Comment on

INCOME AND URBAN RESIDENCE: AN ANALYSIS OF CONSUMER DEMAND FOR LOCATION

by

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In the September 1977 issue of the American Economic Review, William C. Wheaton attempted to show that the long-run spatial theory of the New Urban Economics "empirically contributes little to the explanation of American location-income patterns" (cf. p. 631). However, Wheaton's conclusion is not correct, because neither the model nor the empirical test he used is appropriate, for the following reasons:

A. The model

(i) Wheaton uses both land and housing as arguments of the utility function (cf. eq.(1), p. 621). Usually, the demand for urban land is derived from (the equilibrium or disequilibrium on) the housing market. Therefore, both land and housing cannot enter the utility function. Either housing, which was used by Muth (1969), is an instrument of the household or land, which was used by Alonso (1964). Obviously, housing is the appropriate instrument of the household.

(ii) He derives the gradient of the bid land rent (cf. eq. (4)) and its steepness with respect to income (cf. eq. (5)) from demand specifications only. However, land rents are determined from the market conditions on the housing market, which in turn is determined by the demand for and the supply of housing. Therefore, the gradient of the bid land rent and its steepness with regard to income is a function of the utility and structural cost specifications. This holds even if, apart from housing space, no attributes of housing, such as finishing of a dwelling, garden, landscape, etc., are taken into account (cf. Beckmann/Büttler (1977)). Demand and supply specifications are interdependent through the housing attributes. In addition, the land rent gradient also depends on the land-use regulations.

(iii) He presents an equilibrium condition (cf. eq. (8)) which does not consider the fact that the same land lot can be used by various households. People can be squeezed together through multi-storey buildings, though holding the land lot (or area of building) constant.

B. The empirical test

(iv) His short-run empirical test is performed with the assumption that households do not optimize their utility with respect to any instrument (cf. eq. (9)-(11)). Do consumers really not maximize in the short run? Given his assumptions, one would expect that consumers maximize their utility in the short run, but the supply of housing is fixed. The latter implies that the attributes of housing are given to consumers, thus, demand and supply specifications are independent. Therefore, the land rent gradient is, in the short run, a function of the demand specifications only.

(v) His test is also based on the level of the land rent (cf. eq. (11)). Since the level depends also on the (short-run) macro condition of the city (population, city boundaries), his demand-related test should be performed with the land rent gradient.

(vi) The locational ordering of the income groups must be the same both in the short run and in the long run (in his model). This is due to the fact that on its own the steepness of the (long-run) land rent gradient (cf. eq. (5)), which was derived from the short-run test, is responsible for the ordering of the income groups. Eq. (7) determines only the ring boudaries of the groups and eq. (8) only the various utility levels of the income groups.

Finally, Wheaton's conclusion is not that rich people live, at least in the long run, closer to or farther from the CBD than poor people, according to the values of the elasticities in question. Rather he attempts to show that income has no influence on locational ordering at all, i.e. the elasticities cancel each other out. However, this remains an open question.

References

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Wheaton, William C. (1977): "Income and Urban Residence: An Analysis of Consumer Demand for Location", The American Economic Review, Vol. 67, No. 4, September.