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Commercial Land Use Regulation and Local Government Finance

By Eric A. Hanushek and John M. Quigley*

Land use regulation in American cities is pervasive. Taken together, these rules probably represent the most significant market intervention undertaken by state and local governments. Land use regulation includes a wide variety of rules governing the physical location of economic activities within jurisdictions; regulations governing the design, height, or capital intensity of commercial and industrial property; rules regarding the minimum lot sizes for residential parcels, the number of bedrooms in new dwellings or other restrictions on residential density; and rules delineating developer responsibilities for infrastructure provided in newly subdivided areas.

By international standards, regulations in the United States are adopted by rather small units of government (i.e., by towns rather than regional authorities) whose objectives are typically confined to narrowly defined geographical portions of metropolitan areas. The small scale at which regulations are promulgated, and the existence of substitutable sites within metropolitan areas for residential, commercial, and industrial activity, suggest that recognition of competition across jurisdictions is crucial to understanding the impact of land use rules as they affect the quality of life or the fiscal health of the residents of any jurisdiction. Many economic models ignore these competitive forces, concentrating instead upon the case of the regulatory monopolist. In consequence, there is considerable theoretical uncertainty about the impact of locally adopted regulations upon the utilities of local citizens or their economic wealth. (A selective review is provided by J. M. Pogodzinski and Tim Sass, 1989.)

Land use regulations in urban areas are motivated by two conceptually distinct concerns: the control of externalities and the pursuit of fiscal objectives. These mixed objectives make it more difficult to understand the effects of regulation, especially since externality arguments are notoriously difficult to confirm in empirical analyses. Fiscal arguments, on the other hand, are more easily tested.

In this paper we investigate a new but increasingly popular form of land use control: limitations on the growth of commercial property. In one instance, we provide bounds on the fiscal implications of controls on commercial property; this, in turn, bounds the magnitude of the implied efficiency gains when the land use policy is viewed as a rational choice by citizens.

I. Externality and Fiscal Zoning

The classic efficiency rationale for adopting zoning regulations is to mitigate the adverse physical consequences that some economic activity may hold for those activities conducted on neighboring sites. This argument, and the vivid references to smokestacks and laundries, goes back at least to Pigou and later to Coase; it forms the basis for rules segregating industry from residential areas. Closely related to the physical externalities regulated by zoning is the possibility of using these regulations to control social externalities, as when members of one socioeconomic group are considered more "desirable" as neighbors than are members of other socioeconomic groups. Both physical and social externalities can be modeled in a similar fashion, and the results of such models indicate the narrow static efficiency of segregation of households or land uses.

One implication of the efficiency of externality zoning is its effect upon aggregate land prices. By internalizing the external ef-

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fects associated with land use, or merely by minimizing the border between incompatible land uses, these zoning regulations increase the aggregate value of land within the community, and hence they increase the local tax base.

Fiscal zoning regulations, in contrast, are intended to increase the profitability of the local public sector directly by internalizing the pecuniary externalities that arise through the tax and expenditure system from different uses of urban land. These motives are manifest in regulations encouraging the location of those firms that produce more in tax revenues than they use in public expenditures on services. Given the reliance of local government upon property tax revenues, fiscal zoning in the residential sector typically involves the adoption of rules requiring households using public services to consume (and to pay taxes on) more real property than they would otherwise choose.

In contrast to externality zoning, it need not follow that fiscal zoning increases aggregate land prices, and such zoning certainly need not imply aggregate welfare gains. Indeed, the typical residential zoning regulation specifying a minimum lot size lowers the value of land held for residential development by eliminating the demand for smaller parcels. The profitability of fiscal zoning for a local community depends upon a comparison of tax base changes and variations in the expenditures for public services which can be attributed to the regulations.

II. Observable Effects of Zoning

As an empirical matter, it is extremely hard to sort out the pecuniary from the externality motives for zoning, and equally hard to distinguish their separate effects. Empirical evidence generally supports the conclusion that restrictive land use controls raise housing prices in communities that impose them (William Fischel, 1989), but there is little evidence that could be used to distinguish the sources of these price increases. Reductions in supply arising from zoning regulation could lead to price increases for housing as long as the demand for sites were not perfectly elastic. However, increases in

amenities arising from the control of externalities could also lead to housing price increases in response to land use restrictions.[1] Existing empirical evidence also suggests that values for vacant or agricultural land are lower at locations in proximity to jurisdictions imposing more stringent controls (Jan Bruckner, 1989).

In virtually all of these empirical analyses, zoning refers to land use restrictions in the residential sector. Little empirical analysis exists on the effects of commercial or industrial zoning on municipal revenues, and studies of the effects of externalities on housing prices have seldom included measures of congestion or agglomeration, which are presumably affected by land use regulation in the nonresidential sector.[2] (This literature is reviewed by Timothy Bartik and V. Kerry Smith, 1987.)

III. Nonresidential Zoning

During the past decade, there have been ever-more vigorous attempts to limit nonresidential development to increase fiscally profitable activities and to improve urban amenities. (See Robert Burchell and David Listoken, 1978, for a variety of methods of estimating "profitability.") This movement has been especially strong in California where additional growth is perceived to entail high environmental costs, where average incomes and the demand for urban amenity is high, where ad valorem tax rates are low (and essentially uniform), and where it is perceived that the demand for location by firms is inelastic.[3]

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[1] In this latter case, the increase in housing prices (values) would arise from an increase in the quantity of service provided.

[2] There is, however, a vast literature on the relationship between air pollution and housing prices. Presumably, levels of ambient air quality are sensitive to the locations of firms and households.

[3] Indeed, during the 1971–86 period there were 133 local initiative referenda in the State of California on proposals for nonresidential growth control, building restrictions and moritoria, and so forth. In San Francisco alone, 7 such initiatives appeared on the ballot (see California Association of Realtors, 1987).

The effect of nonresidential zoning on local public finance depends, on the one hand, on the effectiveness of regulation in enticing or repelling tax-paying businesses and, on the other hand, in the net change in public resources devoted to servicing those businesses, their tenants, customers, and employees. More generally, the effect of these regulations on citizen welfare depends also on any amenity changes associated with the regulations—variations in congestion, pollution and urban asthetics.

The welfare effects of these proposals may be quite difficult to measure, but the fiscal effects of limitations on commercial development are somewhat less elusive. We consider, for example, the fiscal effects of one dramatic case from urban California, limitations on commercial development adopted by initiative in San Francisco in 1986 (Proposition M, approved by San Francisco voters by a 50.6 percent vote). This initiative established an annual limit (950,000 sq. ft.) on new office space and regulated its distribution among buildings of varying sizes.

The direct fiscal effects of this land use restriction arise from changes in the value of commercial property, changes in the value of residential property, and from changes in service requirements and government expenditures. The key elements entering into property valuations are the effects of the restriction on commercial and industrial rents, and upon the level of employment. The capitalized stream of rents to properties provides a direct indication of property values subject to local tax. The employment patterns provide evidence on the demand for residential housing, since reduced employment will translate directly into reduced demand for city housing.

A complete analysis of rents, employment, and location decisions would require a structural model of the urban area, but there are more limited models that can be used to project the rent and employment effects. We employ two attempts to model the market for commercial property (Kenneth Rosen and Ruth Shragowitz, 1985, and Bradford Case and Deborah Gordon, 1989) to bound the incremental effects of commercial growth restrictions. These studies provide time-series

TABLE 1—EFFECTS OF PROPOSITION M ON
SAN FRANCISCO EMPLOYMENT GROWTH
AND COMMERCIAL RENTS[a]

Model	Annual Employment Growth	Annual Rent Increases
Rosen-Shragowitz	−0.9	+3.9
Case-Gordon	−0.8	−4.9

[a]Shown in percent.

estimates of commercial employment and office space, new construction, and rents in the San Francisco area. We use these models to compare rents and employment if the economy evolved under this restriction with projections made in the absence of this control over land use.

Table 1 displays our projections of differences in employment growth and commercial rent increases over the first ten years of growth controls. Both projections indicate that the growth limitation measure will have a negative effect on employment, reducing growth in office employment by approximately 1 percent per year. They diverge, however, in their estimates of the effect on rents. The estimates based on the Case-Gordon (C-G) model suggest that rents would actually be less in the constrained case; the difference in annual increase in rents, other things being equal, would amount to almost 5 percent per year. The Rosen-Shragowitz (R-S) model, on the other hand, supports the conclusion that the growth restrictions would increase office rents. The C-G analysis provides an unambiguous forecast of fiscal losses, arising from reductions in the values of both commercial and residential property. The R-S analysis, however, leaves some ambiguity, since the rise in rents is greater in the restricted case (by 3.9 percent per year). Moreover, the aggregate reductions in total office space attributable to Proposition M are less than the aggregate rent difference over the ten-year period, implying that total commercial property values increase.[4] By these estimates, the

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[4]The R-S model projects that growth in central city office space with growth controls will be 18 percent less

total fiscal effects balance residential losses against commercial gains.

The simulation results underscore the fact that actions taken by one jurisdiction within the metropolitan area lead to mobility of both households and firms, and this alters property values and the tax base.

How can these growth restrictions be rational choices by the citizens of San Francisco? The employment changes suggest that, *ceteris paribus*, demand for residential property will fall, leading to capital losses and lower fiscal capacity from that source. If commercial rents also fall (as projected by the C-G model), there is an unambiguous decline in commercial property values. Fiscal gains could then result only if the new commercial development excluded under the limitation demanded far more in services than its tax payments—enough to make up for the loss in both commercial and residential tax bases. Even with fiscal losses, the policy could still be rational, but only if the efficiency gains from controlling externalities were quite large, given the projections reported in Table 1.

If commercial rents increase (as projected by the R-S model), the picture changes somewhat. Here, the current owners of commercial property get windfall gains, and the owners of residential properties suffer windfall losses from reduced locational demands. Homeowner losses from changed employment patterns may be offset by increased net tax revenues from commercial properties (fiscal effects), and by externality reductions that might separately be capitalized into values. It is nevertheless worth noting that the clearest gains accrue to the current owners of commercial property and not to the residents who voted the policy into effect.

The overall results, while not decisive, do raise questions about the underlying rationale for new restrictions on commercial properties. They are likely to be costly on narrow fiscal grounds. Moreover, since these

restrictions apply to office space and would generally restrict white-collar employment, any externality effects presumably arise primarily from reduced congestion. These is little reason to believe, however, that growth restrictions are the least cost way of dealing with congestion, even when such externalities are sufficient to warrant direct intervention.

The fiscal effects identified here may be dampened by the sluggish response of the property tax base under California's Proposition 13, and this form of zoning may confer rents on subsets of property owners or employees. Nevertheless, rent seeking does not provide a really satisfactory explanation of the motivations underlying approval of the referendum.

IV. Conclusions

Zoning and land use policies aimed at residential properties generally can be explained as programs to enhance the property values of existing residents. This result, generally confirmed by empirical analyses, arises from combination of efficiency and fiscal effects. Policies toward commercial properties, particularly those limiting growth, are, however, much more difficult to understand from the standpoint of rational voter behavior. Since these policies reduce employment and therefore reduce housing demands, the gains must come from offsetting fiscal or efficiency factors. On the fiscal side, our limited empirical investigation questions the rational basis for these policies.

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than that projected without controls by 1999. The G-S model implies even larger space responses, amounting to a 22 percent net decline arising from growth controls.

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