and Property Taxes*, 27 J. ECON. LITERATURE 1098, 1140 (1989) (concluding “that a national system of property taxes is distortionary and decreases overall return to capital by approximately the amount of taxes collected”).

⁴⁷ *See* William Fischel, *Property Taxation and the Tiebout Model: Evidence for the Benefit View from Zoning and Voting*, 30 J. ECON. LITERATURE 171, 171 (1992) (“[I]f local governments can dictate a minimum property tax base per household, and if households can choose among many different communities along the lines of Charles Tiebout, the property tax becomes merely a fee for local public services and thus has no deadweight loss.”).

There is considerable evidence that suburbs specialize in producing local government services for their residents. Because one facet of the local amenities is the restrictiveness of zoning, it is unsurprising that every suburb will not have extensive employment opportunities for its residents within its borders. Let us turn now to evidence on how much specialization exists in the production of traded goods as well as the nontraded local public services.⁴⁸

B. Specialization in Production—Evidence from Employment Centers

Economists and geographers have been studying the emerging structure of the twenty-first century metropolitan area for some time now. There are two main questions that have been asked. First, how much employment is located in employment centers—areas with both large numbers of workers and high employment density—and how much is more diffused? Second, are the employment centers specialized or do they resemble each other in the mix of industries located there?

Answering these questions is a fundamental step towards developing a theory of the impact of zoning. Assembling the data needed for such work, however, is still extremely difficult, so most studies examine only one metropolitan area at a time. While this is useful, it handicaps attempts to compare results across metropolitan areas, as different authors sometimes use slightly different methodologies, and there are inherent difficulties in generalizing from the largest metropolitan areas, such as Los Angeles or Chicago, that have been the subject of the most extensive analysis.

Anderson and I have recently looked at four comparable metropolitan areas.⁴⁹ We analyze Cleveland, St. Louis, Portland, and Indianapolis using a common definition of employment center and a common approach for measuring specialization.⁵⁰ Our results strongly support the idea that there is a common structure among metropolitan areas. We find that the percentage of total employment located in employment centers, the size distribution of employment centers, and the pattern of specialization of employment centers is similar in each of the cities studied.⁵¹

⁴⁸ Public services are referred to as “nontraded” because they are only available to the residents of the community. For example, only residents are allowed to send their children to the local public schools, and there are often restrictions on the use of public recreational facilities as well. On the other hand, “traded” goods and services are available to anyone within the metropolitan area. For example, a shopping mall provides retail services to households throughout the region, not just people that live in the town where the mall is located.

⁴⁹ See Anderson & Bogart, *supra* note 11, at 147.

⁵⁰ See *id.* at 148.

⁵¹ One interesting result in the context of this symposium is that Euclid is found to be part of an employment center that specializes in the manufacture of durable goods. This is consistent with the descriptions of Euclid in *Village of Euclid v. Ambler Realty Co.*, 272 U.S. 365, 371

If employment centers are specialized, then it must be the case that they export their goods and services to other employment centers and import goods and services from other employment centers. It makes no sense, in such a world, to think that we can study the economy of a suburb in isolation. Rather, each suburb is part of a system of interactions, and the economic theory of trade is vital to understanding the modern metropolitan area.

C. Importing and Exporting Goods and Services—The Role of Cars and Trucks

We are familiar with the ideas of importing and exporting goods and services from one country to another. It might seem puzzling at first, however, to think about imports and exports occurring within a metropolitan area. After all, there is no customs barrier, no currency conversion, and no passport required when transporting products from one suburb to another. How then, can we describe these activities as importing and exporting?

When we say that a good or service is exported from an area, all that we mean is that the area produces more of a good than it wishes to consume. The excess is sold—exported—to others. Similarly, an import occurs when an economy consumes more than it produces. These definitions of imports and exports apply whether the economy in question is a country, a metropolitan area, a part of a metropolitan area, or even an individual.⁵²

When we talk about employment centers within a metropolitan area trading with each other, much of the trade will occur using cars and trucks. My morning commute represents an export of labor services from the place I live and an import of labor services by the employment center where my university office is located. The telephone, email, and fax machine also make it possible to export and import services without individuals leaving their offices. The phone call from a manufacturing company in Euclid to their lawyer in downtown Cleveland represents an export of legal services from downtown and an import of legal services to Euclid.

With this background, we are now (finally) able to begin the analysis of zoning. Zoning and related land-use restrictions (subdivi-

(1926) (“The recent industrial development of the City of Cleveland, following the railroad lines, has already reached the Village and to some extent extends over it. In its obvious course, this industrial expansion will soon absorb the area in the Village for industrial enterprises.”). See also *Ambler Realty Co. v. Village of Euclid*, 297 F. 307, 308-09 (N.D. Ohio 1924) (“The village of Euclid is a suburb of the city of Cleveland and a part of its great metropolitan and industrial area. It comprises approximately 16 square miles. If fully built up as a city, it will accommodate a population of several hundred thousand . . .”).

⁵² At the individual level, I export economics lectures and import plumbing services. I also produce some goods and services for my own consumption, for example, when I cook dinner for myself.

sion regulations, building codes, and so on) limit the extent to which land can be used to produce certain goods and services. As a result, it can have an influence on the pattern of intrametropolitan trade.⁵³ For example, forbidding an activity within a suburb that the suburb would otherwise have exported does not necessarily mean that the activity does not occur, only that the residents of the suburb will now have to import the activity from another suburb. Just because your town does not allow Wal-Mart to locate there does not mean that there will be no Wal-Mart in the region, it only means that your residents will be shopping at Wal-Mart in another suburb. It is possible, in addition, that changing the pattern of intrametropolitan trade will change the pattern of trade between the metropolitan area and other metropolitan areas.⁵⁴

IV. ANALYZING ZONING AS A TRADE BARRIER

Zoning (and related land-use regulation) has two effects on the production of traded goods within a region. The first effect of zoning is to alter the factor intensity of production. I call this effect "intensive zoning" because it operates at the intensive margin of production. In models where capital and land are the factors of production, this effect is modeled as a reduction in the capital-land ratio.⁵⁵ Alternatively, it could be modeled as a reduction in the labor-land ratio. Regardless, intensive zoning lowers the density with which land can be used to produce goods and services.

The second effect of zoning is to allocate a maximum amount of land for use in production of a good.⁵⁶ I call this effect "extensive zoning" because it affects the extensive margin of production. Extensive zoning in practice also involves intensive zoning,⁵⁷ and therefore

⁵³ See FISCHER, *supra* note 3. See also Leon Moses & Harold F. Williamson, Jr., *The Location of Economic Activity in Cities*, 57 AM. ECON. REV. 211 (1967), for an analysis of the impact of the truck on the location of business activity within metropolitan areas.

⁵⁴ See BOGART, *supra* note 7, at 104; Paul Courant & Alan Deardorff, *International Trade with Lumpy Countries*, 100 J. POL. ECON. 198 (1992).

⁵⁵ See John McDonald, *The Estimation of the Impact of Residential Zoning on Land Values*, 1 ECON. LETTERS 183 (1978). Sivitanidou and Wheaton analyze zoning as a restriction on the capital-land ratio in order to investigate the effects on factor prices. See Rena Sivitanidou & William Wheaton, *Wage and Rent Capitalization in the Commercial Real Estate Market*, 31 J. URB. ECON. 206 (1992). They find that zoning that is too rigorous can actually destroy the possibility of employment in a suburb. They also find that increasing the restrictiveness of zoning tends to benefit the owners of commercial land at the expense of workers—an "artificial" scarcity of land has been created. Finally, they note the possible efficiency consequences of reducing agglomeration economies of scale. See *id.* at 219-23.

⁵⁶ For an example of analysis exploring this type of zoning, see John McDonald & Daniel McMillen, *Land Values, Land Use, and the First Chicago Zoning Ordinance*, 16 J. REAL EST. FIN. & ECON. 135, 139 (1998) (explaining that "[p]art of the purpose of the [1923 Chicago Zoning Ordinance] might have been to encourage businesses to locate in Chicago").

⁵⁷ Why is this the case? If the factor intensity was not limited via intensive zoning, then a business could employ non-land inputs at an arbitrarily high density and undo the effects of extensive zoning.

binding extensive zoning is in effect a maximum production level for the good. This observation makes one result immediate: if extensive zoning is binding on the good that would be exported in the absence of zoning, then it is possible for that good to be imported in the presence of zoning.

Most analyses of zoning only include one of the two types, and a necessary extension of the theoretical and empirical literature is to synthesize them and test their effect. An interesting example is Fischel's book, which remains an important benchmark in zoning analysis. His definition of zoning as the division of land into areas in which some activities are permitted and others prohibited is clearly based on extensive zoning.⁵⁸ But his formal analysis of zoning uses the idea of trading property rights to the intensity of land development, an intensive zoning concept.⁵⁹ Less formal analyses implicitly recognize that there are two effects and that they are connected.⁶⁰ Downs argues that restrictive suburban zoning (minimum lot size restrictions, for example, which are a form of intensive zoning) leads to conversion of agricultural land to urban land use (a change in land use at the extensive margin).⁶¹ However, Downs does not have a formal model of the two effects of zoning.

Intensive zoning leads to a reduction in the capital-land ratio in the production of traded goods. This is also the effect that a tax on capital would have. If the tax was imposed only on capital used in the production of one product, say office services, (a "partial factor tax" in the language of public finance economists), then the capital-land ratio (height of the buildings) in office services would decrease, all else being equal. If the tax were imposed on all capital, there would be a decrease in the capital-land ratio in all goods.

There are two important differences between the effects of imposing a tax on capital and the effects of intensive zoning. The first difference is that intensive zoning can have differential effects on different goods, whereas a general tax on capital would not. However, if the capital tax was imposed as a series of separate partial factor taxes, then the effects of intensive zoning on both goods could be replicated.

⁵⁸ See FISCHEL, *supra* note 19, at 21 ("Zoning is the division of a community into districts or zones in which certain activities are prohibited and others are permitted.").

⁵⁹ See *id.* at xiii ("This book is an attempt to persuade my fellow economists that zoning and other local land use controls are most usefully viewed as collective property rights controlled and exchanged by rational economic agents.").

⁶⁰ See ANTHONY DOWNS, *NEW VISIONS FOR METROPOLITAN AMERICA* 3-5 (1994) (concluding that the old land use mechanism described as "unlimited low-density sprawl" is rapidly being replaced by growth management policies seeking to restrict growth).

⁶¹ See *id.* at 14 (explaining that exclusionary zoning "encourages converting too much open space into urban uses" and that "[s]ome planners also criticize suburban sprawl because it swallows prime agricultural land and often encroaches upon environmentally sensitive areas").

The second difference between a tax on capital and zoning is more substantial. A tax on capital does not impose an upper limit on the production of the capital-intensive good, as does zoning. Suppose there is a partial factor tax on office service production. This might reduce the desired density of employment to the point that the cost-minimizing/profit-maximizing employment pattern would be to have no office employment in the suburb, perhaps because only retail and manufacturing activity is the highest and best use for the land. Under a tax regime, such an outcome is possible. However, if some land is zoned for office activity rather than retail or industrial activity, then zoning will have a different impact than the tax, as the retail and industrial users will be unable to convert the land from office use.⁶²

While zoning is therefore not completely equivalent to a tax on capital, it does have similar effects. This implies that some of the same principles can be applied to the general equilibrium effects of zoning as apply to the general equilibrium analysis of taxation. In particular, it is likely that even if the metropolitan area is "small" relative to the rest of the world, its zoning could nevertheless have an impact upon other metropolitan areas. Bradford⁶³ and Courant and Rubinfeld⁶⁴ illustrate this possibility using tax policy. The logic of their analyses is that the local taxation of capital (in their analyses via a tax, in mine via zoning) will lead to the migration of capital elsewhere, which will in turn lower the overall return to capital in other places as its supply increases.⁶⁵ Hence, capital owners everywhere bear some of the burden of the restriction on the use of capital in one area.

Zoning is a restriction on the quantity produced of a good, while a tax on capital affects the price of the good. Because it imposes a maximum capital-land ratio in production, zoning is also like a maximum land price. There is a well-known result that price and quantity controls aimed at controlling the impact of negative externalities are equivalent in their effect on social welfare when costs are known and benefits are uncertain, while price controls are superior if

⁶² Of course, this would provide an incentive for landowners to lobby for either a zoning variance or a reclassification of their property.

⁶³ See David F. Bradford, *Factor Prices May Be Constant but Factor Returns Are Not*, 1 ECON. LETTERS 199, 199 (1978) (arguing that the imposition of a tax on capital in a small region may have large welfare effects outside the region).

⁶⁴ See Paul N. Courant & Daniel L. Rubinfeld, *On the Measurement of Benefits in an Urban Context: Some General Equilibrium Issues*, 5 J. URB. ECON. 346, 346 (1978) (using local market data to determine the impact of taxing decisions in an urban area and finding these decisions affect the rest of the world).

⁶⁵ See Bradford, *supra* note 63, at 202 (noting that a local tax will shift capital out of the local region, so that a loss to capital outside the local area occurs); Courant & Rubinfeld, *supra* note 64, at 355 (focusing on the negative distributional effects of a tax on urban areas and points beyond).

costs are uncertain.⁶⁶ Therefore, there is no situation in which quantity controls will be strictly preferred to price controls.

If price controls are preferred to quantity controls, then why do communities impose zoning instead of imposing a maximum land value, a tax on capital, or even an export tax on capital-intensive goods and services?⁶⁷ There are four possible explanations. First, communities might be acting stupidly. Although possible, this is probably not a fruitful line of inquiry for economists, given our assumption of rational behavior by individuals. Second, the main uncertainty about land use is the externalities in consumption (benefits) rather than the externalities in production (costs). If this were the case, then communities could reasonably choose quantities over prices as the control variable, as the effects are theoretically equivalent. However, given that much local consumption is of nontraded goods (locally produced and consumed housing and local government services), this explanation is not very convincing. The third explanation is that quantities are more easily observed than prices, so that zoning is easier to administer. This is reasonably convincing in the case of a restriction on capital, but less so for labor, since a wide variety of labor taxes are relatively well administered. The fourth, and most convincing, explanation is that quantity controls are legal and price controls are not. A local regulation imposing a maximum land value would almost certainly be viewed as a taking, while local zoning laws that effectively impose a maximum land value have been upheld as long as there is some justification for them based on public welfare.

Zoning as an Encouragement to Trade

Zoning reduces the quantity and types of goods and services that are produced in a municipality. However, if those goods and services are demanded by the residents (households or firms) of the municipality, then they must be obtained elsewhere. Thus, zoning is not only a barrier to trade but also an encouragement to trade.⁶⁸

This dimension of zoning again emphasizes the fact that it is inappropriate to restrict the analysis to the municipality that is implementing the zoning. Rather, the institution of restrictive zoning in one place inevitably spills over into the remainder of the municipality.

⁶⁶ See Martin L. Weitzman, *Prices vs. Quantities*, 41 REV. ECON. STUD. 477 (1974) (discussing the effectiveness of price controls and controls on quantities within a large economic organization or system).

⁶⁷ See BOGART, *supra* note 7, at 215.

⁶⁸ See MARLON BOARNET & RANDALL CRANE, *TRAVEL BY DESIGN: URBAN DESIGN AND THE NEW TRANSPORTATION PLANNING* (2000) (exploring in detail the link between local land use patterns and transportation patterns). Most intrametropolitan trade is facilitated by automobile use, whether it is trade in labor services (that is, commuting) or trade in other goods and services.

For example, a town that does not allow for "big box" retail development is simultaneously imposing the condition that the roads linking its residents to the eventual location of the retail activity will be more congested.

V. DID *EUCLID* HAVE A MAJOR IMPACT ON URBAN STRUCTURE?

No dissenting opinion was filed in the Supreme Court in *Euclid*. This leaves the prior decision *Ambler Realty Co. v. Village of Euclid*⁶⁹ as the only basis for counterfactual analysis. Suppose that the Supreme Court had upheld the lower court's opinion—would anything substantive have changed?

The key feature of the district court ruling was the requirement that local governments compensate landowners for the lost economic value of their land due to the constraint on its use imposed by zoning.⁷⁰ Edwin Mills is a modern proponent of such a land use regime.⁷¹ The prediction of most commentators, including Mills, is that zoning would be less widespread and less restrictive in such a case. In addition, the inference is that zoning would be more efficient because of the greater restraint with which it would be applied by governments.

There are two approaches to critically examining this conclusion. The first approach is a theoretical one based on the pathbreaking analysis of Coase.⁷² The second approach is more empirical and relies on an analysis of the genesis of popular support for zoning and the early experience in applying zoning.

Coase points out that if transaction costs are low and there are no endowment effects, then the efficient outcome will be achieved regardless of how property rights are assigned.⁷³ The only difference is in who will be compensating, so there is a difference in the distribution of benefits but not in the total surplus available to be divided. Fischel applies this analysis to the determination of the restrictiveness of zoning.⁷⁴ The difference between the 1924 and 1926 rulings, then, can be described as merely a reassignment of property rights with no

⁶⁹ 297 F. 307 (N.D. Ohio 1924).

⁷⁰ See *id.* at 316-17.

⁷¹ See Edwin S. Mills, *Economic Analysis of Urban Land-Use Controls*, in CURRENT ISSUES IN URBAN ECONOMICS 509, 536 (Peter Mieszkowski & Mahlon Straszheim eds., 1979).

⁷² See Ronald H. Coase, *The Problem of Social Cost*, 3 J. L. & ECON. 1 (1960) (arguing that policy options such as tax, liability, and exclusion to mitigate a harmful action of business firms are inappropriate as they do not take into account the cost involved in the system and in maintaining the system).

⁷³ See *id.* at 44.

⁷⁴ See FISCHEL, *supra* note 19, at 125-49 (arguing that suburban zoning may be too restrictive because (1) high transaction costs by legal restraints on exchange and by political process; (2) wealth effects that zoning gives to suburban areas; (3) vague definition of entitlements and problem of distinguishing good from bad motives; and (4) possibility that zoning is used to promote monopoly in local housing market).

impact on efficiency.⁷⁵ Because of the desire of homeowners to reduce the uncertain impact of mobile industry (and mobile low-income residents) on their homes, which constitute a substantial fraction of their income, a reallocation of the property rights would nevertheless have led to a substantial degree of restriction.⁷⁶ Losing the right to restrict land use except via contracts could in theory have led to even greater restrictiveness, as explicit contracts with a range of individuals might have been more difficult to negotiate and renegotiate than altering zoning legislation has proven to be.

In addition to the theoretical argument that the impact of *Euclid* might be overstated or even misconstrued, some evidence suggests the likely impact of a different adjudication of the case. This evidence is from a variety of sources, but it consistently indicates that homeowners are willing to pay for exclusion and developers are creative at finding a way to provide it. An alternative form of restriction is to use contracts between the developer and homeowners to dictate the type of structure and resident that are acceptable. These contracts are most useful in the case of newly developed "greenfields," where the developer stands to benefit from carefully arranging land use to maximize the value of the land. For example, the same upheaval in urban structure that led to the advent of zoning also led to the creation of relatively elaborate deed restrictions.⁷⁷ Developers, in fact, favored the creation of zoning laws, rather than opposing them as an imposition from an external source.⁷⁸ And homeowners showed themselves

⁷⁵ See *id.* Fischel points out that there remain reasons to think that the *Euclid* case did reduce efficiency. First, there remain substantial transaction costs in zoning, particularly because developers are restricted in their ability to directly pay cash to residents to alter zoning, instead being forced to rely on in-kind compensation. Second, it is possible that there is a substantial endowment effect, and there is evidence that the price at which someone is willing to sell is considerably higher than the price that they would pay to purchase. Thus, the almost complete license given residents under *Euclid* has substantially increased the degree of restrictiveness relative to a regime in which the property rights to control land use were more concentrated with landowners and developers. See *id.*

⁷⁶ See FISCHEL, *supra* note 3, ¶ 1-5 (arguing that homeowner's large investment and interest in home value results in increased interest and dominance in local politics decision-making).

⁷⁷ See BERNARD H. SIEGAN, *LAND USE WITHOUT ZONING* 75 (1972) (arguing that economic forces tend to make for a separation of uses even without zoning and when economic forces do not guarantee such separation, property owners will enter into agreements, such as restrictive covenants, to maintain separation); WILLIAM S. WORLEY, J.C. NICHOLS AND THE SHAPING OF KANSAS CITY 32-34, 132-34 (1990) (describing elaborate deed restrictions in the Nichols' development of Armour Hills, restricting lots to residential use with extensive building restrictions and the deed restrictions of a precursor development, Roland Park); William A. Fischel, *Zoning, Nonconvexities, and T. Jack Foster's City*, 35 J. URB. ECON. 175, 178-79 (1994) (analyzing a developer-created city and comparing its land use to places that evolved municipal zoning).

⁷⁸ See FISCHEL, *supra* note 3, ¶ 9-5 (arguing that one can interpret the evidence in Weiss as proving that developers were *unable* to accomplish their land use objectives without government assistance in the form of zoning); MARC A. WEISS, *THE RISE OF THE COMMUNITY BUILDERS* 10-12 (1987) (providing a good description of the developers' view of zoning);

willing to pay a premium for housing in restricted communities, a phenomenon that continues to the present.

The underlying argument is that regulations are only effective in constraining choices to the extent that people cannot find a way of accomplishing what they want anyway. An instructive epilogue to this section is to note that the parcel of land in question in *Euclid*, while zoned for residential use, was eventually incorporated into an auto-body plant.

VI. CONCLUDING COMMENTS: METROPOLITAN STRUCTURE IN THE TWENTIETH AND TWENTY-FIRST CENTURIES

Much of twentieth-century metropolitan development can be thought of as achieving the goal of Ebenezer Howard to create a "garden city."⁷⁹ Howard's concern was the extraordinary growth of the large cities of the late nineteenth century, and he proposed the garden city concept as a way of encouraging people to stay out of the large cities.

Howard proposed a city with a maximum population of 32,000, occupying 6,000 acres of land (with 5,000 acres reserved for agriculture).⁸⁰ The city was to be roughly self-sufficient, not only in agriculture and industry, but also in culture, with each city including a museum, parks, library, and school.⁸¹ He proposed linking the various garden cities within a metropolitan area via an interurban railway. The reason for this is not clear, however. If people are neither commuting nor buying and selling from other cities, then what purpose would the railway serve?

The urban structure we see now can be thought of as an implementation of Howard's plan, albeit with some important changes.⁸² For example, the highway has replaced the railway. The garden cities are not self-sufficient; rather they interact on a regular basis with the remainder of the metropolitan area. This is consistent with Howard's linkages and also consistent with an economic justification for those linkages. There is a combination of specialization in employment

WORLEY, *supra* note 77, at 7 (chronicling the work of one of the more famous land developers, J.C. Nichols).

⁷⁹ See EBENEZER HOWARD, GARDEN CITIES OF TO-MORROW (Faber & Faber 1946) (1902) (describing key features of a proposed garden city). See also ROBERT FISHMAN, BOURGEOIS UTOPIAS: THE RISE AND FALL OF SUBURBIA (1987) (arguing that suburban development reflected the utopian ideals of Ebenezer Howard).

⁸⁰ See HOWARD, *supra* note 79, at 50-51, 54.

⁸¹ See *id.* at 53, 58.

⁸² See FISHMAN, *supra* note 79, at ix-x (arguing that the implementation of suburban development closely reflected the ideals of Howard's utopian development movement); KENNETH T. JACKSON, CRABGRASS FRONTIER: THE SUBURBANIZATION OF THE UNITED STATES 195 (1985) (noting Howard's impact on the New Deal housing initiative called the Greenbelt Town Program).

centers and diffuse employment throughout the region. Howard's population density of thirty-two people per acre is higher than the typical gross densities of a relatively densely populated suburb by a factor of about four (20,480 people per square mile versus 5-6,000 people per square mile).

The metropolitan area that has most aggressively followed the idea of the garden city has been Phoenix, Arizona. In its 1985 General Plan, the city based its future growth around several "urban villages," which are patterned on Howard's garden cities. The plan states "[e]ach [urban village] would become relatively self-sufficient in providing living, working, and recreational opportunities for residents."⁸³ As with Howard, this idea runs afoul of the economic justification of metropolitan growth, which is to provide opportunities for mutually beneficial trade among the residents of a metropolitan area. Hence, any attempt to actually implement a consistent urban village or garden city planning structure is doomed to fail. It will either be inefficient if it succeeds at creating self sufficiency, or it will be an inefficient way of promoting the interactions among specialized parts of the metropolitan area that are the basis of the twenty-first century metropolitan economy.

CONCLUSION

This Article is more of a prolegomenon to a research agenda than a summary of a completed research program. As such, it is inevitably incomplete, but this provides the exciting prospect of filling in the gaps in our understanding. The sooner we understand the true impact of zoning on the metropolitan and national economy, the sooner we can recommend appropriate policy responses based on analysis rather than impulse and good intentions. To return to the metaphor that opened the article, it is interesting to note that the original calculations of Copernicus were actually *less* accurate than those made assuming a Ptolemaic system.⁸⁴ This gives me optimism that these halting first steps can presage great leaps in the future.

⁸³ Christopher B. Leinberger & Charles Lockwood, *How Business Is Reshaping America*, ATLANTIC MONTHLY, Oct. 1986, at 52 (second alteration in original); see also GARREAU, *supra* note 8, at 179-208 (describing the development of Phoenix and the urban village concept).

⁸⁴ See KOESTLER, *supra* note 9, at 192.

