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Effect of the Supply of Low Cost Housing on In-Migration of the Unskilled

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By

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This symposium is centered around the "problems" of low cost housing, and suggested topics range from construction methods and research through housing system management. The implication throughout seems to be that low cost housing is beneficial to the city, so that the only problems to be solved are to find the most efficient and effective ways to increase and improve the low cost housing stock. From a systems point of view, however, housing is only one of many subsystems making up an urban system. Before concluding that low cost housing is beneficial, it seems appropriate to study its interactions with other parts of the urban system.

A recent vehicle for studying these interactions is the Urban Dynamics simulation model of Dr. Jay W. Forrester¹. In Professor Forrester's model low cost housing ("underemployed housing" in his nomenclature) is one of nine principle state variables interacting dynamically in a model intended to simulate the growth and decay of a typical urban area. Conditions in the model change through simulated time until they reach an "equilibrium" which is intended to represent the "inevitable" condition of a mature urban area. This equilibrium predicted by the model is characterized by very high (45%) unemployment of the unskilled, an excess of low cost housing, high tax rates, and insufficient industrial employment.

Forrester's model consists of a complex set of interacting feedback loops devised according to the methodology first published in his 1960 text, Industrial Dynamics². A major problem in the urban area as portrayed in this model is the accumulation over time of an "underemployed" (unskilled) population greater than the city's capability to provide unskilled jobs or to support at reasonable tax levels. High tax levels, land shortage as the urban area fills, and a number of other interacting factors reduce the rate of formation of new employment opportunities and the relative proportion of skilled and professional residents, accentuating the problem.

In the model the accumulation of unskilled in the urban area is caused by unskilled in-migration, which continues as long as the urban area is more "attractive" than the surrounding environment (the rest of the country). The "relative attractiveness" of the urban area for unskilled in-migration is, in turn, modeled as the product of a number of factors, of which the most important are the availability of unskilled jobs and the availability of low cost housing. For example, when the city has only 3/4 as many "underemployed" persons as the available low cost housing would shelter, in-migration is 70% above "normal", but existence of only 3/4 as many underemployed workers as unskilled jobs leads to only a 60% increase in in-migration. Forrester emphasizes the interdependence of these factors: (1, page 118)

"...the city is powerless to change its composite total attractiveness...Some attractiveness components can be improved if others are simultaneously made less attractive so that the composite remains the same."

Forrester then employs his model to simulate a variety of conventional programs for urban improvement. Construction of new low cost housing, the program most important to this symposium, increases one factor governing unskilled in-migration, so that other factors, (especially the unemployment rate) must worsen according to the above "attractiveness" logic before equilibrium returns. Conversely, Forrester tests in his model a program of "slum housing demolition", in which deteriorated housing is removed without replacement in a continuing program so that the supply of low cost housing is maintained below demand. As the attractiveness of the urban area for unskilled in-migration due to lack of housing availability decreases, other factors (employment opportunity, enterprise formation, tax levels, and opportunity for upward socio-economic mobility) improve, and the simulated city returns to economic health. Accordingly, Forrester recommends the continuing demolition of low-cost housing, rather than its construction, as a major solution to urban ills.

During an analysis of the Forrester Urban Dynamics model as part of my PhD dissertation³, I identified a variety of inadequacies in model constants and relationships. One of the most critical factors is the importance he assigns to the adequacy of the housing supply as a determinant of unskilled in-migration. Although he models this factor as even more important than job availability, he provides no quantitative justification for this assumption. If indeed, it is so important, Forrester's view of low cost housing construction as a threat to urban health rather than a benefit may have some validity. Accordingly, it seems important to attempt to quantify the influence of housing availability on migration.

Some semi-quantitative information on the influence of housing availability may be found in the literature. In a study of British workers, for example, Amelia Harris⁴ found that some 46% of these workers would consider moving if they lost their present jobs. These potential movers (1,756 men, 259 women) cited without prompting the following factors among those that would have to be "satisfactory" before moving:

Factor	Men	Women	Both Sexes
Housing	81.6%	73.0%	80.5%
Pay/promotion prospects	62.5%	56.8%	61.7%
Security of job	39.9%	25.5%	38.1%
Amenable surroundings	16.9%	18.9%	17.2%
Good schools	16.0%	5.4%	14.6%

When prompted, 95% of these potential out-migrants thought housing important.

On the other hand, Foote reports (5, page 153):

"Among a randomly selected sample of in-migrants to Kalamazoo, Michigan, 57 percent of the reasons given for moving were related to economic or job considerations...Only 4 percent were related to housing."

In the Guayana region of Venezuela the government made low cost "Vivienda Rural" homes available, hoping to stem the flow of people to urban slums. Cottingham and Gasparis found this had little effect

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on migration to nearby Ciudad Guayana. They reported (6, page 50)

"The overwhelming motive voiced for migration is to improve one's job and income situation in general, rather than housing in particular."

In one of the most thorough analyses available, appropriately entitled Housing and Labour Mobility, Cullingworth attempts to determine the effect of housing availability on European labor migration.

Cullingworth begins optimistically by stating, (7, page 7):

"...the satisfaction of the housing requirements of the people who move is essential to the appropriate balance between manpower resources and the demand for workers. The rate of mobility of people is considerably influenced by the absence or presence of appropriate housing at the places with job vacancies, and the supply of such housing is therefore critical to the realization of a nation's economic goals..."

but his final paragraph closes with a considerably more cautious conclusion, (7, page 73):

"Finally, it needs to be reiterated that housing is only one factor in labour mobility and it is a fact that even in the expanding employment areas with acute housing shortages there is a considerable inward migration of labour. Further, it is an open question as to how far a significant increase in the provision of housing for migrant workers would result in a significant increase in labour mobility. Certainly it should not be thought that housing on its own is sufficient. There is a wide range of related public and social services which need to be provided as well as 'housing'."

Routh views both housing and job availability as enabling factors rather than as prime motivators for migration. He concludes, (8, pages 142-3):

"...we look for mobility in man in his role as manpower and are surprised when he breaks the rules laid down for the behaviour of economic man. The truth seems to be that, though man sometimes moves in his role of economic man, more generally it is in his role of husband or father, a son returning to his family or escaping from his mother-in-law, or obeying one or more of the multitude of conscious or unconscious urges that make up human motivation.

"And yet it might be objected, in the aggregate migration does play an economic role; manpower does move from depressed to developing areas. The figures clearly show that this is so, however difficult it may be to catch him in the act.

"For this, I present the following hypothesis. At any moment there are a large number of people who would rather be somewhere other than where they are. Their desires may fix themselves on a certain area or sort of area. They would like to live at the sea or in the mountains or near a river; in a big town or a small one; near or far from relatives or friends; in some ancestral country and so on and so forth. But there are two overriding necessities before effect can be given to these desires: a suitable job and a suitable house in the area of choice. If these two restraints did not operate, movement of course would be even freer than it is; but they perform a function, as it were, of a national sorting machine. While there are people who would like to move in any direction one might like to suggest, the possibility of movement will be greatest to those areas where available jobs are increasing and new houses are being built. As a result of a probability process, migration is then strongest towards areas of economic development, while those who wish to move in the opposite direction will have to wait longer before their opportunity occurs."

In summarizing the findings of these authors, we do find that the qualitative conclusion that a substantial inadequacy in the supply of low cost housing can act as a deterrent to in-migration of the unskilled. Indeed, the zoning practices of our American suburbs which effectively exclude new low cost housing provide a current and controversial confirmation of this thesis. On the other hand, we find little evidence that a deliberate program of improve-

ment of the quality and quantity of low cost housing will induce substantial changes in migration patterns, even from authors (Cullingworth⁷, Cottingham and Gasparis⁶) who have consciously looked for such a relationship. (The suburban case, where existing low cost housing is almost completely lacking, would be expected to provide an exception to this observation.)

Some caution should be observed in drawing too many conclusions for American cities from observations made of European migrants and Venezuelan poor, since cultural differences may lead to error. Perhaps the most quantitative evidence drawn from American data is the negative evidence of analysts who have obtained good correlation of migration rates between urban areas without consideration of housing availability. Examples are the correlation of migration rates against employment levels by Lowry (9, page 55) and Bramhall (10, page 150) and against unemployment levels and median labor income by Majek (11, page 103).

Returning to the Forrester model, we find a basic assumption in model construction is that an excess of low cost housing supply over demand acts as a powerful magnet in drawing disproportionate numbers of unskilled persons into the city. It is this assumption, expressed in model relationships, that causes Forrester to conclude that low cost housing construction programs are a threat to urban economic health. After analysis of the urban literature, I conclude that this assumption is unjustified, and that Forrester's conclusion deriving from it cannot be considered valid.

Forrester's model¹ contains one more important flaw regarding low cost housing. In simulating an increase in low cost housing construction in the urban area represented by his model, he assumes that conditions in the surrounding environment (which includes all other urban areas) remain unchanged. But more and more of our migration patterns are between cities, rather than from our decreasing rural population to urban areas. If we assume instead that low cost housing is being improved at about the same rate in most cities, his simulation loses even further validity.

In conclusion, it would appear that the supply of low cost housing acts only as a deterrent to migration of the unskilled when it is in substantial undersupply. No convincing evidence exists to support the thesis that an excess supply of low cost housing can have a damaging effect on urban economic health through in-migration effects. It would seem, therefore, that we may safely ignore this consideration in our analysis of low cost housing programs.

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