MOBILE HOME ZONING PREFERENCES OF MUNICIPALITIES AND THEIR IMPACTS ON THE MOBILE HOME COMPONENT OF THE HOUSING MARKET

by

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Abstract of

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Six significant zoning exclusions and restrictions of mobile homes in
the land-use control system are identified for study: complete exclusion,
exclusion from residential districts, restriction to mobile home parks,
indirect exclusions, limitations on the number of mobile homes and parks
in a municipality, and limitations on the duration of stay.

Six hypotheses are formulated which explain the preferences of municipal-
ities to adopt one or more of the exclusions and restrictions. These
are first tested by crosstabulation and then by a linear probability
model. A ninety-six city and town sample is used. The fear of declining
property values and fiscal zoning are both substantiated as motivations
for the exclusion of mobile homes. However, the method by which mobile
homes are taxed appears to have no association with the decision to
exclude mobile homes; it is a significant determinant of the restriction
of mobile homes to parks and the restriction to nonresidential areas.

A two equation simultaneous equation model of the mobile home housing

market is constructed to analyze the impact of these land use controls on the rental market. This is later compared with the entire mobile home market. This model tends to support the conclusion that the complete exclusion of mobile homes has no significant impact on the market. The restriction of mobile homes to parks and the restriction to nonresidential areas, however, both depress the quantity of mobile homes in the market. The restriction of mobile homes to parks increases the percentage of rental mobile homes in the entire market and lowers their price. The rental market is shown to have a supply curve with negative slope.

The results are summarized in consideration of their impact on the industrialization of housing and three present trends: increased judicial supervision, state and Federal assumption of land-use controls, and the increased concurrent use of subdivision controls and the restriction of mobile homes to mobile home parks.

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A. INTRODUCTION

Introduction

Mobile homes, long ignored by both the government and the conventional

housing industry as a legitimate form of housing, received recognition

at the end of the 1960's out of political and economic necessity.

Housing institutions that were suffering from a slowdown in conventional

housing realized that mobile home production had not suffered the same

fate and was, in fact, growing. Because of this very recent date of

recognition, the young age of the industry itself, and its still limited

product, information concerning the industry is limited. Statistical

reporting on the mobile home sector of the housing industry is still

much less extensive or comprehensive than on the conventional sector. For

this reason, as much as any other, literature in this field is almost

always qualitative, and often simply supposition.

The aim of this thesis, then, is to verify certain relationships and

phenomena commonly supposed to exist in the land use control system

regulating mobile homes and the interaction of this control system with

the mobile home component of the housing market.

The author's awareness of this problem developed out of preliminary

work focused on the extent of land use controls regulating mobile homes

and their impacts on the mobile home. This work was done for the Program

in Industrialization of the Housing Sector at the MIT Urban Systems

Laboratory. Program Industrialization is a H.U.D. financed study of the

mobile home industry as an example of comprehensive industrialization of

the entire housing sector. The objective is to determine the real-
istic potential of the mobile home industry for further improving its
performance and to develop an implementing strategy.

In this context, the primary motivation of this thesis is a concern
for impacts of land-use controls on the potential of the mobile home
industry to develop as a resource capable of supplying high quality,
low-cost urban housing. The Townland proposal for Operation Breakthrough
(illustration on following page) is an example of medium density housing
within the present technological capacities of the mobile home industry.
The Townland proposal, one of the finalists selected for construction
by H.U.D., consisted of a pre-cast concrete megastructure with two story
spaces for infill with modules. Unfortunately, the Townland system,
when finally built in Seattle, was a low density development with only
nine units one level above the ground.

Mobile homes, like the conventional sector, are dependent on a complex,
inter-connected set of industries and institutions. These include Fed-
eral monetary policy, financing, property taxation, marketing, raw
material suppliers, investors and developers, labor unions, and the
builders themselves. Land-use controls are but one of these institutions
that affect the make-up of the overall package of goods and services
called housing.

The discriminatory and sometimes exclusionary nature of land-use controls
applied to mobile homes can impact the industry's potential for improving
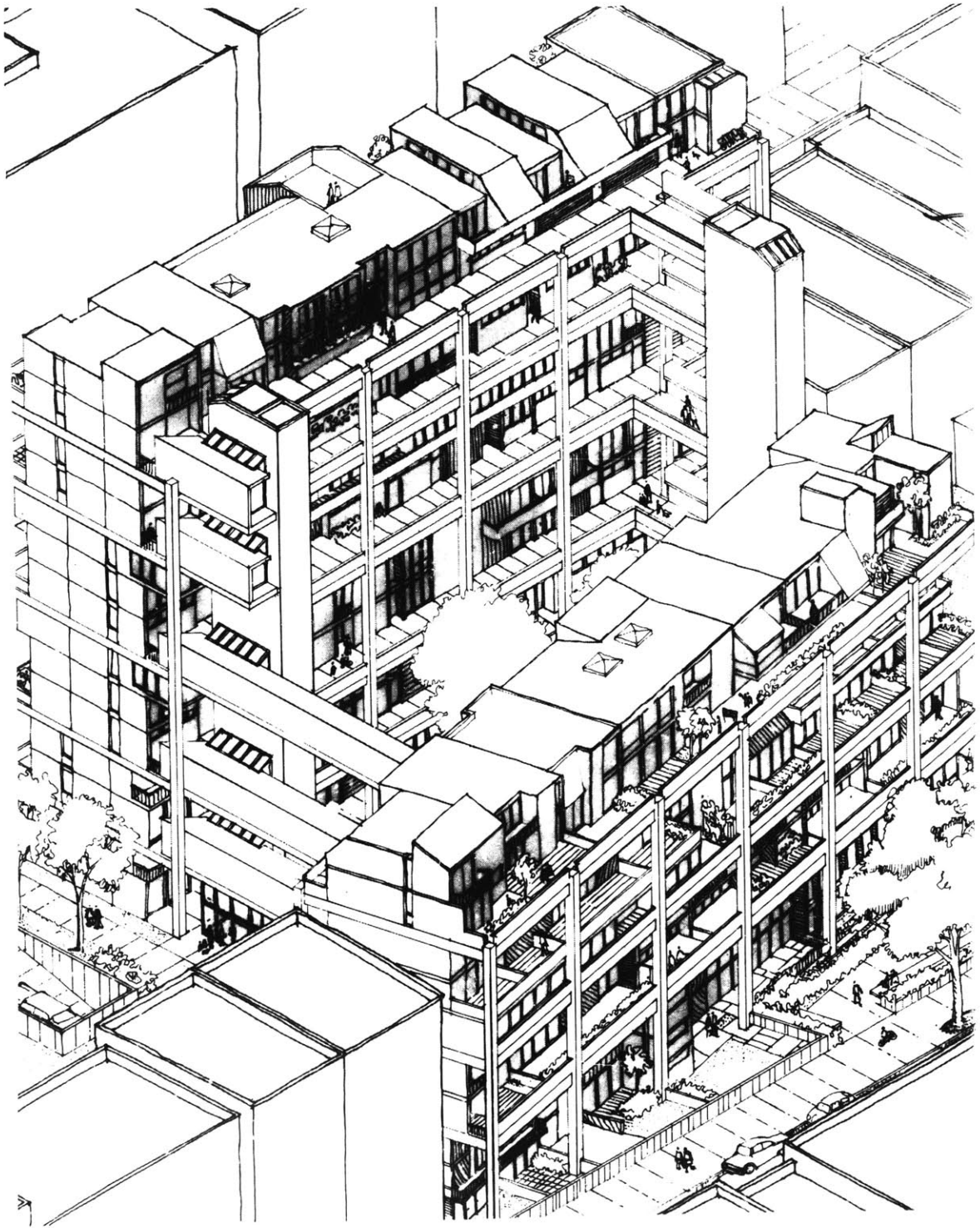
Illustration 1.   The Townland Operation Breakthrough Proposal

Source: U.S. Dept. of H.U.D., Housing Systems for Operation Breakthrough

performance in two major ways. First, by limiting the availability of
land they limit the quantity of mobile homes sold in an industry that
depends on continuous high volume operation for efficiency, thereby
affecting price, revenues, the availability of a range of product lines,
and eventually capital for research and product development. Second,
the discriminatory nature of the land-use control system may create a
product differentiation of greater extent than called for by the physical
nature of the present day mobile home. The restriction of mobile homes
to industrial and commercial areas or to marginal quality land and their
concurrent segregation from other residential neighborhoods defines the
mobile home housing package as much as the physical attributes of the
mobile home. This reduces the competitiveness of the mobile home in the
housing market, but, more importantly, it influences efforts to improve
design. What are the motivations on the part of the manufacturers to
produce high quality housing if it will be in many cases restricted to
inferior and undesirable locations. Several past attempts at product
development have been unsuccessful. The National Homes Corporation,
the industry's tenth largest producer, asked the Frank Lloyd Wright
Foundation to design a new product line. The designs were never fully
implemented, in part because it was thought the units would have had
to have been tied to a planned development of their own.

Besides the primary motivation concerning the potential of the mobile
home industry as outlined above, this thesis is relevant to two other
areas of concern. First, there has been a growing body of literature
examining the impact of subdivision controls and zoning on the cost of

housing. In addition, the use of exclusionary zoning to prevent the construction of suburban housing for low-income families has been the subject of much discussion and some litigation. The actions directed at mobile homes are a specific subset of the same land-use control system regulating conventional housing. The means by which mobile homes are regulated and especially the concerns of municipalities and the benefits of their actions are often equally present in the conventional sector and explain parallel actions.

Second, the short run impacts of the land-use control system on the mobile home housing market is of interest, notwithstanding the long term potential of the mobile home industry. The mobile home represents today a significant segment of housing construction in the United States. Likewise, the environmental and monetary costs borne by real or potential occupants of mobile homes for excesses of the land-use control system are significant. It is significant because the mobile home provides the overwhelming majority of new housing for sale under $20,000, enabling a significant segment of the population to attain the goal of homeownership. In 1972, 575,000 mobile homes were produced and shipped to dealers in all fifty states. In the same year, the U.S. Department of Commerce reported 1,309,000 single family fousing starts. Mobile home production represents 30% of the combined figure of the total year round housing stock in several states.

B. APPLICATION OF THE ZONING

SYSTEM TO MOBILE HOMES

Zoning predates the early travel trailers, predecessors of today's

mobile home, by at least a decade. It was in the context of this early

zoning, aimed primarily at the protection of the status quo of estab-

lished residential neighborhoods [1], that the first land-use regulation

of mobile homes was implemented. First developed as vacation trailers,

during the Depression the travel trailer was used as primary housing by

impoverished families when conventional housing was unavailable to them.

The initial reaction of municipalities and property owners to these

shanty-towns of travel trailers was decidedly negative: they were pro-

hibited entirely or restricted to the most undesirable and out of the

way locations.

Today, mobile homes have gradually again become a significant segment

of the housing stock, providing shelter for families who have been

priced out of conventional home ownership by the high cost of new housing.

Unfortunately, a great deal of the land-use control attitudes of the

thirties and forties regulating mobile homes still remain. Despite

positive and radical changes in the appearance and operation of mobile

homes and parks in the 1950's, the response of regulatory bodies has not

altered in a fundamental way. The mobile home has developed in a climate

of municipal and neighborhood hostility which has impeded efforts to

effect an accommodation between mobile homes and other uses of land.

While a few communities still regulate mobile homes under zoning and

subdivision ordinances substantially unchanged in the past twenty years [2],

many still do not recognize mobile homes as a bona fide setment of the

housing stock. In a 1971 national survey, it was reported that 45% of

jurisdictions fail to distinguish between travel trailers and mobile homes, today two decidedly different products, originating from two different industries.[3]

In this chapter the major exclusionary and restrictive devices applied by local communities to mobile homes are outlined; the frequency of their application is presented in the next chapter. Sample ordinances are presented to illustrate typical applications. Occasionally, legal cases are cited to provide an indication of judicial response and limits on municipal action. More detailed and exhaustive discussions can be found in Hodes and Robertson[4].

Each of the categories cited can appear in a number of forms. What follows is a categorization of a complex and varied system whose actual implementation depends on its administration, state enabling legislation, judicial response, and especially the hidden agenda behind each ordinance.

Complete Exclusion

A municipality can completely exclude mobile homes by ordinance. In California, such local ordinances are expressly authorized by statute if within the reasonable exercise of police power[5]. However, in other states, notably in Michigan and Pennsylvania, an outright ban has frequently been invalidated. For example, a Pennsylvania ordinance that was invalidated prohibited

"any person or persons from parking or locating any trailer which

is or can be used for living quarters on any lot, property, or
street within the limits of the Township of Tinicum, or to maintain
or use any trailer camp or tourist camp within the township"[6].

On the other hand, the New Jersey Supreme Court, has sustained the
validity of an ordinance prohibiting mobile homes[7], though the notable
dissenting opinion by Justice Hall has been influential in recent lit-
igation of exclusionary zoning in general. The U.S. Supreme Court
declined to hear the New Jersey Case as it has most zoning litigation
since the constitutionality of zoning was established in the late twenties.[8]
This has left a confusing web of contradictions between states on the
limits of zoning as each state court applied its own interpretation.

More frequently, intentionally or unintentionally, the complete exclusion
of mobile homes is accomplished by a failure to make any provision for
them in the zoning ordinance. Whether or not not a municipality effectively
excludes mobile homes by zoning most of its land single family
residential will often depend on the legal definition of a mobile home.
Although a conventional dwelling may be variously designated as a "house",
"building", "structure", or "detached single family dwelling", the applic-
ation of these terms to a mobile home in use, as a dwelling has frequently
been the cause of a confusing and contradictory series of litigations.

Exclusion from Residential Districts

While not explicitly prohibiting mobile homes, a zoning ordinance may
exclude them from residential districts, reflecting an original purpose
of zoning, the protection of the status quo in established residential

areas. Frequently, they will be restricted to industrial and commercial areas on the theory that a mobile home park (often regulated with trailer parks) is a business endeavor (on the order of a motel). A typical example of this is in Edmonton, Alberta where mobile home parks

> "are channeled to C-8 and C-9 districts. The stated purpose of the C-8 Highway Commercial District is "to provide sufficient land adjacent to major routes entering the city for uses serving the travelling public, and of the C-9 Major Arterial Commercial District" to provide accommodation and other services necessary for the convenience of people using certain major routes within the city".[9]

Such restrictions have generally been upheld by the judiciary. Of all the techniques in the land use control system, this is perhaps the most effective device used in protecting the single family detached residential district from the perceived costs of the mobile home.

Indirect Exclusions

Indirect exclusions are probably as common as explicit prohibition and generally have the same effect. Moreover, a community desirous of excluding mobile homes from its boundaries has a better chance of withstanding constitutional challenges if it employs discrete, indirect devices. Minimum floor area requirements, minimum lot sizes, maximum height and bulk requirements, minimum sideyards, minimum number of bedrooms and building code restrictions are examples of such devices that mobile homes often intrinsically violate.

A second class of indirect exclusions are conditional uses and special exceptions, where a community allows mobile homes after the issuance of a permit or vote of the zoning board, but in practice denies all applications for permits. This may well be a common occurrence, but differcult to document. For example, in Beaumont, Texas, a typical ordinance that allows and could encourage such action reads:

> "No trailer park shall be built, established or operated within the city except in C-1, C-2, I-1 and I-2 districts, as established in Sections 42-17, 42-18, 42-19 and 42-20, and then only by a special permit granted by the city council. In granting a special permit for trailer parks in the districts named, the city council may impose appropriate conditions and safeguards, including a specified period of time for the permit, to conserve and protect property and property values in the neighborhood."[10]

Restriction of Mobile Homes to Mobile Home Parks

This restriction is one that is often advocated by planners in the name of good planning. There is a belief that "as a general rule, mobile homes belong in mobile home parks, and the municipal zoning ordinances should assure that their location is restricted to such areas."[11]

A typical restriction is this ordinance from Wichita Falls, Texas:

> "No person shall park or occupy any mobile home outside an approved mobile home park; except, the parking of only one mobile home behind the building setback lines of a platted lot is permitted providing no living quarters shall be maintained in such mobile

home while such mobile home is so parked or stored. A mobile home
may be occupied for business or residential use outside a licensed
mobile home park when its wheels are removed and when mounted upon
a permanent type foundation and as such shall conform to all appli-
cable requirements of the building, electrical and plumbing codes
and all other applicable codes and ordinances of the City. Mobile
homes used as field offices during construction or mobile homes
displayed for sale on mobile home sales lots and mobile home manu-
facturing plants are permitted."[12]

It is difficult to judge the benefits or the costs of such action.
Traditionally justified on health and sanitation grounds, it is frequently
used today as a method of enabling more effective government control.
The perceived difficulty of discovery for taxation purposes is often
cited. Left unmentioned is the threat of mobile homes locating in conven-
tional neighborhoods and affecting property values if not confined to parks.

The impact of this restriction on mobile home dwellers is also difficult
to judge. By choice or necessity most do live in mobile home parks.[13]
Two thirds of the new mobile homes sold in 1968 were placed in a mobile
home park.[14] Johnson has demonstrated that for certain age and socio-
economic groupings, especially the white working class retired, the mobile
home park is an ordered, close-knit community, preferred over the outside
world.[15]

Restriction on the Number of Mobile Homes and Parks in a Municipality

Every community that permits mobile homes within its borders does, in
theory, restrict the number of mobile homes in that community. The
amount of suitable land zoned to be available for mobile homes and mobile
home parks, together with density or lot size controls when they exist,
places an upper limit on the number of mobile homes. A theoretical
limit also occurs, of course, with the regulation of conventional
housing; what is of interest is when these controls are overly restrictive
and unreasonable.

Occasionally, a municipality may set an upper limit on the number of mobile
homes in a park regardless of size. Municipalities in Wisconsin are
expressly authorized to "limit the number of units, trailers or mobile
homes that may be parked or kept in any one camp or park."[16]

In Town of Yorkville v. Fonk[17] a Wisconsin town was sustained in its
attempt to limit a mobile home park to twenty-five units on the grounds
that it bore a reasonable relationship to the welfare of the school
district. The Court pointed out that the school district could not
adequately plan for the future in the absence of the assurance that
the number of mobile homes would remain relatively constant and that
the ordinance was reasonably intended to stabilize the problems created
by the transient nature of mobile homes so that the school district
may cope with them. This argument is meaningless given today's non-
transient mobile home. However, the speed   by which mobile homes can

be sited in a community, when compared with conventional housing, does make this argument relevant today.

It should be pointed out that as restrictions become more severe, a limit of complete exclusion of mobile homes is reached when the mobile home park owner or developer finds it uneconomical to operate.

Limitation of Stay

An anachronism from the days of transient vacation trailers, limitation of stay ordinances remain and are applied to mobile homes. Ordinances limiting the period during which mobile homes may remain within a municipality take a number of forms, including a prohibition of habitation in excess of a stated time; requirement of a non-renewable permit to occupy; and imposition of stringent building provisions upon mobile homes remaining longer than a certain time. Formerly the period of limitation was sixty or ninety days. More recent ordinances have limited the stay of mobile homes to a month or twenty-eight days, or even as little as seventy-two hours. Sooner or later, the time limit becomes so short as to be an outright prohibition.[18] Indeed, considering today's mobile home, almost any time limit effectively excludes the use of most mobile homes as residences entirely.

Limitation of stay ordinances have been based on health and sanitation grounds and, also, have been based on the desire to promote transiency in mobile homes. It has been felt that the use of mobile homes for permenent residences is a cause of slums, and that any method forcing the

the transiency of mobile homes is in the public interest. It is difficult to see how forcing transiency on the mobile home dweller benefits him; while the city still has the mobile home park to contend with, as one trailer is forced to leave another can take its place. Many individuals have yet to understand the metamorphosis of the vacation trailer into the mobile home.

Summary

The preceding six categories of restriction are implemented in several ways. One of the most important distinctions is the case where mobile homes or mobile home parks are allowed as a right and the case where they are allowed as a conditional use, special exception, or in a floating zone. While this can be used as a method of exclusion (page 17), even when it is not it at least discourages development and places costs on the owner or developer seeking approval. This is often a beneficial situation for the municipality and perhaps the mobile home occupant, as the park developer can be forced to build a higher quality park than required by the market to secure the municipality's approval. The mobile home dweller is forced to pay for improvements he would not have otherwise required; his benefit is questionable, and depends on the public benefit of the municipality.

Subdivision controls have only recently been applied to mobile home developments as the mobile home subdivision (where one owns the land instead of renting it as in a mobile home park) is of fairly recent origin. Laws governing subjects such as density, design, and landscaping in mobile

home parks are more apt to be found in state laws concerned with health and sanitation requirements of parks. The states have for the most part also pre-empted the municipalities in the area of building codes governing mobile home construction standards. However, mobile homes can often still be subject to local building code standard regulations including minimum floor area per occupant, minimum volume requirements, and others discussed on page 17.

Footnotes for Chapter B

1. Douglas Commission, Building the American City. (1968) at 204.

2. Frederick Bair, "Modular Housing, Including Mobile Homes: A Survey of Regulatory Practices and Planners' Opinions." A.S.P.O. Service Report No. 265 (Jan. 1971) at 37.

3. Ibid. at 17.

4. Barnet Hodes and G. Gale Robertson, The Law of Mobile Homes. (2nd ed., 1965).

5. Cal. Health and Safety Code, Sec. 18010.

6. see especially Commonwealth vs. Amos, 44 Pa. D. & C. 125 (1941).

7. Vickers vs. Township Committee of Gloucester Township., 37 N.J. 232, 181 A. 2d 129 (1962).

8. Village of Eculid v. Ambler Realty, 276 U.S. 365 (1926), and Nectow vs. City of Cambridge, 277 U.S. 183 (1928).

9. The City of Edmonton Planning Dept. Mobile Homes in the Urban Environment. (1968) at 10.

10. Excerpt from City of Beaumont Zoning Ordinance, Section 42-25.1.

11. Texas Municipal League, The Regulation of Mobile Homes in Texas Cities. (Feb. 1971) at 42.

12. Macomb County, Michigan, Mobile Home Parks (1969) at 6.

13. Dept. of H.U.D. Housing Surveys parts I & II UD.MP-72. (1968) at 96.

14. Sheila Johnson, Idle Haven: Community Building Among the Working Class Retired. (1971).

    see also John Meyers, Social Solidarity in a Mobile Home Park: the Effects of Discrimination (unpublished Master's thesis, Cornell, Sept. 1971).

15. City of Wichita Falls: Excerpt from Ordinance No. 2554, Section 30-2, "Location of Mobile Homes Outside of Mobile Home Parks."

16. Wisconsin State, Sec. 66.058 (z) (b)

17. 274 Wis. 153, 79 N.W. Zd 666 (1956), 3 Wis. Zd 371, 88 N.W. Zd 319 (1958).

18. Hodes and Robertson, op cit, at 66.

C. ZONING PREFERENCES

OF MUNICIPALITIES

Frequency of Use

The inherent power of the state to zone has largely been delegated to
localities through various zoning and planning enabling acts. As a con-
sequence, there are over ten thousand zoning ordinances of varying scope
and purpose in this nation.[1] Information regarding the zoning ordinances
in the nation is incomplete, unwieldy, and often simply not available.
Further, the status of mobile homes in these ordinances is obscured by the
manner in which mobile homes are regulated and defined. Nevertheless,
there are a small number of useful studies available on a state and region-
al basis.[2]

This information has recently been complemented by the Industrialized
Housing Program at M.I.T. when the mobile home zoning practices of muni-
cipalities in each state was surveyed in 1973.[3] An appropriate official
in each state government or regional trade association was contacted
through correspondence and personal interview and asked to provide
appropriate information available on the status of land use controls con-
cerning mobile homes in his state. The information received ranged,
depending on the state, from reliable surveys that had previously been con-
ducted by state organizations to knowledgeable estimates by state planning
individuals and trade association officials.

Of the six types of land use controls introduced in the preceding chapter,
adequate data has been secured on only three of them to be of further
interest in the following analysis. The limitation of stay restriction

probably occurs or is enforced very infrequently. It is left over from the early days of mobile home development. Similarly, information on the frequency of the application of indirect exclusions and restrictions on the number of mobile homes and parks in a municipality is quite difficult to obtain, partly because these restrctions are often an implicit attempt at exclusion where an explicit ban is neither possible nor desirable.

The frequency of use of the three remaining land use controls developed earlier are reviewed below. These three controls are the complete exclusion of mobile homes, the restriction of mobile homes to mobile home parks, and the restriction of mobile homes to non-residential areas. These are the most often used land use controls affecting mobile homes and are thought to have the greatest impact.

Complete Exclusion

The fraction of municipalities in a state excluding mobile homes ranges from zero to 95% (New Jersey). Table 1 shows the geographical distribution of the frequency of the use of exclusionary legislation. It displays the mean percentage of complete exclusion for states in a region or district. It can be seen that the states on the eastern seaboard have a much larger percentage of their municipalities excluding mobile homes than the rest of the country. The average percentage of municipalities that exclude mobile homes in a Northeastern state is 40%. A cautionary note is in order: this is not the same as the percentage of municipalities in a region banning mobile homes. Also, seeming low percentages can be misleading. For example, Colorado has only one percent of its muni-

TABLE 1 Mean Percentage by Each Census Region and Distric of Municipalities in a State that Employ a Specific Land Use Control - All figures are in percentages.*

	ALL MUNICIPALITIES		ALL MUNICIPALITIES ALLOWING MOBILE HOMES	
	COMPLETE EXCLUSION	RESTRICTED TO MH PARKS	RESTRICTION TO MH PARKS	EXCLUSION FROM RESIDENTIAL AREAS
NEW ENGLAND	37.5	11.9	36.5	14.5
MIDDLE ATLANTIC	72.5	7.5	51.0	94.0
Northeast	46.3	10.8	40.2	34.4
EAST NORTH CENTRAL	18.3	38.3	50.6	48.8
WEST NORTH CENTRAL	3.1	45.5	48.5	6.1
Northcentral	8.6	42.8	49.3	21.6
SOUTH ATLANTIC	16.4	58.8	72.6	27.4
EAST SOUTH CENTRAL	5.3	14.5	44.8	8.8
WEST SOUTH CENTRAL	0.0	30.0	30.3	25.0
South	10.9	42.0	58.6	21.7
MOUNTAIN	1.7	21.7	32.6	3.2
PACIFIC	18.8	38.5	51.1	18.3
West	8.5	28.4	40.0	9.2
U.S.A.	16.3	33.3	48.4	21.1

* no data available for Pennsylvania, Arkansas, Louisiana, Michigan, Idaho, Nevada, and Oregon

Source: Program in the Industrialization of the Housing Sector, M.I.T. Urban Systems Laboratory.

cipalities excluding mobile homes; but this one percent includes Denver, which accounts for thirty percent of Colorado's population. The data is displayed this way for lack of more information. Total land area excluding mobile homes or total population excluding mobile homes would have been more informative but cannot be derived from this data.

Restriction to Mobile Home Parks

The frequency of the restriction to mobile home parks is summarized in the same manner in the second column of Table 1. The absolute percentage of this restriction is misleading when compared between states without considering the number of municipalities that do not exclude mobile homes. For example, three to four percent of both New Hampshire's and New Jersey's municipalities require mobile homes to be in parks. Yet this represents 80% of all New Jersey municipalities allowing mobile homes and only 3% of the New Hampshire municipalities that allow mobile homes.

The percentage of all municipalities in a state allowing mobile homes that require location in a mobile home park is shown in the third column of Table 1. The use of this device displays less of a pattern and range than does the complete exclusion of mobile homes. It ranges from 40% to 50% among the four regions, while complete expulsion varies from 9% to 46%.

Exclusion from Residential Areas

The incidence of exclusion from residential areas or restriction to

industrial-commercial areas is also summarized in Table 1 in a similar manner. The Middle Atlantic states have a exceedingly high figure, a mean of 94%. The East North Central States also have a high figure, though there is a greater amount of variance in this sample.

Intrastate Distribution of Frequency

To accurately interpret the preceding one must understand the pattern of restriction and exclusion inside the state. There are several studies helpful in this task. One done by the state of Illinois and another done for the American Society of Planning Officials are reviewed in the fol - lowing section.

Mobile homes and mobile home parks are generally restricted more often in urban situations than in rural. A variety of factors, but especially land economics and the mobile home's inherent low density configuration, are probably responsible. As shown below, urban and suburban areas are likely to exclude mobile homes through zoning and/or restrict them to commercial or industrial zones whereas rural areas are not as likely to engage in such exclusionary practices.

The results of an Illinois survey of officials and lawyers involved in zoning are shown in Table 2. This response can be interpreted as par- allel to the percentage of municipalities used in the previous tables.

"What would appear of most interest in Table 2 is the difference be- tween urban and rural with respect to residential and multifamily residential zones. First, comparing on the basis of total cases (612),

TABLE 2

Urban or Rural Location by Type of Zone Mobile Home Permitted In

	Location			
	Urban (%)		Rural (%)	
Type of Zone Permitted In	of Col	of Total	of Col	of Total
Commercial	17.3	6.4	15.8	10.0
Light Commercial	11.1	4.1	11.7	7.4
Industrial	16.8	6.2	11.1	7.0
Light Industrial	20.4	7.5	11.1	7.0
Residential	11.5	4.2	17.4	10.9
Multi-family residential	12.7	4.7	15.8	10.0
Agricultural	10.2	3.8	17.1	10.8

Source: Illinois Zoning Laws Study Commission

rural respondents were twice as likely to report mobile homes in residential zones (4.2% urban, 10.9% rural). The same held for multifamily dwellings (4.7% urban, 10% rural). Urban area respondents indicated mobile homes were most prevalent in light industrial districts (20.4%), commercial (17.3%) and industrial (16.8%). Rural area respondents overall were more evenly spread between residential (17.4%), agricultural (17.1%), multi-family residential (15.8%) and commercial (15.8%).

Thus, from figures based on both column and totals, it appears that urban areas are more exclusive where mobile homes are permitted, if permitted at all. Commercial districts for both urban and rural respondents seem to be a compromise district."[4]

The results from a survey, conducted by Fredrick Blair for the American Society of Planning Officials Planning Advisory Service, at 287 jurisdictions selected from subscribers of A.S.P.O.'s Planning Advisory Service, presents the pattern of exclusion of mobile homes clearly. Mobile homes on individual lots, in mobile home parks, and in mobile home subdivisions (where one owns a lot instead of renting one), are distinguished. The survey goes beyond a mere distinction between urban and rural locations; they are disaggregated to central city, urban county, suburban city, rural county and independent city. See Table 3. It is interesting to note the similarities between the regulation of individual lots and subdivision; mobile home subdivisions are excluded almost as often as mobile homes on individual lots. The county is less restrictive than the adjacent city in urban, suburban and rural situations, for all three forms of mobile

TABLE 3

Mobile Homes Excluded on Individual Lots, in

Parks, and in Subdivisions by Type of Jurisdiction

Jurisdiction		Completely Excluded
Central city:	Parks	18.9%
	Subdivisions	50.0
	Individual lots	69.1
Urban county:	Parks	8.7
	Subdivisions	34.2
	Individual lots	33.3
Suburban city:	Parks	29.0
	Subdivisions	73.8
	Individual lots	80.0
Suburban county:	Parks	21.7
	Subdivisions	50.0
	Individual lots	47.8
Independent city:	Parks	19.7
	Subdivisions	61.2
	Individual lots	75.4
Rural county:	Parks	13.6
	Subdivisions	33.3
	Individual lots	25.0
Total:	Parks	19.7
	Subdivisions	53.6
	Individual lots	61.1

Source: Adapted from A.S.P.O. Planning Advisory Service Report no. 265.

home siting.   Also, the suburban city and county are much more exclu-
sionary than their urban and rural counterparts; the independent city
is more restrictive than the central city, while the rural county about
equals the urban county, but note: rural counties often restrict parks
while urban counties do not, and urban counties are more likely to res-
trict mobile homes on individual lots than are rural counties.

Formulation of Municipal Preferences

The remainder of this chapter is devoted to the development of six hy-
potheses explaining the preferences of municipalities in the application
of zoning to mobile homes and the testing of these hypotheses. Several
authors have attempted to explain why municipalities adopt a particular
zoning ordinance regulating mobile homes. For the most part, the litera-
ture usually is theoretical, quite general and often only suppositional.
Margaret Drury suggests that

> "usually, the reason for opposition to mobile home parks is grounded
>
> in fears that property values in the surrounding areas will decrease.
>
> This fear developed, quite understandably, because of the image people
>
> held of the first parks....Opposition also grows out of a fear of
>
> increased taxes, because more services will be needed if mobile home
>
> parks are allowed."[5]

The Douglas Commission presents two slightly different arguments.

> "The exclusion of mobile homes in large part reflects a stereotyping
>
> of their appearance and of their occupants. Many see mobile homes
>
> as unattractive and occupied by people who do not take care of their
>
> homes or neighborhood. Such images are often derived from viewing

mobile homes in the midst of industrial districts, to which they are
so often relegated. Moreover, there are sometimes fiscal reasons
for exclusion in addition to those generally applicable to housing
which might accommodate low and moderate-income families. In many
areas mobile homes are not taxable as real property. And in some
States they are not subject to local personal property taxes be-
cause of special State levies, the imposition of which may exempt
them from local taxes. In New York State, mobile homes are taxable
as real property, and the fiscal motive for exclusion is accordingly
reduced. The high exclusion rate in New York (over 50%) may thus
indicate an even greater amount of exclusion in other States."[6]

Similarly, Anderson states that

"Mobile homes do not look like conventional dwellings. This dif-
ference in appearance is sufficient to persuade many municipalities
that a mobile home will depress property values....Because many
mobile homes can be sited rapidly and in a relatively small area,
they are capable of imposing a sudden and severe load on all
municipal facilities....(mobile homes) are regarded as freeloaders
and efforts are made to exclude them or to confine them to the
least desirable land in the community."[7]

The preceding arguments as well as others are postulating a rational
decision-making process on the part of municipalities, usually through
city councils and planning boards, that reflects the costs and benefits
of mobile homes at the municipal level and fails to consider the metropo-
litan and regional impacts of their actions. This is usually aimed at

protecting property values, the level of the property tax, and municipal
budget. Most make no distinction, however, between the complete exclusion
of mobile homes and other restrictive measures such as the exclusion from
residential areas and the restriction to mobile home parks. None dis-
tinguish between what may be different motivations behind the various
exclusions and restrictions.

Of the three quotes, the Douglas Commission has one of the most explicit
arguments. They suggest that, in states where mobile homes are not sub-
ject to real estate or personal property taxes, a municipality's propen-
sity to exclude mobile homes is greater than it otherwise would be. There
are two explanations for such a relationship. The first is a result of
structural difference between the two methods of taxation. Real estate
and personal property taxes are paid directly to the municipality by the
mobile home owner while vehicular license fees or special mobile home
fees are most often paid to the state or county. They are received by
the municipality on paper in the midst of other intergovernmental
assesments and disbursements of funds(such as the cherry sheet in Mass-
achusetts). The municipalities, seeing a direct fiscal cost for local
services for mobile homes and an indirect revenue source, make an emotional
decision to exclude mobile homes.

The second explanation gives more credit to the intelligence of citizens
and municipal actions. The real estate tax and personal property tax will
usually provide much higher revenue levels than the license or fee. While
there is argument over whether or not mobile homes when taxed as property

are a net fiscal cost or benefit, they more closely approach a net benefit
when subject only to typically smaller vehicular license fees. If
one assumes that one of the considerations behind zoning is the fiscal impact
of various land uses, then the exclusion of mobile homes in municipalities
where mobile homes are not subject to real estate and property taxes is a
rational and understandable action.

The last sentence of Drury's reasoning also suggests that mobile homes
are excluded as a result of fiscal zoning. They are perceived as not paying
their "fair share" of taxes in consideration for the municipal services
they "consume" and are, therefore, excluded to protect the municipal budget
and out of fears of rising property taxes. If this is accurate, then it
will be true to the extent of a municipality's dependence on the property
tax for revenue. In localities where sales, income and other taxes are
a significant portion of its revenue, its motivation to engage in such
fiscal zoning is correspondingly reduced.

If the exclusion of mobiles homes is the result of fiscal zoning, one other
relationship may be observed. While the cost of most municipal services
is difficult to assign to specific users, the expenditures on schools
can conviently be so assigned. Since this is also a large portion of a
community's expenditures, sometimes over half, it is often applied as an
easily understood yardstick when a municipality considers the impacts of
alternative land uses. Multifamily dwellings are often excluded or restrict-
ed to one bedroom units for this reason. Since mobile homes are also seen

to be dense land users, the percentage of a municipality's expenditures spent on schools would then by positively correlated with its propensity to ban mobile homes for fiscal concerns. This would be true for two reasons. First, a few municipalities that are predominately retirements communities (such as those in Florida) would have smaller school budgets and less need to engage in fiscal zoning. Second, municipalities that are not directly responsible for raising money for schools would not be immediately concerned with the school budget. In cases where schools are the responsibility of an autonomous school district with its own powers to raise m oney, the local governments, while ultimately affected, are not as strongly motivated to concern themselves with the impact of their actions on the school population.

Mobile homes are thought to be excluded for reasons other than fiscal. The fear of depressed property values and the desire to live among individuals of equal socio-economic status are often cited. As occupants of mobile homes are for the most part in low-income brackets, the wealthy communities are more likely to exclude mobile homes than the less wealthy. This does not negate the observation that the exclusion of low-income housing may be what insures a municipality's wealth in the first place. It does provide a test for the socio-economic exclusion, and when wealth is measured by the median value of single family dwellings in the community, it provides a possible test for the property value argument, if one assumes that any decrease in property value due to mobile homes not being excluded is not extreme. While not ruling out an individual negative effect, a substantial change in the median value is not expected.

The Anderson quote presents a reason that often appears in legal argu-
ments (page 16) justifying restrictions.   "Because (mobile homes) can
be sited rapidly and in a relatively small area, they are capable of
imposing a sudden and severe load on all municipal facilities." This
is difficult to test in the scope of the following analysis. Municipali-
ties experiencing rapid growth would be more apt to exclude mobile homes,
when each of the previously mentioned reasons would be more immediate
and the threat of mobile homes establishing themselves more prominent.
This will be true if one assumes mobile homes are not an important com-
ponent of growth when the ordinance was passed or amended. This is
true in most municipalities.

There is one further reason for excluding mobile homes. They may be
excluded where they would be unable to compete economically with other
land uses, such as dense cities where land values dictate more dwelling
units per acre than the traditional mobile home can provide. Though
there may be no need to exclude mobile homes, (since in most cases they
will not   be able to locate there anyway) they may still be excluded
on paper since one view of the purpose of zoning is to correct market
imperfections. An area can be zoned for commercial or multi-family uses,
excluding mobile homes,to insure the highest and best use of the land,
increasing the value of the land at the same time.

In summary, six hypotheses have been constructed as indicators of underly-
ing concerns governing municipal action:

H1: A municipality will have a greater propensity to exclude mobile homes if it is in a state where mobile homes are not subject to the property tax.

H2: A municipality will have a greater propensity to exclude mobile homes if most of its revenues are dependent on the property tax.

H3: A municipality will have a greater propensity to exclude mobile homes if a significant amount of its expenditures goes for schools.

H4: A municipality will have a greater propensity to exclude mobile homes if it has high per capita wealth.

H5: A municipality will have a greater propensity to exclude mobile homes if it is experiencing rapid growth.

H6: A municipality will have a greater propensity to exclude mobile homes if it has a high population density.

Data and Methodology

The sample used to test the hypotheses consists of 96 cities and towns above 25,000 in population. They are rather heavily biased toward the more restrictive East, consisting of observations from Connecticut, Rhode Island, Massachusetts, New Hampshire, New Jersey, Virginia, Vermont, Oregon, Florida, Maine, and North Carolina.

This is far from an ideal sample and is used by necessity not by choice. It is derived from the national survey and the state and regional studies mentioned at the beginning of this chapter on page 26. It consists of every city and town whose zoning practices are known from these sources where observations on the other variables are available. The names of the cities and towns are listed on Table 14, page 17.

An explanation of each variable that is used and its name follow. The
data source is listed in the appropriate footnote.

H1 TAXATION A nominal variable of two categories: <u>property tax</u>,
when the mobile homes in a municipality are subject to a real-estate
or personal property tax; and <u>license system</u>, when mobile homes in
a municipality are subject to a license or special fee.[8]

H2 REVENUE The percentage of a municipality's revenue that is a
result of the property tax, excluding inter-governmental transfers.[9]

H3 SCHOOLEX The percentage of a municipality's expenditures devoted
to schools.[10]

H4 WEALTH The median value of single family dwellings in a municipality.[11]

H5 GROWTH Population growth, percentage over 1960-1970.[13]

H6 DENSITY Population density per square mile.[13]

The hypotheses, framed in terms of complete exclusion, are first tested in
two by two tables. (Municipal preferences in restricting mobile homes to
mobile home parks and to non-residential districts, along with further
analysis of complete exclusion follow in later sections of this chapter.
The variables were first dichotomized and then tabulated against the ex-
clusion or non-exclusion of mobile homes. These tables (no.4 through 9)
are shown on the following pages.

There are four numbers in each cell. The first is the absolute frequency
of the occurrences of the event. In the first table (no.4), eighteen
of the ninety-six municipalities in the table operate under a property
tax system and do not exclude mobile homes. The second number is the

percentage of all observations of the row that are in that cell. For
example, in the same table 41.9% of all the municipalities that operate
under a property tax system do not exclude mobile homes (18 of the 43
observations in that row are in that cell). The third number is the
column percentage. 38.3% of all municipalities not excluding mobile
homes operate under a property tax system (18 of the 47 observations
in that column in that cell). The fourth number is the total percen-
tage. 18.8% of the municipalities operate under a property tax system
and do not exclude mobile homes. The eighteen observations represent 18.8%
of the total sample of 96 in the table.

Three statistics are printed below each table. The first, Chi Square, is
used to test the null hypothesis of independence. At a 95% level of
confidence, this can be rejected when Chi-Square is above 3.841. This
does not measure the degree of association but only the chance of the
observed distribution occurring if the variables really are independent.
At the 90% level, Chi-Square will be 2.706 and at the 99% level it is
6.636. The second statistic is phi which is a measure of the extent
to which a table displays mutual association. It ranges from 0,
when there is no relationship between the two variables and 1, when
the relationship is perfect. The third, the contingency coefficient,
varies between 0 and .71. It also measures the degree of association,
and has the property of remaining relatively constant in a bivariate
normal distribution if the variables are broken up into more discrete
categories.

Table 4. Crosstabulation of TAXATION, method by which mobile homes are
taxed in a municipality, by BAN, whether or not a municipality
excludes mobile homes.

```
                        EAN
              CCLNT   I
              ROW  PCT  IDCESN'T   CCES          RCW
              COL  PCT  IEXCLUDE   EXCLUDE        TOTAL
              TOT  PCT  I          I          I
TAXATICN      --------I----------I----------I
                       I     18   I     25   I    43
    PRCPERTY TAX       I   41.9   I   58.1   I   44.8
                       I   38.3   I   51.0   I
                       I   18.8   I   26.0   I
                      -I----------I----------I
                       I     29   I     24   I    53
    LICENSE SYSTEM     I   54.7   I   45.3   I   55.2
                       I   61.7   I   49.0   I
                       I   30.2   I   25.0   I
                      -I----------I----------I
              CCLUMN         47         49        96
               TOTAL       49.0       51.0     100.0

CCRRECTED CHI SQUARE =        1.C9791     WITH 1 DEGREE OF FREEDCM
PHI =      0.10694
CCNTINGENCY CCEFFICIENT =     C.10634
```

Table 5. Crosstabulation of REVENUE, percentage of municipal revenues
derived from property tax, by BAN, whether or not a munici-
pality completely excludes mobile homes.

```
                            EAN
                 CCUNT   I
                 ROW PCT ICCESN'T   CCES       RCW
                 COL PCT IEXCLUCE   EXCLLDE    TCTAL
                 TCT PCT I          I        I
REVENUE          --------I--------I--------I
                         I    22  I     5  I     27
    BELCW S5%            I  81.5  I  18.5  I   28.1
                         I  46.3  I  10.2  I
                         I  22.9  I   5.2  I
                 -I--------I--------I
                         I    25  I    44  I     69
    ABOVE S5%            I  36.2  I  63.8  I   71.S
                         I  53.2  I  8S.8  I
                         I  26.0  I  45.8  I
                 -I--------I--------I
                 CCLUMN      47       49        S6
                 TOTAL     4S.C     51.0     100.0
```

CORRECTEC CHI SQUARE =   14.14160   WITH 1 DEGREE CF FREEDCM
PHI =   0.38381
CCNTINGENCY CCEFFICIENT =   C.35832

Table 6. Crosstabulation of SCHOOLEX, percentage of municipal expenditures spent on schools, by BAN, whether or not a municipality completely excludes mobile homes.

```
                        EAN
             CCUNT   I
             ROW PCT ICCCFSN'T   CCES           RCW
             COL PCT IEXCLUDF    EXCLUDE        TCTAL
             TCT PCT I           I           I
SCHOOLEX     --------I--------!--------I
                     I     33 I     15 I         48
  EELCW 4C%           I   68.8 I   31.3 I       5C.C
                     I   70.2 I   30.6 I
                     I   34.4 I   15.6 I
                    -I--------I--------I
                     I     14 I     34 I         48
  ABCVE 4C%           I   29.2 I   7C.8 I       5C.C
                     !   29.8 I   69.4 I
                     I   14.6 I   35.4 I
                    -I--------I--------I
             CCLUMN       47       49           96
              TOTAL     49.0     51.0         100.C
```

CCRRECTEC CHI SQUARE =   13.5C586   WITH 1 DEGREE OF FREEDCM
PHI =   C.37508
CCNTINGENCY COEFFICIENT =   C.35119

Table 7. Crosstabulation of WEALTH, median value of a single family
dwelling in a municipality, by BAN, whether or not a muni-
cipality completely excludes mobile homes.

```
                       BAN
           CCUNT    I
           RCW  PCT IDCESN'T   CCES          ROW
           COL  PCT IEXCLUDE   EXCLUDE       TOTAL
           TOT  PCT I          I          I
WEALTH        -------I--------I--------I
                     I    35  I    16  I     51
   BELOW  18,500     I  68.6  I  31.4  I   53.1
                     I  74.5  I  32.7  I
                     I  36.5  I  16.7  I
                    -I--------I--------I
                     I    12  I    33  I     45
   ABOVE  18,50C     I  26.7  I  73.3  I   46.9
                     I  25.5  I  67.3  I
                     I  12.5  I  34.4  I
                    -I--------I--------I
           CCLUMN        47       49         96
           TOTAL       49.0     51.0      100.0
```

CORRECTED CHI SQUARE =   15.20675   WITH 1 DEGREE OF FREEDOM
PHI =   C.39800
CCNTINGENCY COEFFICIENT =   C.36979

Table 8.   Crosstabulation of GROWTH, percentage growth in municipal
            population, 1960 to 1970, by BAN, whether or not a munici-
            pality completely excludes mobile homes.

```
                    EAN
          CCUNT   I
          ROW PCT IECESN'T   CCES       RCW
          COL PCT IEXCLLDE   EXCLLDE    TOTAL
          TGT PCT I          I        I
GRCWTH    --------I----------I--------I
                  I      2C  I      31 I     51
  BELCW 8%        I    39.2  I    60.8 I   53.1
                  I    42.6  I    63.3 I
                  I    20.8  I    32.3 I
                  -I----------I--------I
                  I      27  I      18 I     45
  ABOVE 3%        I    60.C  I    40.0 I   46.9
                  I    57.4  I    36.7 I
                  I    28.1  I    18.8 I
                  -I----------I--------I
          CCLUMN       47         49       96
           TOTAL     49.0       51.C    100.C
```

CCRRECTEC CHI SQUARE =   3.34279   WITH 1 DEGREE OF FREEDCM
PHI =   0.18660
CCNTLNGENCY CCEFFICIENT =   C.18344

Table 9.   Crosstabulation of DENSITY, municipal population density
per square mile, by BAN, whether or not a municipality
completely excludes mobile homes.

```
                        EAN
              COUNT   I
              RCW PCT IDCESN'T   CCES          RCW
              COL PCT IEXCLUDE   EXCLUDE        TOTAL
              TCT PCT I          I          I
DENSITY       --------I----------I----------I
                      I      39 I      23 I       62
  EELCW 4700          I   62.9 I   37.1 I     64.6
                      I   83.0 I   46.9 I
                      I   40.6 I   24.0 I
              -I----------I----------I
                      I       8 I      26 I       34
  ABOVE 4700          I   23.5 I   76.5 I     35.4
                      I   17.0 I   53.1 I
                      I    8.3 I   27.1 I
              -I----------I----------I
              CCLUMN       47         4S          96
               TOTAL     49.0       51.0      100.C
```

CCRRECTEC CHI SQUARE =   12.C9261   WITH 1 DEGREE OF FREEDCM
PHI =   C.35491
CCNTINCENCY COEFFICIENT =   C.33447

Crosstabulation with Exclusion

Table 4 lends little support to the first hypothesis. One cannot reject the null hypothesis of independence between the taxation system and the exclusion or non-exclusion of mobile homes even at the 90% level of confidence. Indeed, there is a slight pattern showing the opposite of what was expected. While the sample is evenly distributed between municipalities excluding or not excluding mobile homes (51%-49%), of those municipalities in a property tax system, more exclude mobile homes than do not(58%-42%); and of those municipalities in a license system, fewer exclude mobile homes than do not exclude them (45%-55%). This division of taxation system into two categories does not directly take into account the varying assessment procedures and tax rates in each category, and may not adequately reflect the per dwelling tax on mobile homes in each municipality. Also, since the license system is assumed to be less expensive to the mobile home dweller than the property tax, occupancy costs would be less in municipalities under such a system. If this is so, the mobile home industry might logically direct a more extensive lobbying effort against complete exclusion in communities under a non-property tax system, which, if successful, would also account for the observed distribution in the table.

While it appears that the method by which mobile homes are taxed is not as important as was thought, the extent of municipal dependence on the property tax and level of expenditures on education are both significant determinants of exclusion (tables 5 & 6), suggesting that, while there

may not be a direct causal relationship between these variables and exclusion or non-exclusion, fiscal consideration in general may be a cause of municipal preferences regarding the exclusion of mobile homes. In both tables the null hypothesis can be rejected at beyond the 99% level, and while phi does not come close to approaching unity, it is at a level that is not unreasonable for a cross-sectional sample like the present one. Neither table contradicts the validity of hypotheses two and three. In table five, while exclusion and non-exclusion are evenly distributed in the sample, those municipalities depending on the property tax for 95% or more of their revenues exclude mobile homes more often (64% - 36%) than those municipalities with other sources accounting for more than 5% of their revenues exclude mobile homes (18% - 81%). In table six, 71% of the municipalities spending more than 40% of their budget on schools ban mobile homes. 68% of those with less than forty cents on the dollar going for schools do not exclude mobile homes while 31% do exclude them.

In a similar manner, table seven lends as strong support to the hypothesis that wealthy communities exclude mobile homes more than less wealthy ones.

Table eight displays a pattern that is the reverse of what it was testing. If a community is experiencing rapid growth, it is more likely not to exclude mobile homes than to exclude them as was suggested. One would suspect that mobile homes are, at least, a more significant component of growth than was assumed when the hypothesis was developed, indicating that the hypothesis did not test the consideration contained in the Anderson quote. Further, if the non-exclusion of mobile homes

occurs in municipalities with a general laxness in other development standards, this demonstrates an attitude and regulatory stance that would encourage the growth observed in the table.

The crosstabulation of density and ban, table nine, does not contradict the hypothesis it is testing. Denser municipalities do exclude mobile homes more (76%-23%) than less dense ones (37%-63%).

Crosstabulation - Restriction and Exclusion

As was noted earlier, most authors attribute the same concerns to the preferences of municipalities in restricting mobile homes to mobile home parks and to non-residentially zoned areas as they attribute to the municipal preferences in excluding mobile homes. This will be examined below, when each of the motivations are reviewed for their applicability in explaining these other restrictions.

The restriction of mobile homes to non-residentially zoned areas is almost as valid a response to the fiscal considerations inherent in the first three hypothesis as is the complete ban. By restricting mobile homes to industrial or commercial zones, a municipality can produce tax revenues from otherwise vacant land, while holding it open for future more intensive and higher revenue, producing, industrial and commercial uses that can command higher land prices. A mobile home is one of the most temporary and easily displaced of all land uses. There is still a question of the costs to a municipality in services provided mobile homes, but if a locality cannot or will not completely exclude mobile homes, a real or imaginary

cost that is temporary is preferable to the more permanent one that would occur if mobile homes were permitted in residential areas.

The desire to prevent a decline in residential property values , however, seems a more plausible reason. The exclusion of mobile homes from residential areas is as adequate a solution as is the complete exclusion of mobile homes for both the adjacent home owners protecting their investment and the municipality protecting its tax base. The restriction of mobile homes to mobile home parks can also be explained by the same reasoning. Likewise, the exclusion of mobile homes from residential areas and restriction to mobile home parks is an adequate solution to the desire to live among individuals of similar socio-economic status. It is unlikely that there are any direct fiscal motivations in the restriction of mobile homes to mobile home parks. However, when combined with their restriction to industrial and commercial zones, the fiscal reasons for restriction to industrial and commercial zones are enhanced. The restriction to parks insures that the land remains in one unbroken tract, increasing the feasibility of later conversion to industrial and commercial uses.

Since it was observed that municipalities experiencing rapid growth do not exclude mobile homes, perhaps out of a general laxness in development controls, it is expected, by the same reasoning, that exclusion from residential areas will also not occur in these communities. It is unclear, however, if the restriction of mobile homes to parks will or will not occur more frequently in fast growing communities, since, while it can be interpreted as a restriction on development, it may also facilitate

development by encouraging the development of mobile home parks. Needless
to say, any results of crosstabulation with growth will have little
meaning for the hypothesis for which growth was introduced to test (see
page 39).

The density argument still has merit for explaining the restriction of the
mobile home to parks. One would still expect that more heavily popu-
lated communities would restrict mobile homes to parks, if not
excluding them altogether. This segregation of mobile homes would help
insure the best use of other areas while keeping the land used for
mobile home development in large tracts facilitating future re-use in
more intensive development that would be likely in dense cities. This
also applies to the restriction of mobile homes to industrial and
commercial areas when it is used in conjunction with the restriction of
mobile homes to mobile home parks.

The same six variables used in the earlier tables (TAXATION, REVENUE,
SCHOOLEX, WEALTH, GROWTH, AND DENSITY) are tabulated with both restriction
to park and exclusion from residential areas on the following pages. The
zoning restrictions are divided into five categories: no restriction, the
use of the restriction of mobile homes to parks, the use of an exclusion
from residential areas, the concurrent use of the restriction to parks
and exclusion from residential areas, and the use of a complete exclusion.
These tables are a simple extension of the earlier tables. In this
case, the 95% confidence level for chi square is 9.488.

Table 10, (taxation systems by zoning restrictions) shows that municipalities

Table 10. Crosstabulation of TAXATION, method by which mobile homes are taxed in a municipality by ZONING, whether or not a municipality restricts mobile homes to mobile home parks, to non-residential areas, or both, or completely excludes them.

	ZONING					
COUNT ROW PCT COL PCT TOT PCT	INO RES- ITRICTION	TO PARKS ONLY	NONRES ONLY	PARKS + NONRES	COMPLETE BAN	ROW TOTAL
TAXATION						
PROPERTY TAX	14 32.6 82.4 14.6	1 2.3 7.7 1.0	1 2.3 20.0 1.0	2 4.7 16.7 2.1	25 58.1 51.0 26.0	43 44.8
LICENSE SYSTEM	3 5.7 17.6 3.1	12 22.6 92.3 12.5	4 7.5 80.0 4.2	10 18.9 83.3 10.4	24 45.3 49.0 25.0	53 55.2
COLUMN TOTAL	17 17.7	13 13.5	5 5.2	12 12.5	49 51.0	96 100.0

CHI SQUARE =   22.78459 WITH   4 DEGREES OF FREEDOM
CRAMER'S V =   0.48717
CONTINGENCY COEFFICIENT =   0.43797

Table 11. Crosstabulation of REVENUE, percentage of municipal revenues derived from property tax, by ZONING, whether or not a municipality restricts mobile homes to mobile home parks, to non-residential areas, or both, or completely excludes them.

```
                        ZONING
            COUNT    I
            ROW PCT  INO RES-   TO PARKS  NCNRES      PARKS +    CCMPLETE     ROW
            COL PCT  ITRICTION  ONLY      ONLY        NCNRES     BAN          TOTAL
            TOT PCT  I            1       I           I          I          I
REVENUE     --------I--------I---------I---------I---------I--------I
                    I       3 I      13 I      2 I      4 I      5 I     27
   BELOW 95%        I   11.1 I   48.1 I    7.4 I   14.8 I   18.5 I   28.1
                    I   17.6 I  100.0 I   40.0 I   33.3 I   10.2 I
                    I    3.1 I   13.5 I    2.1 I    4.2 I    5.2 I
                    -I--------I---------I---------I---------I--------I
                    I      14 I      0 I      3 I      8 I     44 I     69
   ABOVE 95%        I   20.3 I    0.0 I    4.3 I   11.6 I   63.8 I   71.9
                    I   82.4 I    0.0 I   60.0 I   66.7 I   89.8 I
                    I   14.6 I    0.0 I    3.1 I    8.3 I   45.8 I
                    -I--------I---------I---------I---------I--------I
            COLUMN        17       13        5       12       49       96
            TOTAL       17.7     13.5      5.2     12.5     51.0    100.0
```

CHI SQUARE =   42.44003 WITH   4 DEGREES OF FREEDOM
CRAMER'S V =   0.66499
CONTINGENCY COEFFICIENT =   0.55368

Table 12. Crosstabulation of SCHOOLEX, percentage of municipal expenditures spent on schools,
by ZONiNG, whether or not a municipality restricts mobile homes to mobile home parks,
to non-residential areas, or both, or completely excludes them.

```
                      ZONING
            COUNT    I
            ROW PCT  IND RES-    TC PARKS  NCNRES      PARKS +     CCMPLETE    ROW
            COL PCT  ITRICTION   ONLY      ONLY        NONRES      BAN         TOTAL
            TOT PCT  I           I         I           I           I         I
SCHOOLEX    --------I---------I---------I----------I---------I---------I
                     I      7  I     13  I      5  I      8  I     15  I     48
   BELOW 40%         I   14.6  I   27.1  I   10.4  I   16.7  I   31.3  I   50.0
                     I   41.2  I  100.0  I  100.0  I   66.7  I   30.6  I
                     I    7.3  I   13.5  I    5.2  I    8.3  I   15.6  I
                    -I---------I---------I----------I---------I---------I
                     I     10  I      :  I      0  I      4  I     34  I     48
   ABOVE 40%         I   20.8  I    0.0  I    0.0  I    8.3  I   70.8  I   50.0
                     I   58.8  I    0.0  I    0.0  I   33.3  I   69.4  I
                     I   10.4  I    0.0  I    0.0  I    4.2  I   35.4  I
                    -I---------I---------I----------I---------I---------I
            COLUMN       17        13         5         12         49        96
            TOTAL        17.7      13.5       5.2       12.5       51.0      100.0
```

CHI SQUARE =   27.23007 WITH   4 DEGREES OF FREEDOM
CRAMER'S V =   0.53258
CONTINGENCY COEFFICIENT =   0.47007

Table 13. Crosstabulation of WEALTH, median value of a single family dwelling in a municipality, by ZONING, whether or not a municipality restricts mobile homes to mobile home parks, to non-residential areas, or both, or completely excludes them.

```
                        ZONING
           COUNT    I
           ROW PCT  INO RES-   TO PARKS  NONRES    PARKS +    COMPLETE     ROW
           COL PCT  ITRICTION  ONLY      ONLY      NONRES     BAN          TOTAL
           TOT PCT  I          I         I         I          I        I
WEALTH     --------I---------I---------I---------I---------I---------I
                   I    12   I    10  I     4   I     9   I    16   I      51
  BELOW 18,500     I   23.5  I   19.6 I    7.8  I   17.6  I   31.4  I     53.1
                   I   70.6  I   76.9 I   80.0  I   75.0  I   32.7  I
                   I   12.5  I   10.4 I    4.2  I    9.4  I   16.7  I
                  -I---------I---------I---------I---------I---------I
                   I     5   I     3  I     1   I     3   I    33   I      45
  ABOVE 18,500     I   11.1  I    6.7 I    2.2  I    6.7  I   73.3  I     46.9
                   I   29.4  I   23.1 I   20.0  I   25.0  I   67.3  I
                   I    5.2  I    3.1 I    1.0  I    3.1  I   34.4  I
                  -I---------I---------I---------I---------I---------I
          COLUMN        17        13        5        12        49          96
           TOTAL       17.7      13.5      5.2      12.5      51.0       100.0
```

CHI SQUARE =   17.04100 WITH   4 DEGREES OF FREEDOM
CRAMER'S V =   0.42132
CONTINGENCY COEFFICIENT =   0.38827

Table 14. Crosstabulation of GROWTH, percentage growth in municipal population 1960 to 1970, by ZONING, whether or not a municipality restricts mobile homes to mobile home parks, to non-residential areas, or both, or completely excludes them.

	COUNT ROW PCT COL PCT TOT PCT	ZONING INO RES- ITRICTION	TO PARKS ONLY	NONRES ONLY	PARKS + NONRES	COMPLETE BAN	ROW TOTAL
GROWTH							
BELOW 8%		7 13.7 41.2 7.3	3 5.9 23.1 3.1	3 5.9 60.0 3.1	7 13.7 58.3 7.3	31 6C.8 63.3 32.3	51 53.1
ABOVE 8%		10 22.2 58.8 10.4	10 22.2 76.9 10.4	2 4.4 40.0 2.1	5 11.1 41.7 5.2	18 4C.0 36.7 18.8	45 46.9
COLUMN TOTAL		17 17.7	13 13.5	5 5.2	12 12.5	49 51.0	96 100.0

CHI SQUARE = 7.93695 WITH 4 DEGREES OF FREEDOM
CRAMER'S V = 0.28754
CONTINGENCY COEFFICIENT = 0.27634

Table 15.   Crosstabulation of DENSITY, municipal population density per square mile, by ZONING, whether or not a municipality restricts mobile homes to mobile home parks, to non-residential areas, or both, or completely excludes them.

	ZONING					
COUNT	I					
ROW PCT	INO RES-	TO PARKS	NONRES	PARKS +	COMPLETE	ROW
COL PCT	ITRICTION ONLY	ONLY	ONLY	NONRES	BAN	TOTAL
TOT PCT	I	I	I	I	I	I
DENSITY						
	I 15 I	13 I	3 I	8 I	23 I	62
BELOW 4700	I 24.2 I	21.0 I	4.8 I	12.9 I	37.1 I	64.6
	I 88.2 I	100.0 I	60.0 I	66.7 I	46.9 I	
	I 15.6 I	13.5 I	3.1 I	8.3 I	24.0 I	
	I 2 I	0 I	2 I	4 I	26 I	34
ABOVE 4700	I 5.9 I	0.0 I	5.9 I	11.8 I	76.5 I	35.4
	I 11.8 I	0.0 I	40.0 I	33.3 I	53.1 I	
	I 2.1 I	0.0 I	2.1 I	4.2 I	27.1 I	
COLUMN	17	13	5	12	49	96
TOTAL	17.7	13.5	5.2	12.5	51.0	100.0

CHI SQUARE =   18.02487 WITH   4 DEGREES OF FREEDOM
CRAMER'S V =   0.43331
CONTINGENCY COEFFICIENT =   0.39759

operating under a property tax system restrict or exclude mobile homes less often than those operating under a license system. 17.7% of the municipalities in the sample place none of the restrictions on exclusions of mobile homes. 32.6% of those municipalities under a property tax system have no restrictions or exclusions while 5.7% of those under a license system place no restrictions or exclusions.As was true in the earlier table (no. 4), municipalities in a property tax system exclude mobile homes slightly more often than those in a license system. The interesting observation in this table is the frequency with which municipalities employing one or both restrictions are found to be in a license system. 92% of those municipalities restricting mobile homes to parks are in a license system, 80% of those municipalities restricting municipalities to non-residential areas are in a license system, and 83% of those municipalities using both restrictions are in a license system. This is compared with the 55% of all municipalities in the sample under a license system. While the system of taxation appears to have little impact on a municipality excluding mobile homes, it seems to matter greatly in the decision to restrict mobile homes. In a property tax system, if a municipality does not exclude mobile homes, it is likely not to use either of the two restrictions, restriction to parks and restriction to non-residential areas. On the other hand, a municipality in a license system, if it does not exclude mobile home, will be likely to use one of the restrictions.

Table 11 tabulates the municipalities' dependence on the property tax by the use of zoning. The percentage of municipalities restricting mobile

homes to non-residential areas and those employing both restrictions, when separated by their dependence on the property tax, differ little from the sample. 5.2% of the entire sample use a restriction to non-residential areas. 7.4% of the municipalities with less than 95% of their revenues from the property tax employ this restriction, while 4.3% of those with more than 95% of their revenues employ it. The same percentages for those municipalities using both restrictions are: sample: 12.5%, below 95%: 14.8%, above 95%: 11.6%. Unlike these two categories, nearly half (48.1%) of the municipalities whose revenue from the property tax is less than 95% of their total revenues restrict mobile homes to parks, while none of the municipalities with property tax revenue accounting for more than 95% of total revenues restrict mobile homes to parks. This does not contradict the argument that there are few fiscal motivations for restricting mobile homes to mobile home parks. The fiscal reasons for restricting mobile homes to industrial and commercial areas may not be as great as was thought.

Table 12 (school expenditures by zoning) has a distribution similar to table 11 and supports the same conclusions. The principal difference between the tables is the percentage of municipalities with school expenditures less than 40% of their budget that restrict mobile homes to non-residential areas. It is 10.4% compared with a sample percentage of 5.2%. None of the municipalities with school expenditures over 40% restrict mobile homes to non-residential areas.

Table 13 tabulates wealth by zoning restrictions. The wealthier communities

more frequently restrict or exclude mobile homes than the less wealthy (88.9% to 76.5%). 73.3% of the wealthy municipalities exclude mobile homes while 31.4% of the less wealthy ones do. However, continuing the pattern of the previous two tables, 15.6% of the wealthy municipalities employ one of the restrictions and 35.0% of the less wealthy communities do. One may conclude that while most municipalities exclude or restrict mobile homes, those with the strongest reasons exclude mobile homes while others generally restrict or control them in some fashion.

Table 14 tabulates growth by zoning restrictions. 13.5% of the municipalities in the sample restrict mobile homes to parks. 5.9% of the municipalities with a growth rate of less than 8% so restrict mobile homes, while 22.2% of those municipalities with a growth rate of greater than 8% do so restrict mobile homes. This supports the contention that a restriction to parks is less of a development control than was thought while the other restrictions are effective.

Table 15 shows the opposite of what was expected in the relationship between density and the use of the restriction to parks. Instead of the denser municipalities using the restriction to parks more often, communities below 4700 population per square mile are the exclusive users of this restriction. Municipalities above 4700 do use one or more of the restrictions or exclusions more often though (94.1% - 75.8%). This is almost entirely due to their frequent use of the complete exclusion of mobile homes.

In summary, most municipalities either exclude or place a restriction
on mobile homes. Not surprisingly, communities with more incentive,
fiscal or otherwise, do so more often. These communities, however,
are much more likely to completely exclude mobile homes, while others,
with less incentive, restrict them to mobile home parks and nonresidential
areas. However, the pattern in this second set of tables does not con-
clusively show that the restrictions are not a result of the same motiva-
tions that cause a municipality to exclude mobile homes. The method of
taxation is associated with the decision to restrict but not significantly
with the decision to exclude. Dependence on the property tax, school
expenditures, and wealth are associated with the decision to exclude. A
municipality with over a 95% dependence on the property tax or with
school expenditures over 40%, if it does not exclude mobile homes, is more
likely to place no restriction on mobile homes than to restrict them.

Linear Probability Model

The crosstabulation on the preceding pages considers the simple relation-
ship between two variables and ignores the possible influence of other
variables on this relationship. While it is possible to construct tables
that hold the other variables constant, this is a tedious process. Rather
than do this, it was decided to set up a regression[14] where the left hand
dependent variable could be considered the conditional probability of an
event occuring, given the right hand dependent variables. A logit analysis
was first considered, where the probability undergoes a monotonic transfor-
mation and is constrained to lie between zero and one, unlike the linear

model. One advantage of this specification is that the variables are re-
lated in a multiplicative fashion instead of additive.This is more plaus-
ible in this situation where one does not expect an independent variable's
contribution on the estimated probability to remain constant regardless
of the values of the other independent variables.[15] This analysis was
first applied, using continuous variables, to a determination of the
preferences of the California highway department bureaucracy in route
selection,[16] something similar to the problem at hand. Unfortunately,
this analysis involves a maximization procedure and was consequently
too expensive in computer time to be considered.

Returning to the linear probability model, this is simply performing
ordinary least squares where the left hand variable takes on only two
values, so that one may use unity to indicate the occurrence of an event
and zero to indicate its non-occurrence. By running a multiple regression
on such a dependent variable Y on several explanatory variables X, one can
then interpret the calculated value of Y, for any given X, as an estimate
of the conditional probability of Y, given X.[17] The linear probability
model, unlike the logit analysis, allows only two values '1' or '0' for
the left hand variable. This permits only one restriction or exclusion
to be tested at a time. Complete exclusion of mobile homes is considered
below. It was decided not to do the same for the other two restrictions.
This would have been misleading since they often occur simultaneously
and since a municipality does not make a simple decision to restrict
mobile homes; it is part of a larger decision about both controls.

A linear probability model was formulated using the same variables that

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were examined in the preceding section. See page 41 for a list of these
variables and an explanation of their meaning. BAN is a dummy variable;
it has the value '1' when a municipality excludes mobile homes and '0'
when it does not. Taxation is included as a dummy variable. This yields:

BAN = C + a_1 WEALTH + a_2 SCHOOLEX + a_3 REVENUE + a_4 DENSITY + a_5 GROWTH + a_6 TAXATION

Using ordinary least squares with t-statistics in parenthesis:

BAN = -0.61 + 0.000017 WEALTH + 0.0064 SCHOOLEX + 0.0043 REVENUE

   (-2.47) (1.73)   (2.31)   (1.58)

   + 0.000049 DENSITY + 0.000054 GROWTH + 0.025 TAXATION

   (4.26)   (1.27)   (0.29)

   SSR = 14.259, Std. Error = 0.398

Dropping TAXATION since it is insignificant here and also in the cross-
tabulation; and dropping GROWTH since it also is insignificant and has a
small contribution to the fitted value of BAN (note that GROWTH is
positive, opposite of what would be expected from the crosstabulation
results):

BAN = -0.54 + 0.000017 WEALTH + 0.0070 SCHOOLEX + 0.0034 REVENUE +

   (-2.30) (1.77)   (2.70)   (1.29)

   0.000048 DENSITY

   (4.28)   SSR = 14.512, Std. Error = 0.399

Each coefficient has the expected sign; though one cannot reject a null
hypothesis that the coefficient of PCTTAX is zero or of the opposite sign
at the 95% level. The others are significant at a 95% one-tailed level.

To gain some understanding of the importance of each variable, consider the effect each one has on ban over its range in the sample. WEALTH ranges from 33,000 to 11,000 which can produce a difference of as much as .37 in BAN. Similarly SCHOOLEX varies from 64 to 0 or a difference of .45 in BAN. REVENUE from 99 to 21 or a difference of .34; DENSITY from 16,000 to 782 or a difference of .77 in BAN. While this gives some feeling for the importance of density, one should, to be rigorous, consider the standard error of each coefficient. For example, 90% confidence interval for REVENUE includes zero, at which point a municipality's dependence on the property tax does not affect complete exclusion at all.

A plot of the actual and fitted values (which can be interpreted as conditional probabilities) follows after this page. One additional way of judging this model is to tabulate the number of times it fails to discriminate between the occurrence of ban and the non-occurrence of ban. Since the sample is roughly evenly divided between occurrence and non-occurrence, a probability of .5 is an adequate dividing point. The failures are indicated by a 'F' on the plot and tabulated below.

		ACTUAL	
		BAN	no BAN
PREDICTED	BAN	47	14
	no BAN	5	30

29 failures, 77 successes, out of 96 cases

Table 16　　Conditional Probabilities of Complete Exclusion:　Actual and Predicted

CITY	ACTUAL	F	PREDICTED	PLOT OF ACTUAL(*) AND PREDICTED(+) VALUES	RESIDUAL
Bridgeport	1.0		0.9638	+*	0.362E-01
Bristol	1.0		0.6077	+ *	0.392
Danbury	0.0	F	0.7017	* +	-0.702
Hartford	1.0		0.9121	+ *	0.875E-01
Meriden	1.0		0.6206	+ *	0.379
Middleton	1.0		0.5723	+ *	0.428
Milford	1.0		0.6067	+ *	0.393
New Britain	1.0		0.7276	+ *	0.272
New Haven	1.0		0.8099	+ *	0.190
New London	1.0		0.6848	+ *	0.315
Norwalk	0.0	F	0.9757	* +	-0.976
Shelton	1.0		0.5615	+ *	0.438
Stamford	0.0	F	0.7520	* +	-0.752
Torrington	1.0		0.9662	+*	0.338E-01
Waterbury	1.0		0.5209	+ *	0.479
Westhaven	1.0		0.5849	+ *	0.415
Cranston	1.0		0.7130	+ *	0.287
E.Providance	1.0		0.6283	+ *	0.372
Newport	0.0	F	0.5615	* +	-0.562
Pawtucket	1.0		0.7045	+ *	0.295
Providence	0.0	F	0.8067	* +	-0.807
Warwick	1.0		0.8206	+ *	0.179
Woonsocket	0.0	F	0.6591	* +	-0.659
Attleboro	1.0		0.7049	+ *	0.295
Beverly	0.0	F	0.5954	* +	-0.595
Boston	1.0		0.6209	+ *	0.379
Brockton	1.0		0.9781	+	0.219E-01
Cambridge	1.0		0.7043	+ *	0.296
Chelsea	1.0		1.172	* +	-0.172
Chicopee	1.0		1.022	*+	-0.216E-01

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Table 16   continued

City						
Everett	0.0	F	0.6224	*	+	-0.622
Fall River	1.0		1.021		*+	-C.205E-01
Fitchburg	0.0	F	0.5210	*	+	-C.521
Gloucester	0.0		0.3823	*	+	-0.382
Haverill	0.0		0.4C59	*	+	-C.406
Holyoke	1.0	F	0.3438		+ *	C.656
Lawrance	1.0		C.5229		+ *	0.477
Leomister	1.0		0.7980		+ *	0.202
Lowell	0.0		0.4723	*	+	-C.472
Lynn	1.0		0.7276		+ *	C.272
Malden	1.0		C.7967		+ *	0.203
Marborough	1.0		0.9095		+ *	0.905E-C1
Medford	0.0	F	0.5426	*	+	-C.543
Melrose	1.0		C.9817		+	0.183E-01
N. Bedford	1.0		C.9C14		+ *	0.986E-01
Newton	1.0		0.5905		+ *	C.41C
Northampton	1.0		0.9740		+	C.26CE-C1
Peobody	1.0		C.5157		+ *	0.480
Pittsfield	1.0		0.6198		+ *	C.380
Quincy	0.0	F	0.5366	*	+	-C.537
Revere	1.0		0.6459		+ *	C.354
Salem	1.0		C.8445		+ *	0.155
Somerville	1.0		0.7207		+ *	0.279
Springfield	1.0		1.352		* +	-C.352
Taunton	1.0		C.5921		+ *	0.408
Waltham	1.0	F	0.4446		+ *	0.555
Westfield	1.0		0.8026		+ *	0.197
Woburn	1.0		0.5114		+ *	C.485
Worcester	1.0		C.6488		+ *	0.351
Concord	0.0	F	0.5886	*	+	-0.589
Manchester	0.0		0.7271E-C1	* +		-C.727E-01
Nashua	1.0	F	C.4884		+ *	C.512
Porsmouth	0.0	F	0.5264	*	+	-0.526

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Table 16   continued

Long Branch	0.0	F	0.6575		-C.657
Sayerville	1.0		0.8271		0.173
New Brunswick	1.0	F	0.17C7E-C1		0.983
Peth Amboy	1.0		0.8167		C.183
Norfolk	1.0		0.E676		C.132
Portsmouth	0.0		0.4515		-0.451
Richmond	0.0		0.4009		-C.401
Roanoke	0.0		0.3384		-C.338
Virginia Beach	0.0		0.2827		-0.283
Burlington	1.0		0.5048		0.495
Corvalis	0.0		0.3404		-C.34C
Eugene	0.0		C.2562		-0.256
Medford	0.0		0.2278		-0.228
Springfield	0.0		0.1248		-C.125
Clearwater	0.0		C.1149		-C.115
Daytona Beach	0.0		0.7413E-C1		-0.741E-01
Ft.Lauderdale	0.0		-0.2115E-01		C.211E-01
Gainesville	0.0		0.1996		-C.2CC
Hollywood	0.0		0.3546E-C1		-0.355E-01
Jacksonville	0.0		0.1840		-C.184
Lakeland	0.0		-0.68C6E-01		C.681E-01
Melbourne	0.0		-C.1598E-C1		0.160E-01
Orlando	0.0		-0.4690E-01		0.469E-01
Panama City	0.0		0.6485E-01		-C.649E-01
Pompano Beach	0.0		-0.1396		0.140
Tampa	0.0		0.1750		-0.175
Titusville	0.0		-0.1705E-01		0.17CE-01
Bangor	0.0		-C.1116E-C1		C.112E-01
Lewiston	0.0		0.3311		-0.331
Portland	0.0		0.4401		-C.44C
Chapel Hill	1.0	F	0.4904		C.51C
Durham	0.0		0.1637		-0.164
Raleigh	0.0		0.2461		-0.246

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Summary

In terms of this analysis, the six tested hypotheses can be evaluated
in the following manner:

A wealthier municipality, everything else held constant, has a greater
propensity to exclude mobile homes than does one with less wealth.

Fiscal considerations are important. The more a municipality must directly
spend on schools, everything else held constant, the greater its propen-
sity to exclude mobile homes. In a simple two way relationship, the same
holds true for a municipality's dependence on the property tax for revenue,
though when considering the other variables, the effect of a community's
dependence on the property tax is not significant in predicting whether or
not it will exclude mobile homes.

The way mobile homes are taxed in a state bears no relationship to the pro-
pensity of a municipality in that state to exclude mobile homes; it is,
however, a significant determinant of restrictions to parks and non-resi-
dential areas.

Denser municipalities, everything else being equal, have a greater pro-
pensity to exclude mobile homes.

The effect of the rate of population growth is not conclusive. Communities
with high population growth exclude mobile homes less than slower growing
communities; however, holding the other variables constant, the effect is
positive though small and only 90% significant.

Notes for Chapter C

1. Douglas Commission, Building the American City. (1968) at 208.

2. see for example Federal Reserve Bank of Boston, "Mobile Homes in New England", New England Economic Review (May-June, 1970) at 2.

3. M.I.T. Program in Industrialization of the Housing Sector, M.I.T. Urban Systems Laboratory

4. Illinois Zoning Law Study Commission, Zoning Problems, Supplementary Statistical Report. (1971) at 26.

5. Drury, Margaret J. Mobile Homes: The Unrecognized Revolution in American Housing. (1972) at 134.

6. Douglas Commission, Building the American City. (1968) at 216.

7. Robert M. Anderson, Zoning Law and Practice in New York State (1963)

8. unpublished data, M.I.T. Industrialized Housing Program.

9. U.S. Bureau of the Census, Series GF&), No. 4 City Government Finances

10. Ibid.

11. U.S. Bureau of the Census, Census of Housing: 1970 Vol. 1, "Housing Characteristics for States, Cities, and Counties."

12. U.S. Bureau of the Census, Census of Population Vol. 1, "Characteristics of the Population."

13. Ibid.

14. An explanation of regression can be found in most standard statistics or econometrics texts, such as Wonnacott and Wonnacot Econometrics or Johnston, op.cit.

15. see Theil, Principles of Econometrics.

16. D. McFadden, The Revealed Preferences of a Government Bureaucracy.

17. J. Johnston, Econometric Methods, (1972) at 183.

D. IMPACT OF LAND USE CONTROLS ON

THE MOBILE HOME COMPONENT OF THE

HOUSING MARKET

The exact nature of the impact of land use controls on the mobile home industry has yet to be empirically demonstrated. To be sure, any effect is immeasurably complicated by the variety of land use controls, each of which may differ in dissimilar contexts, by the more than ten thousand local governments that have implemented a zoning ordinance,[1] and by the range of actors involved from manufacturer, dealer, and park owner to the consumer to the local and state governments. Land use controls directly affect the mobile home market by restricting the quantity and location of land available for mobile home development. This should influence the price and quantity of mobile homes in the market as well as the final occupancy cost of the mobile home dweller.

Land Supply

In the mobile home industry, unlike the conventional housing industry, the housing unit is built in a factory with the builder having little idea where the unit will be finally located. Still, the mobile home must eventually be placed on a plot of land, either in a mobile home park or outside of one. Except for replacement units, this process of placing mobile home units on land is, in most cases, controlled by local zoning ordinances. No more mobile homes can be produced and sold than there is land available for them to be placed on. So zoning theoretically limits the quantity of mobile homes produced by limiting the supply of land available for them. .

This impact of zoning cannot be gauged by reviewing the frequency of zoning controls and exclusions alone. Even the ultimate impact, complete

exclusion of mobile homes, will sometimes be of questionable significance. In Westchester County, New York, 42 out of the 44 municipalities exclude mobile homes entirely.[2] Yet how much of a restriction is this? Though it appears to be severe, one would not expect great immigration of mobile homes if it were removed. The conventional mobile home park is a combination of low-cost housing and low density development that necessarily emphasizes land costs. A mobile home park developer can only pay so much for expensive suburban and most urban land and remain competitive with denser forms of low-cost housing such as apartment units.

However, there is some documentary evidence that there is a shortage of land available for mobile home development. Research on vacancy rates and new park space construction has been conducted by Program Industrialization of the Housing Sector at M.I.T.[3] Vacancy rates vary widely from state to state and between regions of the country. In 1972, 26 states had vacancy rates exceeding ten percent in mobile home parks rated in Woodall's Mobile Home and Park Directory,[4] a nationwide listing of the better mobile home parks. However, the Northeastern states (which have generally more restrictive land use controls - see table 1 on page 28) have vacancy rates much lower than this. The New England states had an average vacancy rate of 2.3% while the Middle Atlantic states had an average vacancy rate of 4.8%. Eight states in the nation had vacancy rates 3% or lower: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, Vermont and West Virginia.

There is even more persuasive evidence that there may be a shortage of
park spaces in some areas. The Detroit News surveyed twenty-two parks
in its metropolitan area and found waiting lists of over three years
in a majority of them.[5] The Kaiser Commission, in interviewing mobile
home park operators in New Jersey, reported that one operator had turned
down four requests for space the day he was interviewed.[6]

There is no hard evidence known to this author establishing land-use
controls as one of the causes of this shortage,nor has a statistical
correlation between restrictive zoning and reduced land supply been es-
tablished. The individuals closest to this problem, the mobile home
dealers, do perceive such a situation, however. In a 1971 survey of
115 dealers in four northern and four southern cities,59% identified
(lack of) "park space" and 55% identified "local zoning" as "the major
problems facing your business." These figures rose, respectively, to 79%
and 70% among dealers in the generally more restrictive North.[7]

Data is available on how this problem translates into lost sales. The
same 1971 survey reported that 24% of all dealers had from 81% to 100%
of their retail sales "dependent on your ability to provide an adequate
park site". 42% of the dealers in the North and 5% in the South responded
in this manner. The 1973 national survey of dealers done by MIT's
Program Industrialization asked for the number of sales lost because of
lack of land (i.e., park space). While one respondent claimed he could
have sold 700% more mobile homes had he had available space, the average
claim among respondents was 49%. Responses from dealers in both Florida

and California (with the largest number of respondents) had an average
of 42%.[8]

The complete exclusion of mobile homes from a municipality is likely not
to be the only land use control affecting land supply. Other controls,
appearing less severe could have the same impact. A municipality may
zone only a miniscule portion of its land area for mobile homes or
mobile home parks. The land that is legally available may be unsuitable
for development because of topography or surrounding environment. Res-
tricting mobile homes to industrial and commercial zones economically
limits the land available when these uses can bid a higher price.
Restraints such as these can also be inconsistent with marketing and
investment conditions required by developers while at the same time permit-
ting mobile homes as a legal use.

The point of this is that zoning may well be restricting the sales and
production of mobile homes. It is necessary to establish this since
the production of the unit is physically and temporally separated from
the establishment of a mobile home on a site zoned for mobile homes.

Cost of Product

If one defines cost of product as final consumer occupancy cost, then
land-use controls effect   that cost in several ways. The most obvious
is that a limitation in the supply of land, or more technically, a shift
in the supply curve with an unchanged demand curve, results in a higher
market price for land.

This, of course, depends on the premise that land use controls do limit land supply or shift the supply curve.

However, limiting the supply of land available for mobile homes is only one aspect of this phenomenon. Restricting mobile homes to generally more expensive industrial or commercial land instead of residential areas increases costs due to its higher income producing opportunity value. This is still a demand and supply situation as above; mobile home developers are compelled to compete in a different market for their land, one created by the product differentiation accomplished by zoning.

There are two specific impacts on cost from the land use control system. First, mobile homes are often allowed only as a conditional use or by special permit. The necessary filing and legal fees paid by the developer are eventually borne by the mobile home occupant. It is not known, however, whether this occurs more often in mobile home development than in other types of conventional construction. Since land costs are a greater proportion of mobile home occupancy costs than in conventional housing,[9] these development costs can be more significant even though they occur just as often in both conventional and mobile home development.

Second, subdivision controls add to the cost of land and associated site work. As applied to mobile home parks, they frequently restrict mobile homes to mobile home parks and they allow their construction in a certain district if the developers agree to provide, at his own expense, improvements as specified by the municipality. In a 1972 study of New Jersey, George Stenlieb has demonstrated for convention housing that

subdivision controls in general are a highly significant determinant of final selling price, but one that could not be adequately measured "given the present uniformity of a high level of standards".[10]

Empirical Work & Methodology

The intention of this chapter is to determine whether municipal land-use controls have a demonstrable effect on the price and quantity of mobile homes sold in the United States. Having specified a suitable model, it is intended to use the model to show that exclusionary land-use controls raise the price and limit the quantity of mobile homes and land supplied to the consumer.

Empirical work specifically directed at the mobile home component of the housing industry has been generally limited in scope and purpose. For example, the problem of what to do with mobile homes often surfaces when one is working with the housing market in the United States. In a 1970 Federal Home Loan Bank Board working paper on the housing market[11] the only variables used to explain the quantity of mobile homes produced were a constant, the Boeckh Construction Cost Index, and a time trend variable.

In addition, research concerned with the impact of the land-use control system on conventional housing markets is complicated by the fine grain of its implementation. Ten thousand governments have a zoning ordinance[12] and many more have the power to implement one if they wish. Existing

studies have been limited to one local area or have been designed as comparative research between two cities or two subdivisions for this reason. For example, see George Sternlieb's 1972 study of zoning and housing costs in New Jersey.[13]

Formulation of Model - Demand Equation

Owing to the nature of the data available on zoning regulation of mobile homes, one is limited to constructing a cross-section model by state for the period 1969-1970. Since mobile homes are the dominant form of housing in the below $25,000, they would appear to be an inferior good; one would then expect income and the cost of conventional housing to appear in the demand equation. As income goes up, fewer mobile homes would be demanded as individuals could more easily afford conventional housing. An increase in the cost of conventional housing would increase demand for mobile homes as fewer people could then afford conventional housing. Since the primary market for mobile homes is young families, the percentage of households headed by individuals less than thirty-five years old is included. A higher percentage of young households would indicate a greater demand for mobile homes. Finally, the net household formation rate is included. A positive sign is also expected for this variable. A governmental variable is included: a dummy variable which is zero when mobile homes are taxed by real estate or personal taxes and unity when mobile homes are taxed by fees and/or licenses. The fee system, in most cases, measurably reduces the amount of taxes typically paid by the mobile home dweller. The demand equation is:

$$Q_D = a_1 P + C + a_2 \text{ INCOME} + a_3 \text{ HOUSE\_CST} + a_4 \text{ HSHD } 35$$
$$a_5 \text{HSHD\_CHG} + a_6 \text{ TAX}$$

where: Q is quantity/1000 households

P is price

C is a constant

INCOME is the median family income in the state.[15]

HOUSE_CST is the annual cost of housing for a five room unit[16]

HSHD<35 is the percentage of household heads less than 35

years old.[17]

HSHD_CHG is the percentage change in the number of households

1967 to 1968

TAX is a dummy variable; unity when mobile homes are subject

to fees and licenses rather than real and personal pro-

perty taxes.[19]

The Supply Equation

The hypothesis being tested is that municipal land-use regulation limits
the quantity and raises the price of mobile homes at the retail level.
They do this by regulating the land supply available for siting of a
mobile home which will limit mobile home sales and raise prices for both
mobile homes units and the available land. Three land use controls are
considered: the restriction of mobile homes to mobile home parks, the
restriction of mobile homes to nonresidentially zoned areas, and the
complete exclusion of mobile homes. While an argument can be made that
the first two restrictions alter the attributes of the mobile home housing

package and thereby also belong in the demand equation, this is assumed to be a second order effect. Therefore, both restrictions appear only in the supply equation.

As cost of construction varies from state to state, this also is included in the supply equation, as it increases the suppliers' costs, positively affecting price and depressing quantity. The equation is then:

$$Q_s = b_1 \ P + C + b_2 \ BAN + b_3 \ PARKS + b_4 \ NONRES + b_5 \ BUILD\_CST$$

where

Q is quantity per thousand households

P is price

C is a constant

PARKS is the percentage of municipalities requiring location of mobile homes in a mobile home park of all municipalities permitting mobile homes in a state.[20]

NONRES is the percentage of municipalities prohibiting location in a residentail district of all municipalities permitting mobile homes in a state.[21]

BAN is the percentage of municipalities in a state completely excluding mobile homes.[22]

BUILD_CST is an index of the cost of framed construction.[23]

The model as it stands now consists of two simultaneous equations with two endogenous variables and nine predetermined variables, four which are excluded from the demand equation and five which are excluded from the supply equation. Therefore both equations are identified.

82

Data

Up to this point the method by which price and quantity will be measured

has not been explained. This problem is especially acute in the mobile

home market since the mobile home is usually sold separately from

the land on which it is ultimately placed. Due to this situation, and

because the retail price is not reported except as a national average,[24]

it was decided to first estimate the entire model for only rental mobile

homes. This allows one to estimate both the price and quantity reduced

form equations for roughly ten percent of the mobile home market and then

compare the quantity reduced form coefficients with those of

the quantity reduced form equation estimated for the entire mobile

home market. This procedure makes no assumption about the equivalence of

the two markets. One hopes, however, that an understanding of the effects

of the land use controls on the rental market will aid in explaining their

impacts on the entire market.

The model, when used in the rental market, remains essentially the same

with the exception of TAX which now properly belongs in the supply

equation as the landlord is paying the taxes. The equations are still

identified. Quantity (Q) is the number of rental mobile homes in a state

that were manufactured in 1969 and 1970[25]. This is adjusted for size by

the mean number of rooms reported.[27] Price (P) is the median rent paid

by renters in mobile homes that were manufactured in 1969-1970[28] adjusted

in a similar manner.

The land-use controls in the supply equation measure the percentage of
municipalities in each state that use each land-use control. These
are derived from the same information used in Table 1, page 28. This
forces the assumption that, for states with the same percentage of
municipalities using a control, the pattern of the distribution of use
between urban, suburban, and rural municipalities (pages 30-34) is also
the same.

To quantify the effect of land use controls on the mobile home market, one
cannot simply use the number of mobile homes sold in a certain period as
a measure of quantity. Not all of the mobile homes sold come into contact
with a municipality's land use control system. Those sold as replacements
for older mobile homes can be located on the site of the retired unit
that previously conformed with the zoning ordinance. This is especially
true of units in a mobile home park. Therefore, the quantity variable
is adjusted by an estimate of the number of mobile homes retired from the
mobile home stock in that state.

Unfortunately such a figure is difficult to come by. From two sources,
it is known that a quarter of the mobile homes sold are bought by people
who previously owned a mobile home.[29] This represents 8% of the present
mobile home stock. From industry production figures[30] and the 1970
census[31], it can be shown that 75% of the mobile homes manufactured
between 1965 and 1968 are still in use. 69% of the stock added between
1960 and 1965 is still in use. This figure drops to 38% for those units
made between 1950 and 1959. This indicates an average life of somewhere
around ten years, or 10% of the stock being retired each year if pro-

duction was constant. Since the production of mobile homes has generally been increasing from year to year, the figure should be considerably less than ten percent of the total stock. I have estimated the replacement rate to be five percent of the total stock. Therefore, the quantity figure in the equation is reduced by five percent of the mobile home stock in a state.

Analysis - Rental Market Structural Equations

After preliminary investigation several of the variables were deleted simplifying the equations. HSHD<35, the percentage of household heads below 35 years of age, and HOUSE_CST, an index of the cost of housing, were removed from the demand equation. BUILD_CST, an index of the cost of construction, and TAX, a dummy variable for the method of taxation, were dropped from the supply equation. In each case the t-statistic was below 1.00 and the coefficient had the wrong sign.

The model is now (with t-statistics in parentheses and using two stage least squares):

DEMAND:

Quantity = -0.013 PRICE + 2.54   -0.00012 INCOME + 0.11 HSHD_CHG

        (-1.24)   (2.64) (-2.41)   (1.64)

        SSR = 5.27   Std. err. = 0.37   F = 3.08 $F_{95\%}$ = 2.84

SUPPLY:

Price $= -13.84$ QUANTITY $+ 121.81 + 0.051$ BAN $+ 0.022$ NONRES -0.15 PARKS

$\quad\quad\quad$ (-1.39) $\quad\quad\quad$ (26.36) $\quad$ (0.38) $\quad\quad$ (0.21) $\quad\quad\quad$ (-1.67)

$\quad\quad$ SSR $= 8182.93$ $\quad$ Std. err. $= 14.87$ $\quad$ F $= 1.07$ $\quad$ $F_{95\%} = 2.61$

The coefficients of the first equation, the demand equation, have the expected signs; however neither PRICE nor HSHD_CHG have t-statistics that allow rejection of the hypothesis that their coefficient is zero at a 95% level of confidence in a one-tailed test. HSHD_CHG is near the 95% value (1.68), while PRICE is just under the 90% level (1.30).

The supply equation is less well off. Its F statistic is not high enough to reject the null hypothesis that all the coefficients are zero at a 95% confidence level. Quantity has the wrong sign; one would expect it to be positive since this is a supply equation. In a two-tailed test, it is significant at only the 80% confidence level. Of three regulation variables, BAN, NONRES, and PARKS, two, the complete exclusion of mobile homes and their restriction to non-residential areas have very poor t-statistics. The third, restriction of mobile homes to parks, is significant at a 90% confidence level in a two tailed test. Its sign is the opposite of what was expected, though this is plausible if one makes the argument that in states where restriction to parks is high, a greater percentage of rental mobile homes are located in mobile home parks and that rental costs are less in mobile home parks than on scattered single lots, perhaps due to economies of scale.

Considering its t-statistic, the coefficient of quantity could well be zero. This suggests the possibility of a horizontal supply curve. Considering the relative newness of the industry and its rapid growth of the past decade, there could be a shortage situation with excess demand for rental mobile homes, allowing the supplier to set an artificially high and constant price that is unaffected by quantity. The elasticity of price (rent) with respect to quantity would then be zero.

Alternatively, one could accept the negative sign of the coefficient of quantity as valid, indicating that the industry as a whole has a downward sloping supply curve over the range of observations in the sample. The more mobile homes supplied, the lower the price. This, of course, is the whole idea behind industrialized housing, the taking advantage of increasing returns to scale possible by mass producing housing off-site in a factory. This economy of scale by the manufacturer is observable in the rental market since states with a high number of rental units per household also have a high number of owner-occupied mobile homes per household. However, it is tenuous to attribute these scale economies entirely to the manufacturer, since states with relatively large numbers of rental units might be likely to have a greater percentage of their rental units owned by large landlords who would also be able to show economies of scale.

To clarify the relationship between the supply and demand curves, both curves are graphed on the following page, Figure 17. The two curves are drawn for the mean value of each of the other variables besides price and quantity in the supply and demand equation. The mean values of each variable are:

Figure 17   Supply and Demand of
             Rental Mobile Homes

PRICE
(rent)

$140
$135
$130
$125
$120
$115
$110
$105
$100
$95
$90
$85
$80

-.2 -.1   0   .1   .2   .3   .4   .5   .6   .7   .8   .9   1.0 1.1 1.2

QUANTITY (per thousand households)

SUPPLY

DEMAND
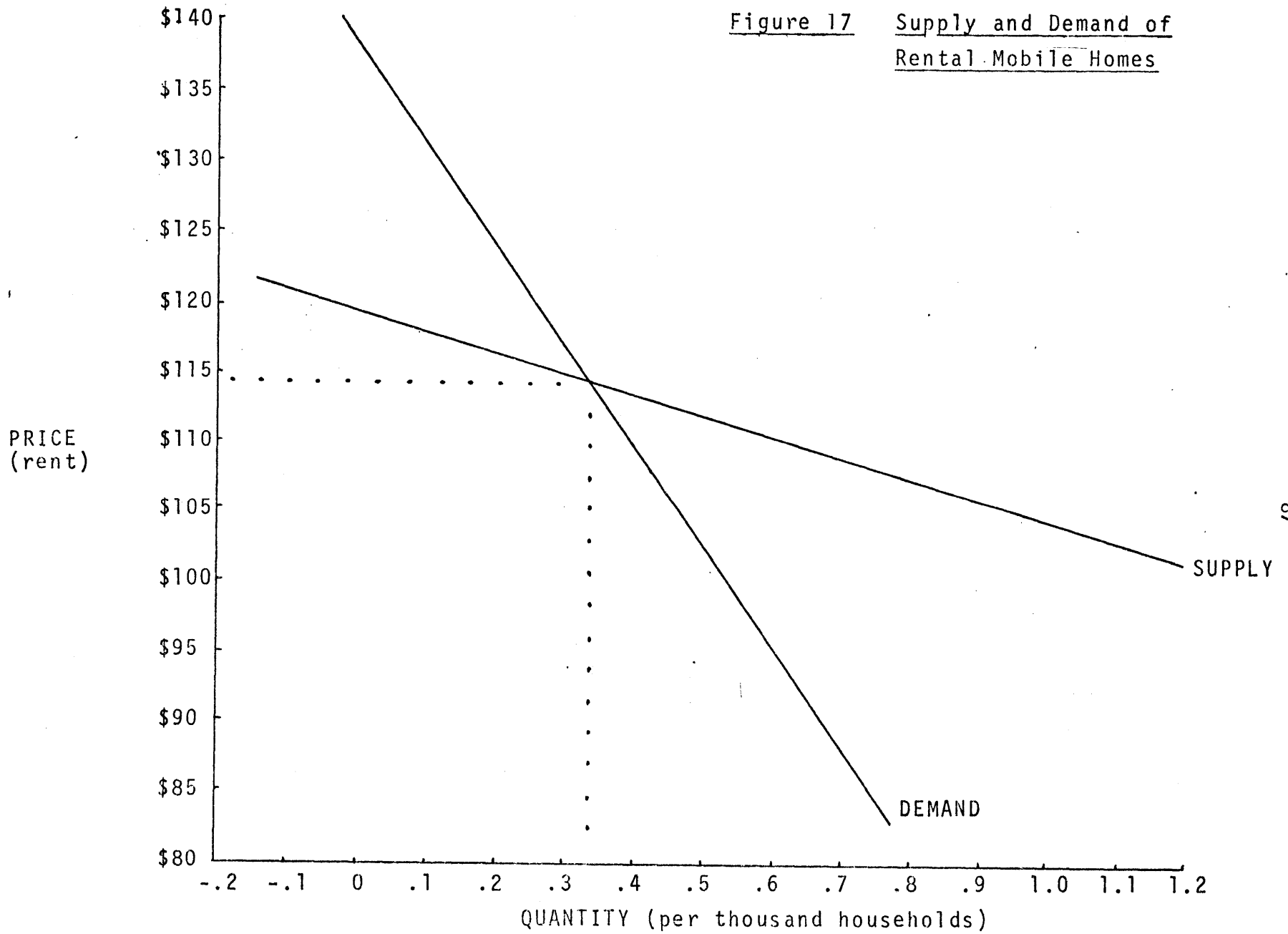
BAN 16.5   INCOME 9135.90

NONRES 22.23   HSHD_CHG   2.54

PARKS 49.07

As in the equations, price is the median rent and quantity is the number of rental mobile homes that were manufactured in 1969 and 1970. Quantity is per one thousand households adjusted for replacements by five percent of the rental stock. This accounts for the negative observations for quantity. The curves are shown for the range of observations on price and quantity in this sample. The supply curve undoubtedly does not continue downward, but will likely reach a turning point and track upwards when quantity is large enough to no longer result in economies of scale.

Figure 17 shows demand and supply holding everything else constant at their mean values. For example, figure 18 diplays the effect income has on demand, holding supply constant. Raising median income shifts the demand curve to the left, reducing the number of mobile homes rented and increasing price. When the median family income of a state is $11,000 instead of $9135, the equilibrium between supply and demand is at a point where 0.22 fewer units per thousand households are rented at a price that is about five dollars greater, holding supply constant. States with low median incomes would have a demand curve shifted to the right, resulting in a greater quantity sold at a lower price. As shown, when median income is $7000, .26 more units per thousand households are rented at a price about six dollars less than the price when income was $9135.

In a similar fashion, the shifts in the supply curves, with demand constant,

Figure 18 Effects of Income on Supply and Demand
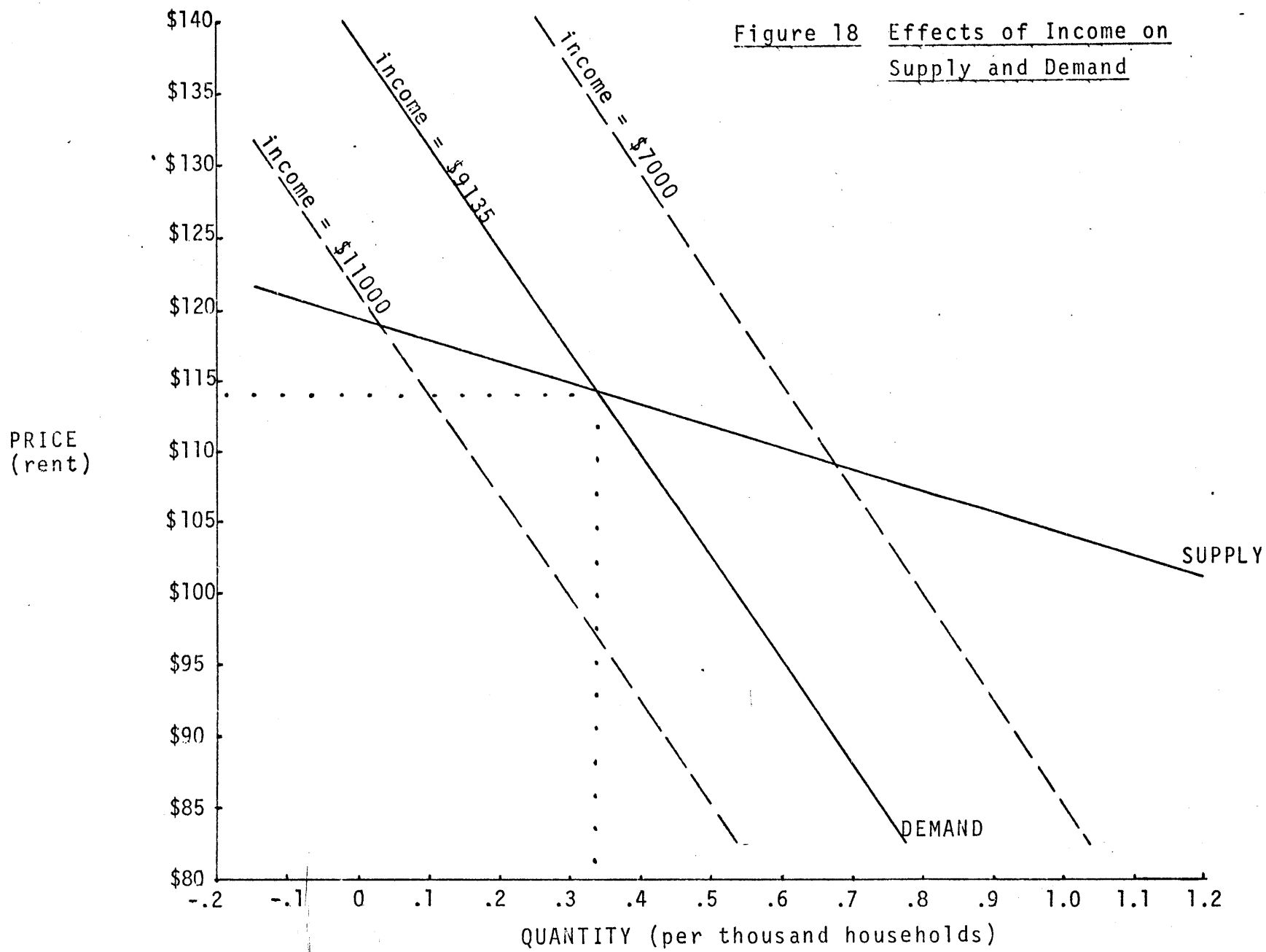
Figure 19   Effects of BAN on Supply and Demand

ban = 78%

ban = 16%

ban = 0%

PRICE
(rent)

SUPPLY

DEMAND

QUANTITY (per thousand households)

90
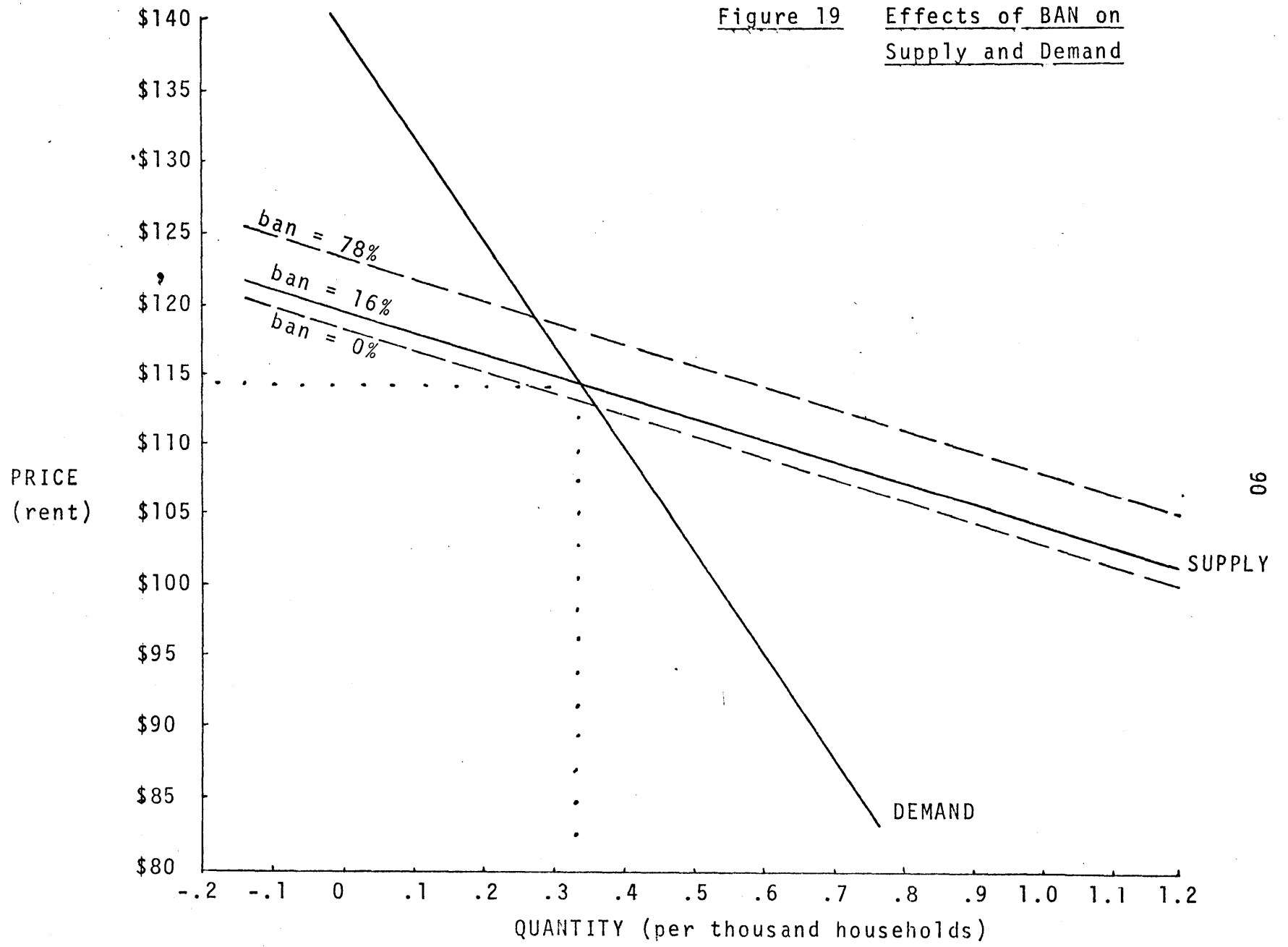
Figure 20   Effects of NONRES on
Supply and Demand

PRICE
(rent)

nonres = 90%
nonres = 22.3%
nonres = 0%

SUPPLY

DEMAND

QUANTITY (per thousand households)
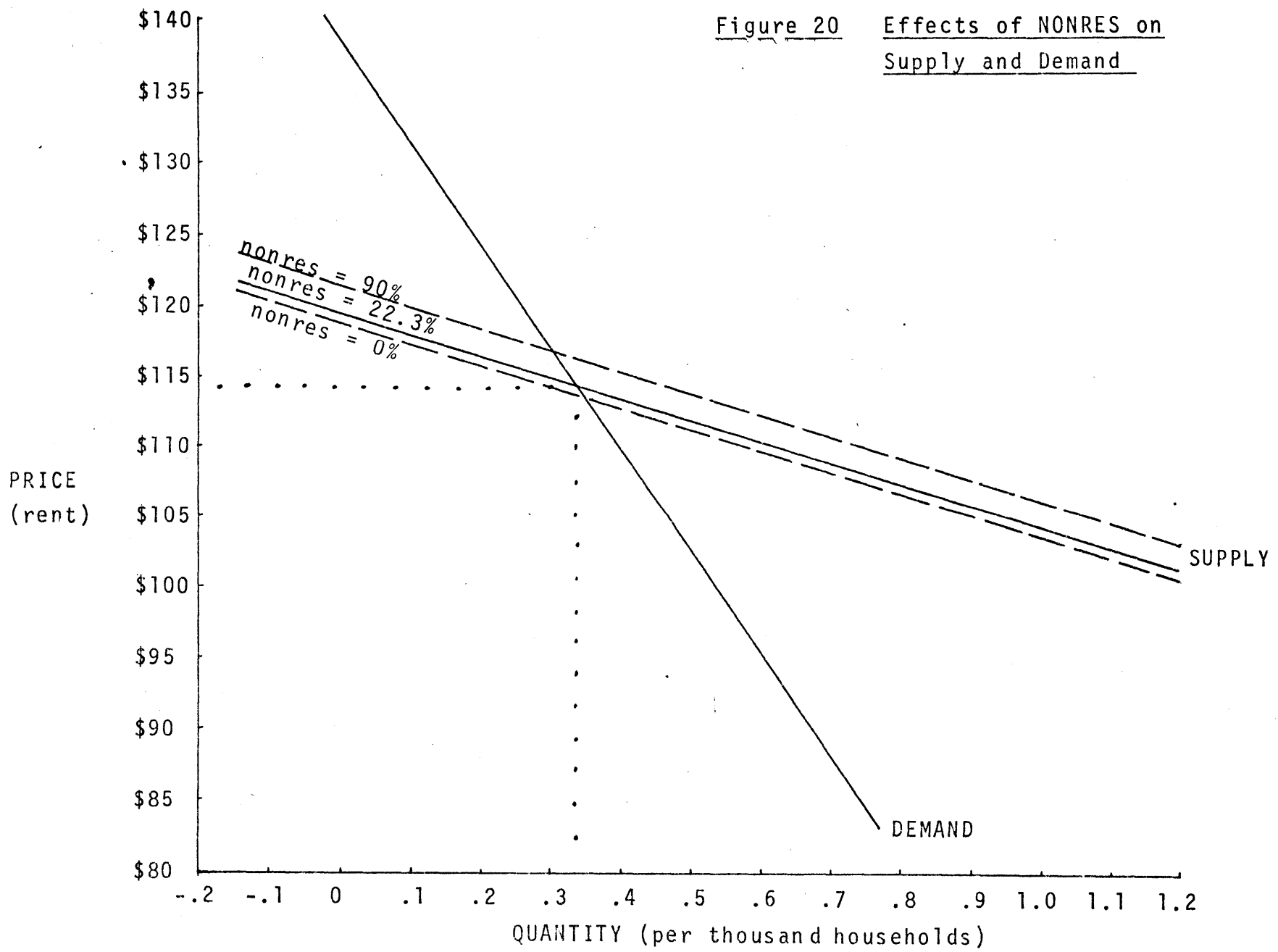
Figure 21   Effects of PARKS on Supply and Demand
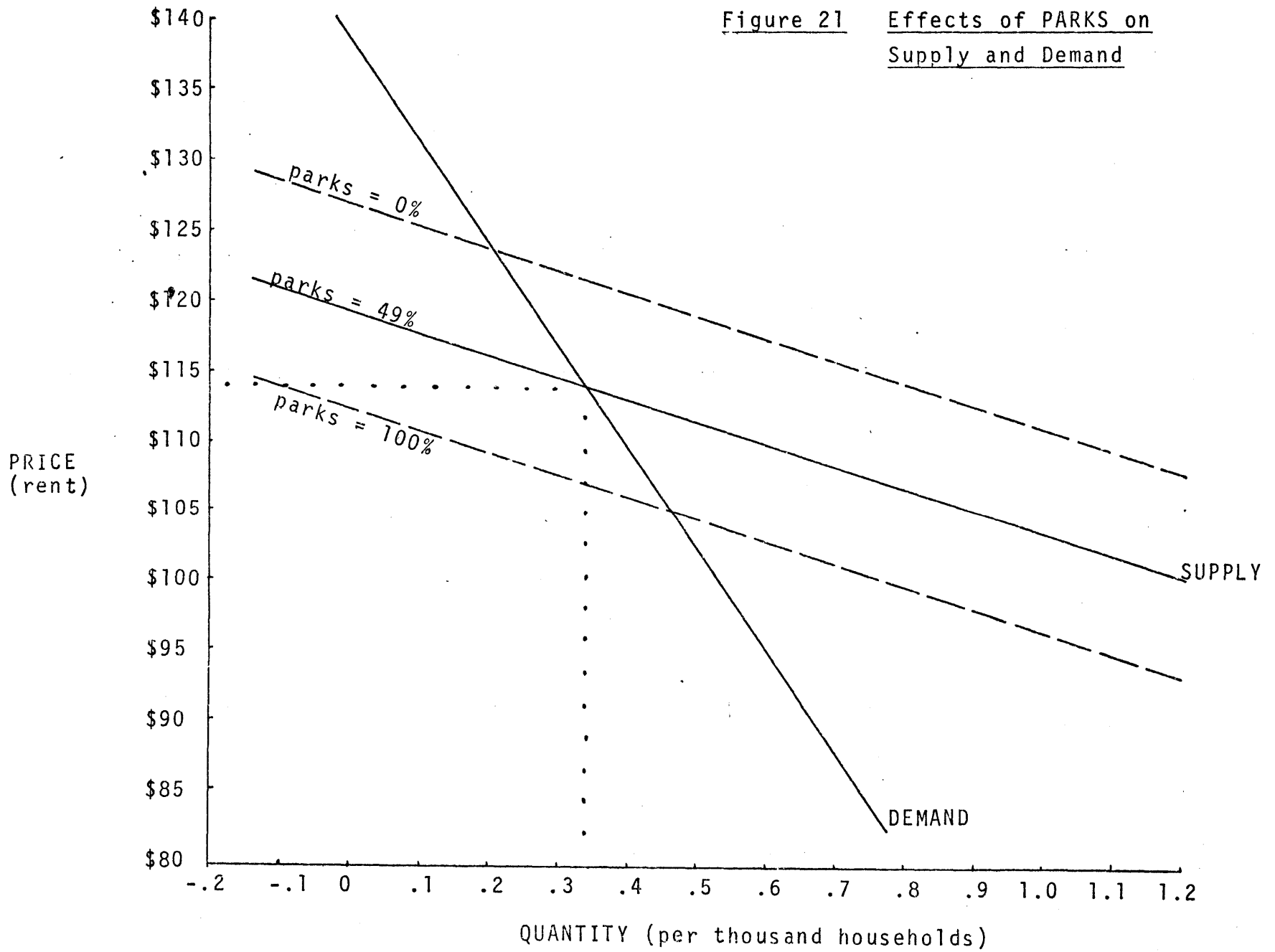
possible from changes in BAN, NONRES, and PARKS are shown, respectively, on figures 19, 20, and 21. BAN, which has a mean of 16.5%, ranges from 0% to 95% in the sample. The shifts in the supply curve when BAN is 0% and 95% are shown, resulting in new equilibrium points. A higher value of BAN results in less quantity at a higher price and less BAN results in a greater quantity at a lower price. The effects of changes in NONRES and PARKS are also shown for the maximum and minimum values of each that occurred in the sample.

Analysis - Rental Market Reduced Form Equations

The information in the preceding figures can be quantified when the demand and supply equations are solved for the price and quantity reduced form equations. This yields:

$$QUANTITY = 1.33 - 0.00092 \text{ BAN} - 0.00040 \text{ NONRES} + 0.0027 \text{ PARKS}$$
$$-0.00012 \text{ INCOME} + 0.15 \text{ HSHD\_CHG}$$

$$PRICE = 105.68 + 0.062 \text{ BAN} + 0.027 \text{ NONRES} - 0.18 \text{ PARKS}$$
$$+ 0.0020 \text{ INCOME} - 1.86 \text{ HSHD\_CHG}$$

It is evident from both the reduced form coefficients and figures 19, 20, & 21, that the impacts of changes in BAN and NONRES are not as great as changes in PARKS, the difference being about one order of magnitude. Also, as noted earlier the effect of more restriction to parks, as opposed to the effect of BAN and NONRES, is to depress price and increase quantity in

the rental market. This is attributed to the economies of scale a large landlord in a park would have contrasted with single units on individual lots owned by smaller landlords.

Analysis - Entire Market

Since observations on price were not available for owner-occupied mobile homes, supply and demand equations could not be estimated for this market. It is possible to estimate the quantity reduced form equation when price is solved out of the demand and supply equations.

In terms of the coefficients of the demand and supply equations on pages 80 and 81, this quantity equation is:

$$Q = a_1/(b_1-a_1b_1)\ C_S + 1/(1-a_1)\ C_D + a_1b_2/(b_1-a_1b_1)\ BAN + a_1b_3/(b_1-a_1b_1)\ PARKS$$
$$+ a_1b_4/(b_1-a_1b_1)\ NONRES + a_1b_5/(b_1-a_1b_1)\ BUILD\_CST + a_2/1-a_1\ INCOME$$
$$+ a_3/1-a_1\ HOUSE\_CST + a_4/1-a_1\ HSHD{<}35 + a_5/1-a_1\ HSHD\_CHG + a_6/1-a_1\ TAX$$

Using ordinary least squares, this is estimated as

$$Q = 27.73 + 0.0070\ BAN - 0.018\ PARKS - 0.028\ NONRES - 0.0083\ BUILD\_CST$$

$$\ \ \ \ (3.00)\ (0.21)\ \ \ \ \ \ (-0.98)\ \ \ \ \ \ \ (-1.33)\ \ \ \ \ \ \ \ \ (-1.71)$$

$$-0.0086\ INCOME + 0.0CO14\ HOUSE\_CST - 0.011\ HSHD{<}35 + 1.15\ HSHD\_CHG$$

$$(-1.22)\ \ \ \ \ \ \ \ \ \ \ (0.025)\ \ \ \ \ \ \ \ \ \ \ \ (-0.78)\ \ \ \ \ \ \ \ \ \ (2.01)$$

$$-1.12\ TAX$$

$$-(-1.08)$$

$$R^2 = 0.532 \quad F = 4.03 \quad F_{95\%} = 2.21 \quad SSR = 252.6 \quad Std.\ err. = 2.81$$

Deleting TAX, HSHD<35, HOUSE_CST and BUILD_CST, this becomes

Q = 15.26 + 0.0053 BAN - 0.024 PARKS -0.024 NONRES - 0.0012 INCOME

    (4.82) (0.19)   (-1.22)   (-1.44)   (-3.34)

    + 1.42 HSHD_CHG

     (2.63)

R^2 = 0.467 F = 6.31 $F_{95\%}$ = 2.50 SSR = 287.4 Std. Err. = 2.83

In comparison with the quantity reduced form for the rental market
(page 93), the quantity equation for the entire market has a negative
coefficient for PARKS. This indicates that, contrary to the situation
in the rental market, the restriction of mobile homes to mobile home
parks depresses quantity and probably increases price in the entire
market. INCOME and HSHD_CHG have the same signs in both equations.
The coefficients of these variables in the entire market equation are
an order of magnitude larger than those in the rental market equation.
This is explained by the fact that the quantity of mobile homes in the
entire market is an order of magnitude larger than the quantity of mobile
homes in the rental market.

NONRES, the restriction of mobile homes to nonresidential areas, is the same
sign in both equations. However, it is two orders of magnitude larger in
the entire market, indicating that its negative effect on quantity is an
order of magnitude more important in the rental market.

The coefficients of BAN, complete exclusion, are of opposite signs in the

two equations. It may, however be zero in the entire market equations, indicating that BAN has a negligable impact on quantity in this market.

It is possible to test whether or not, in terms of this model, the two markets are structurally identical. The appropriate test of such overall homogeneity would be:[32]

$$F = \frac{(u'u - u^{*'}u^*)/((T_1+T_2-k) - (T_1+T_2-2k))}{u^{*'}u^*/(T_1+T_2-2k)}$$

which is distributed as F with $((T_1+T_2-k)-(T_1+T_2-2k))$ and (T_1+T_2-2k) degrees of freedom and where:

u is the vector of calculated residuals in the restricted case

u^* is the vector of calculated residuals in the unrestricted cases

T_1 and T_2 are the number of observations and

k is the number of parameters

Using ordinary least squares to estimate the rental reduced form equation and the restricted equation of both samples, this statistic becomes:

$$F = \frac{(1173.99 - 291.34)/(42 + 42 - 5) - (42 + 42 - 10)}{291.34/(42 + 42 - 5)}$$

$$= \frac{882.65/5}{291.34/74} = 44.80 \text{ with 5 and 74 degrees of freedom}$$

Since $F_{99\%}$ (5,74) = 3.30, the null hypothesis that the reduced form equations are the same can be rejected at a confidence level over 99%.

Summary

In terms of the intention of this chapter, given the limitations of this model, municipal land-use controls do have a demonstrable effect on the price and quantity of mobile homes sold in the United States. Specifically the restriction of mobile homes to mobile home parks, while it may in individual cases limit the quantity of rental mobile homes, has the net effect of increasing the quantity and lowering the rent in the rental moible home market.

The restriction of mobile homes to nonresidential areas has a net effect of raising the price and limiting the quantity of rental mobile homes in the market. Compared with the changes in price and quantity induced by restriction to park, the absolute value of the changes attributable to the restriction to nonresidentially areas are much less.

In the rental market, changes in price and quantity attributed to the complete exclusion of mobile homes are smaller still. It has the net effect of raising price and depressing quantity.

In contrast, the restriction of mobile homes to mobile home parks has the opposite effect in the entire market for mobile homes. Here the use of this restriction reduces the quantity of mobile homes sold. The result of the

rental market analysis, with this observation, tend to support the conclu-
sion that the restriction of mobile homes to parks depresses the quantity
of mobile homes in the entire market but concurrently raises the percentage
of rental mobile homes in this market. Whether or not this restriction
raises the price of mobile homes depends most on whether one believes the
supply curve to have a negative slope, as is the case in the rental market.
Since the null hypothesis, both markets being equivalent, was rejected
so strongly and since the demand variables (INCOME & HSHD_CHG) had very
similar coefficients in the quantity reduced form equations for both
markets, one might speculate this is not the case.

The restriction of mobile homes to nonresidential areas has the identical
effect on quantity in the entire market as the restriction to parks has.
Also, restriction of mobile homes to nonresidential areas has the same effect
on quantity in the rental market, though, its effect is an order of
magnitude larger in the entire market after taking into account the mag-
nitude of quantity in both markets.

The model tends to support the conclusion that the complete exclusion of
mobile homes has no effect on the quantity of mobile homes sold. This is
the most unexpected of all the results of this model. It is peculiar
that the two restrictions on mobile homes had a definate impact while
complete exclusion, which would seem to be the most severe of the three, did
not.

Of all the drawbacks to this model, the greatest may be its non-dynamic specification, especially when one considers the volitile cycles of the housing industry's history. Limiting the model to cross-sectional data, though it was unavoidable, may well have contributed to the insignificance of complete exclusion noted above, as well as the general applicability of the model.

Footnotes for Chapter D

1. Douglas Commission, Building The American City, (1968), at 208.

2. Robert Anderson, "Zoning Regulations Which Affect Mobile Homes," Mobile Homes - Legal and Business Problems - 2nd, (Practising Law Institute, N.Y.C., 1971) at 29.

3. Program Industrialization in the Housing Sector, Urban Systems Laboratory, Massachusetts Institute of Technology.

4. Woodalls, Mobile Home and Park Directory, (Simon & Schuster, 1972)

5. Robert Hegel, "Mobile Home Zoning . . . for Michigan Municipalities," Michigan Municipal League (1970).

6. Kaiser Commission, Technical Studies Vol II (1968) at 21

7. Market Facts Inc., Focus on the Mobile Home Market, (Owens-Corning, Inc., 1971).

8. Dealer's survey by Program Industrialization op. cit. (summer 1973)

9. Kaiser Commission, op. cit.

10. Lynne Sagalyn and George Sternlieb, Zoning and Housing Costs, (Center for Urban Policy Research, Rutgers Univ., Jan. 1973) at 15, 52.

11. Dr. Eugene Brady, "An econometric Analysis of the United States Residential Housing Market", Federal Home Loan Bank Board Working Paper #11 (November 30, 1970) at 41, 42.

12. Douglas Commission, op.cit.

13. L. Sagalyn & G. Sternlieb, op.cit.

14. See for example Market Facts, Inc., op. cit.

15. Bureau of the Census, "General Social and Economic Characteristics PC(1)-C1", U.S. Census of Population (1970) at table #178.

16. estimated from City Workers Family Budget, Bureau of Labor Statistics (1966) at 27.

17. Bureau of the Census, "General Population Characteristics PC(1)-Bxx" U.S.Census of Population (1970) at table #22.

18. derived from Bureau of the Census, "Population Reports P-25". (1968-69)

19. unpublished data, Program in Industrialization of the Housing Sector, M.I.T. Urban Systems Laboratory.

20. Ibid.

21. Ibid.

22. Ibid.

23. estimated from F.W. Dodge, Building Cost Estimator (1973, McGraw-Hill) at A-15.

24. U.S. Department of Housing and Urban Development, Housing Surveys Parts 1 and 2, UD/MP 72 (Nov. 1968) at 75.

25. Bureau of the Census, "Subject Report: Mobile Homes HC(7)-6", U.S. Census of Housing (1970)

26. Ibid.

27. Ibid.

28. Ibid.

29. see both U.S. Dept. of H.U.D., op. cit. and Market Facts, op.cit.

30 Blair, Fredrick, Mobile Homes and the General Housing Supply. (1960)

31. Bureau of the Census, "Subject Report: Mobile Hcmes," op.cit.

32. Johnston, Econometric Methods. (1972) at 198.

E. CONCLUSIONS IN LIGHT

OF PRESENT TRENDS

The present land-use control system is undergoing considerable change
in its content and source of authority. Many of these trends affect
mobile homes and parks, and, in some cases, the development of the mobile
home as a more significant housing resource.

The use of the restriction of mobile homes to mobile home parks, as con-
trasted with the more constant level of the two other controls considered
earlier, has increased significantly over the past decade.[1] Additionally,
in a 1973 survey of state planning officials,[2] a majority expected still
further increases in the use of this restriction by the municipalities in
their state while expecting no change or decreases in the use of complete
exclusion and the restriction of mobile homes to nonresidential areas.
This will mean that the mobile home park will become an even more dominent
form of land-use by mobile homes than it is now (in 1968, sixty percent
of new mobile homes were located in a park[3]).

This rise in the use of the restriction of mobile homes to mobile home
parks partially reflects a recent change in the underlying motivations
for its application. The original reason for its use was a response to
small unsightly backyard trailer parks infringing on the residential
neighborhoods and for reasons of public health and sanitation. It is
more frequently used today as a part of a whole genre of regulatory
devices seeking to directly effect the quality of development. For example
one state official has recently stated that

"(The) Planning and Zoning Commissions are now requiring that all
mobile homes be confined to mobile home parks with all proper

sanitary facilities, electrical underground lines, beautification
programs such as a certain number of trees per acre, separate
laundry facilities for homes that do not contain washers and
dryers, separate enclosed storage areas, etc."[4]

The most important of these regulatory devices being applied to mobile
homes are subdivision controls. Long applied to conventional housing,
they involve the imposition on the developer of various requirements
on the project such as minimum area and number of spaces, sewers, recrea-
tional areas, roadways and landscaping. The exact details of subdivision
controls on mobile home parks vary from municipality to municipality; how-
ever, they are typically flexible devices that require some sort of
decision or approval from a local administrative body. Consequently,
local governments can exercise more flexibility over the control of mobile
home parks. The choice is no longer between simply allowing mobile
home development with little control over quality and not allowing mobile
homes. As a result, park developers have been forced, in order to gain
approval, to construct parks of higher quality than they otherwise would
have.

This has two significant results. First, in so far as the decision to
exclude mobile homes is a result of a fear of declining property values
from the low-quality, low-income image of the mobile homes (see pages
34, 35, and 38), there is likely to be greater acceptance of mobile
homes. Subdivision controls can be used to create a park that is aesthe-
tically acceptable to the community.

Second, the trend towards higher quality parks creates a market for

innovative product development on the part of the mobile home industry.

As mentioned earlier (page 10), the Frank Lloyd Wright Foundation's

designs for a National Homes Corporation product line were scrapped

partially because of the lack of a suitable park development for them.

The observed trend to higher quality parks will alleviate this impasse

by providing a market for product improvements on the part of the manu-

facturers.

Equally important, the manufacturers will have demands placed on them for

a better product by the park developers. Developers will require higher

quality mobile homes for protection of their greater investment in mobile

home parks. They may be forced to develop higher density parks to offset

this investment. The municipality, in allowing a mobile home park, will

also require the park developer to guarantee standards for the mobile homes

as well as the park itself. These trends will aggregate the market for

mobile homes as the park developer deals more often with the manufacturers

to insure a product that meets his requirements. This will be strengthened

by the increased use of mobile home subdivisions as the consumer realizes

their advantages and the park developers turns to them to improve his

cash flow after making the larger initial investment required by the quality

parks. The increased use of the restriction of mobile homes to mobile

home parks will also facillitate rental mobile home developments (page 97),

which increases market aggregation.

This aggregation, allowing an individual to demand a quality unit at a significant volume is an important development in the mobile home housing market. Despite its innovative past, the manufacturers, with few exceptions, have recently been sluggish in the further development of their product. The aggregation mentioned above could change this, as developers contract with manufacturers for a large amount of quality units. An example of this situation is the Oriental Masonic Gardens development in New Haven Conneticut, designed by Paul Rudolph.[5] (Illustration on following page) Oriental Masonic Gardens is a 148 dwelling unit moderate income housing cooperative built under Sec. 236 nonprofit financing in 1971. Though it is legally not a mobile home park, it is a case of a developer contracting with a manufacturer in the mobile home industry for the delivery of a quantity of relatively innovative units.

The increased use of subdivision controls and the restriction of mobile homes to parks serve to encourage the construction of mobile home parks that are acceptable to the municipality, overcoming the fear of declining property values in that community. The favorable example of a quality park will also increase the acceptance of mobile homes under similar conditions in adjacent communities. However, a municipality's decision to exclude mobile homes due to fiscal considerations may not be measurably affected. Unless mobile homes increase in value enough to allow higher assessments (which is inconsistent with their role as low-income housing), municipalities will continue to exclude mobile homes because of fiscal concerns. The most equable answer to this and similar impasses is probably some form of property tax relief.

Illustration 2.   Oriental Masonic Gardens, New Haven, Conn.
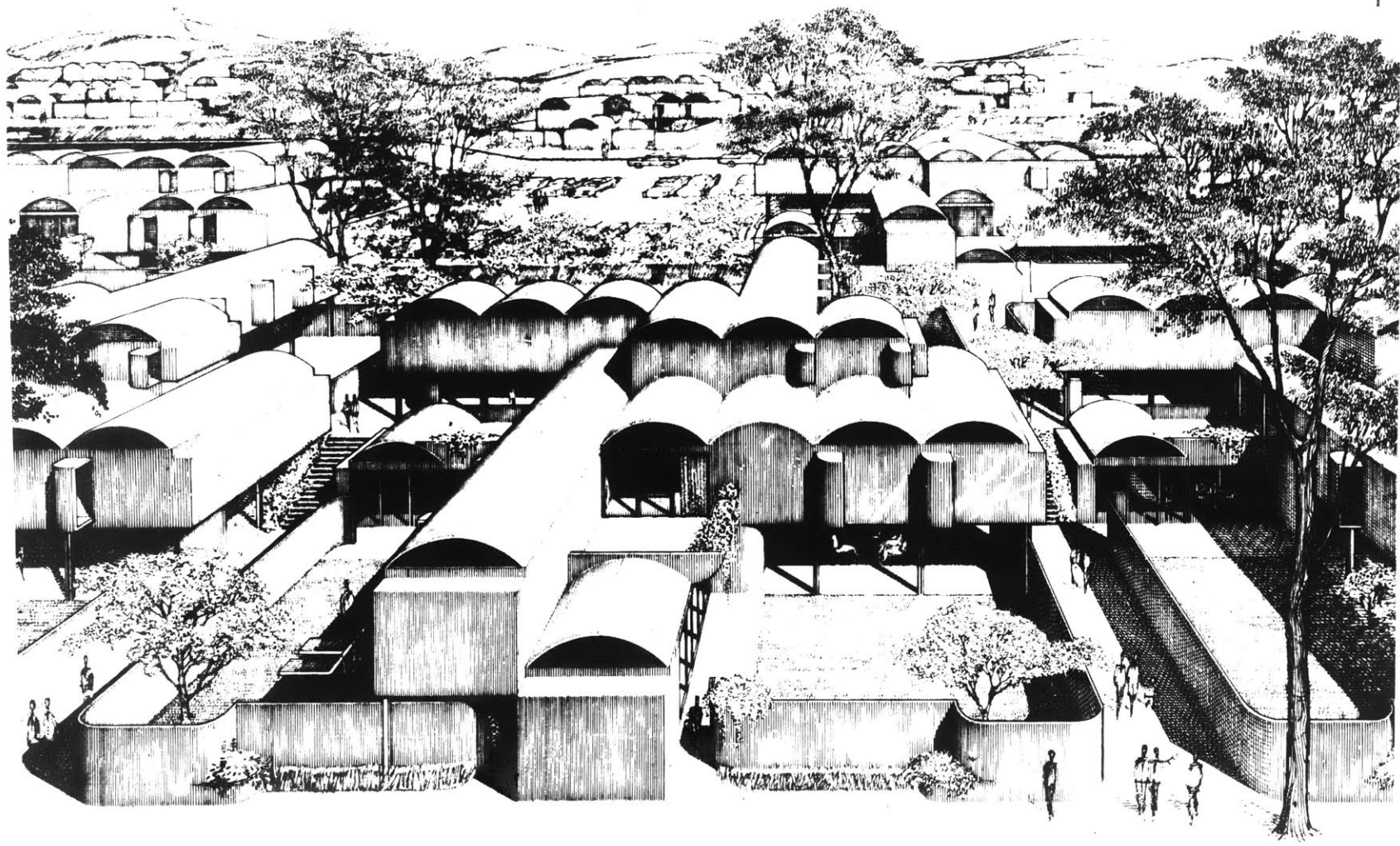
A real solution to the fiscal zoning and the property tax problem seems unlikely. However, the power of municipalities to exclude mobile homes and other low-income housing will be potentially limited by developments in two other areas. There is a trend towards greater judicial supervision of local zoning restrictions and an increasing state and federal assumption of land use policy.

Until recently, the courts have been reluctant to critically examine the limits of zoning. Traditionally, zoning cases have been represented in terms of police power vs. private property rights. Recently, the courts have looked beyond the property owners' free use of their land and have considered the area wide impact of local land use restrictions.[6] They are requiring that the zoning power be exercised in terms of the general welfare of the broader community. Although these cases do not include mobile homes, their reasoning is applicable to the problem of exclusion or restriction of mobile homes. The possible success of zoning challenges in the future will help reduce the complete exclusion of mobile homes from municipalities.

The court challenges present little possibility for a broad change in the land use control system, as each is limited to the factual situation of that case. A more direct approach is now being adopted by various state legislatures[7] and the Federal Government[8] which involves the pre-emption by the state of a municipality's power to control land development. The state legislation varies widely in kind and scope, reflecting the nature of the problems and the political climate of each state. In all cases

local governments have lost some of their autonomy in favor of promoting state and regional needs. While there is no direct mention of mobile homes in this legislation, it seems likely that local zoning ordinances will, in the future, partially reflect the metropolitan housing problem as well as local concerns.

In summary, it is likely to become more difficult for municipalities to completely exclude mobile homes. The increasingly more sophisticated use of subdivision controls and the restriction of mobile homes to parks allow a municipality and a park developer to negotiate sufficient tradeoffs to make a mobile home park more acceptable to the municipality. This will result in an larger market for a higher quality mobile home and a testing ground for innovative product development on the part of manufacturers.

The developers will increasingly be specifying standards for mobile homes in their parks and, in some cases, dealing directly with the manufacturers and assuming some of the functions of the mobile home dealer. They will be in a position to stimulate the manufacturers to produce a higher quality form of low cost manufactured housing, either out of their own interest or by an appropriate governmental intervention.

1. unpublished material from Program Industrialization in the Housing Sector, M.I.T. Urban Systems Labortory

2. Ibid.

3. U.S. Dept. of H.U.D. Housing Surveys, Parts 1 and 2 (UD/MP-72, November 1968) at 96.

4. Erik Thorne, Director, Division of Building Codes, State of Arizona.

5. see Architectural Record (September 1970) at 150 and "The Needed Revolution in Mobile homes," Planning (American Society of Planning Officials magazine, December 1973) at 17.

6. see, for example National Land and Investment Co. v. Easttown Township Board of Adjustment, 419 Pa. 504, 215 A. 2d 597 (1965); Appeal of Girsh 437 Pa. 237, 263 A 2d 395 (1970); Sasso v. City of Union City 424 F 2d. 291 (9th Cir. 1970)

7. see Hawaii's State Zoning Zct (1961), the Vermont Land Use and Development Act (1970), the Florida Environmental Land and Water Management Act (1972), the Wisconsin Water Resources Act (1965), the California Coastal Zone Conservation Act (1972), the New York Urban Develooment Corporation (1968) and the Massachusetts Zoning Appeals Law (1969).

8. see Sen. Jackson's Land-Use Policy and Planning Assistance Act, now nearing enactment as well as OMB A-95 review process and the environmental laws of 1969 and 1970 which control the use of private property as it affects environmental resources.