ONE ASPECT OF NEO MERCANTILISM AT THE REGIONAL LEVEL

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As regional economies grow and mature, they are subjected, somewhat by default, to a hodge-podge of economic policy. One of the most ubiquitous manifestations of economic policy decisions at a local level deals with the zoning of industrial land. In large communities, it is a matter of planning policy to allocate large amounts of physically valuable land resources to industrial development by means of rather strict industrial zoning. The purpose of such zoning is to create an adequate supply of industrial land to attract industrial employers to the community, adding to the tax base without adding proportionately to the demands on the community's public resources, and expanding the region's export industry base or economic base. Although the logic of this policy seems at first to be straightforward, there is some question about its effectiveness in achieving the objective. Such an attempt to secure a favorable inter-regional balance of trade by establishing a strong economic base in the community results in restricted usage of one of the most significant community assets - its land. This paper deals with an attempt to measure the degree of waste created by such policies.

Available Supplies of Industrially Zoned Land

Planning departments in the Seattle, Portland, San Francisco/Oakland, San Jose, Ventura, Los Angeles/Long Beach, Orange County, San Bernardino/Riverside, and San Diego SMSA's were surveyed by mail and telephone follow-up to determine the availability of zoned industrial land and unzoned land for which industrial zoning is planned. Although the reporting was ambiguous in some cases and in others local agencies lacked adequate data, a workable inventory of available and potentially available industrial land was developed for most areas.

Industrial Land In Use

The survey also sought data about the amount of industrially zoned land actually in use for industrial purposes in 1970. In many cases these data were unavailable. For those instances the industrial land in use was simulated by means of a land use model.[1] To test the accuracy of the simulations they were compared with actual land use data from those areas which could supply such information on the survey. The simulations of industrial land in use were within 10-15 percent of the actual data supplied on the survey questionnaire for those areas where such data are available, indicating that the land use simulation model is a suitably accurate device for use in the rest of the analysis.

Industrial Land Use Projections

The land use model was then used to convert locally prepared projections of population and/or employment to projections of industrial land absorption for the period from 1970 to 1990, in order to determine the portion of currently available industrial land in each SMSA that will be in use at that date. These projections were used as a proxy for estimating demand pressures on available supply to test the adequacy of supply as determined by planning agencies' zoning or plans for zoning. The projections were then extrapolated at a constant annual rate to determine the date when supplies of industrial land will be exhausted. These dates were anywhere from 2035 AD in the San Jose SMSA to 2238 AD in the City of Seattle (Exhibit I).

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[1] The model expresses industrial land use as a function of employment defined at a two digit SIC level. The model is described in "A Simple Land Use Model" presented at the First Pacific Regional Science Association meeting, 1969.

The net effect of the analytical steps is a quantitative expression of what most observers agree is extensive overzoning of industrial land. The assumptions were conservative.

1. Current industrial employment mixes were assumed to continue, even though it is expected that average employee density per acre may rise as the industries with greatest employee densities are also expected to be the fastest growing in many cases.
2. As regional economies mature, the manufacturing employment sector grows more slowly than the services, trade, and government sectors - the assumptions made no such allowance unless it was implicit in employment projections done locally.
3. Pressure on land prices - in the case of industrial land such pressures represent an imperfect understanding of the supply and demand factors - causes density to increase and land absorption to be less than the theoretical projections of the model. No allowance was made for this factor.

Although the analysis does indicate a long period of non-use for much level, well located urban land, some will argue that it may well be a necessary cost to assure the land's availability when needed to support a continued economic expansion. Two points can be made with regard to this argument:

1. If industrial zoning is disproportionately too great, much of the land may <u>never</u> be absorbed because supplies of residential, commercial, and public and semi-public lands to

support the derivative population growth will be exhausted before the industrial land is fully absorbed, placing a ceiling on the economy's ability to provide residential, retail, service, and public facilities and services for the employees who would work in the new plants on the industrial land.

2. Even if a supply sector disequilibrium doesn't occur at saturation, the extended waiting period for its absorption implies substantial waste of valuable land resources. Just as Keynes noted the waste implied by labor unemployment, land employment and under-employment imply substantial waste of wealth that is not ever recapturable. For that reason, long term interim uses should be considered for sites which have a long absorption period to allow for the time-related waste element.

Long Term Land Supply Disequilibria by Type

To test the hypothesis that other types of land use will be saturated before the industrial land is full absorbed, the land use model was run on the total population level compatible with the saturation level of employment to see if the requisite non-industrial land demand exceeded the supply of developable land in the SMSA. If, when all the non-industrial land is built out, there is still an excess of unbuilt zoned industrial land it can be argued that such an excess represents an absolute rather than a time-relative waste. For example, in Ventura County when all the currently available industrial land is built out, the derivative population would have theoretically absorbed 513,000 acres of urban land.

Ventura County has 306,000 acres of developable land. When all the zoned and planned industrially zoned land in Santa Clara County is built out, total urban land absorption would be 750,000 acres. Available developable land in Santa Clara County is about 425,000 acres. In both cases the areas will exhaust supplies of non-industrial land well before the industrial land supplies are exhausted. Industrial land use is typically a smaller proportion of total urban land uses - especially in newer urban areas than most realize (Exhibit II).

Long Term Interim Uses

If it is assumed that planners recognize the inefficiency implied by the artificial scarcity resulting from overzoning of industrial land, the waste may still represent a reasonable cost for the flexibility created by protection of a supply of uncommitted land.

Planners and others will admit that excess industrial land zoning is wasteful because vacant industrial land produces no income and thereby makes no immediate contribution to wealth. In one area studied, San Jose, industrial land recently sold for $20,000/acre while comparable adjacent apartment land recently sold for $40,000/acre and up - the difference in price being related to the immediacy of probable use of the apartment land to produce income and uncertainty about how soon the demand for industrial land would mature to permit its use to produce income. If the reasonably expected demand for industrial land does not mature for at least 50 years, the following proposal may be reasonable:

> The land could be bought for $20,000/acre, rezoned to apartment land and donated to the City for no compensation, delivery to be made in 2020 AD or 50 years from now.

Presumably, a life of 50 years would permit the builder to secure a adequate return and recapture his capital investment. The building would be physically obsolete. The landowner invests $20,000 and ground leases the property at 10 percent of $40,000 (its value for apartments) for 50 years. The present value of a 50 year $4,000 annuity discounted at 10 percent is $39,660. The cost of the annuity is $20,000, the landowner's wealth is increased by $19,660 the day he makes the deal. The building owner leasee is at a point of indifference as against any other land lease deal he might make because in any case he would have to let the building revert in 50 years. The landowner doesn't do quite as well as he could if he didn't offer to donate the City the land, but the difference isn't as significant as might be supposed. If in 50 years the $20,000/acre land appreciated to $50,000/acre, and the landowner sold the land in 2020 AD instead of giving it away, his wealth would be little different than when ownership reverts to the city.

Year	Income Without Gift To City	Income With Gift To City
1	$ 4,000	$4,000
2	4,000	4,000
3	4,000	4,000
Etc.	Etc.	Etc.
Etc.	Etc.	Etc.
50	4,000	4,000
Sale at $50,000	$50,000	0 In 50th Year
Present value of 50 year stream of income discounted at 10%-	$39,660	$39,660
Present value of sale of land discounted at 10%-	$ 1,050*	
Total Present Value	$40,710	$39,660
Difference in present value of the two options -	$1,050	

* $50,000 discounted at 10% per year has a present value of $1,050.

In other words, the right to sell the property 50 years from now has a present value of $1,050 discounted at 10 percent. The City receives assurance that the industrial land will be available before it is needed. It gets increased real estate taxes from the growth facilitated by a less restrictive market. It will get income from the land after 2020 AD. Other owners of apartment land lose because of increased competition and reduced scarcity. Owners of other industrial property get a little bonus because of decreased competition, industrial growth may slow (but this is doubtful), more people get more housing, retail facilities, etc. at less cost.

In a philosophical sense, by mobilizing the services of a scarce resource - land - for a 50 year period during which, otherwise, this asset - the land - would have been unproductive, wealth of the community is enhanced.

Conclusion

Using excessive industrial zoning as a means of attracting an expanded industrial sector may not be the most efficient alternative for achieving the objective - assuming, of course, that economic and population growth is a desirable objective. The community cost in terms of long term loss of use of a valuable resource and creation of an artificial scarcity of residential and commercial land may well be greater than the benefits that accrue from the probable slight increase in new industrial employment implied by maintenance of excess supplies of available industrial land. Because of the imperfection of the real estate market, the price of industrial land will tend to reflect a reservation price based on holding costs rather than the market value represented by the discounted present value of its ultimate expected value in use, making it difficult for the artificially induced excess supply to reduce prices as effectively as might be hoped. If there

is a 100 year supply of industrial land and current prices are $20,000, per acre, the average speculator will sell his land for use in 50 years. He will have to receive over $2.0 million an acre in 2020 AD to earn 10 percent gross return on a $20,000 per acre present investment for 50 years. Since this is the return opportunity faced by the industrial land investor, the current price of $20,000/acre is probably high in terms of the possibility of the land becoming economically productive at a high enough yield and soon enough to justify the $20,000/acre current price.

EXHIBIT I

ANALYSIS OF FUTURE INDUSTRIAL LAND REQUIREMENTS AND PLANS

Area	Projected Absorption of Industrial Acres/Year to 1990	Estimated Percent Of Total Zoned Or Planned Industrial Acres In Use		1990 Estimate of Vacant Industrial Land (Acres)	Additional Years to Absorb Industrial Land Assuming Constant Absorption Rate	Implied Population Required to Absorb All Zoned Industrial Land	1970 Population
		1970	1990				
Alameda County	137	26.8	38.7	14,108	103	4,009,000	1,073,184
Los Angeles County	720	32.5	42.5	82,404	114	21,625,000	7,032,075
Orange County	305	21.4	44.3	15,637	51	6,441,000	1,378,300
Portland SMSA	121	19.8	34.4	18,346	152	5,101,000	1,009,129
San Bernardino/Riverside SMSA	191	N/A	N/A	N/A	N/A	N/A	1,143,146
San Diego City	63	23.8	43.6	3,879	62	2,922,000	696,769
SMSA*	117	23.9	41.4	7,820	67	5,670,000	1,357,854
San Francisco SMSA	419	N/A	N/A	N/A	N/A	N/A	3,109,519
Santa Clara County	219 Zoned:	32.0	53.1	9,842	45	3,322,000	1,064,714
	- Planned:	16.4	27.2	29,842	136	6,486,000	-
Seattle City	11	51.0	52.0	2,730	248	1,039,700	530,831
SMSA	240	N/A	N/A	N/A	N/A	N/A	1,421,869
Ventura County	83	8.0	25.7	7,291	88	4,657,000	375,430

* Net industrially zoned acres represent 60% of gross acres in City of San Diego. This percentage was applied to the estimate of gross acres industrially zoned in the County (SMSA) where no net acreage estimate was available.

Source: Based on Land Use Model developed by Darley/Gobar Associates, Inc., Population Projections and Land Use Information Supplied by Local Planning Agencies.

EXHIBIT II

INDUSTRIAL LAND USE AS A PERCENT OF
DEVELOPED LAND IN LARGE CITIES

Percent	City	Date
19.8	Cleveland	1958
18.3	Buffalo	1958
17.8	Newark	1960
17.5	Birmingham	1958
17.1	Youngstown, Ohio	1951
16.9	Chicago	1956
16.5	Baltimore	1962
16.4	Providence	1953
15.3	Chicago	1961
15.3	Rochester	1954
14.8	St. Paul	1958
14.6	St. Louis	1950
13.8	New Orleans	1960
13.4	Louisville	1954
12.6	Queens Borough	1959
12.3	Boston	1950
11.3	Cincinnati	1960
11.2	Pittsburgh	1959
10.9	Columbus, Ohio	1953
10.9	Memphis	1953
10.6	New York City	1955
10.4	Boston	1958
10.0	Minneapolis	1958
9.9	New York City	1959
9.9	Sacramento	1953
9.9	Portland, Oregon	1950
9.6	Dayton	1954
9.6	Dayton	1960
9.6	Los Angeles	1960
9.1	Brooklyn Borough	1959
9.0	Portsmouth	1960
8.7	Manhattan Borough	1959
7.6	Richmond Borough (NYC)	1959
7.4	Syracuse	1959
7.4	Dallas	1960
7.3	Albany, N.Y.	1957
6.9	Detroit	1954
6.7	Bronx Borough	1959
5.8	Hartford, Conn.	1954

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Industrial Land Use as a Percent of Developed
Land in Large Cities

Percent	City	Date
5.8	Long Beach	1954
5.2	Phoenix	1958
5.1	Dallas	1950
5.0	Seattle	1953
4.8	San Antonio	1956
4.6	Ft. Worth, Texas	1960
4.0	Oklahoma City	1961
3.7	San Diego	1958
2.8	San Antonio	1951
2.7	Miami	1959
.7	Washington, D.C.	1955

Source: Niedercorn, John H., and Edward F.R. Hearle, Recent Land Use Trends in Forty-Eight Large American Cities, the Rand Corporation, Santa Monica, California, September 1963.