

Comments on “Consumption and Investment Motives in Housing Wealth Accumulation of Spanish Households” by Arrondel, Badenes, and Spadaro

Manuel Arellano

Banco de España, 24 April 2007

1. Summary

- This paper estimates a model of housing demand and tenure choice on Spanish EFF data, following Ioannides & Rosenthal (1994) and Arrondel & Lefebvre (2001).
- The paper distinguishes between housing investment (h_I) and the amount of housing consumed (h_C). These variables are not observable, so they are treated as latent.
- The observables are the quantity of housing owned and housing tenure status.
- Tenure depends on $h_I - h_C$: Households with $h_I - h_C \geq 0$ are homeowners whereas those with $h_I - h_C < 0$ are renters. Homeowners with large $h_I - h_C$ and renters with $h_I - h_C \lesssim 0$ own rental housing (Henderson–Ioannides).
- Accordingly, households in the EFF are classified into 4 tenure groups:
 1. renters that own no housing
 2. renters that own some housing
 3. homeowners that own no rental housing
 4. homeowners that own rental housing.

- An ordered probit is estimated using wealth, income, and other household characteristics as explanatory variables.
- For homeowners that own rental property both h_I and h_C are observed.
- Separate regressions are estimated using this subsample, including Heckman's lambdas to control for self-selection. A test of equality of the two regressions fails to reject.
- R²'s are between 35 and 39 percent. In both cases income is the main predictor.

2. Comments on choice of variables

Dealing with empty properties and second homes in the tenure classification

- In Spain there is a large fraction of households owning a secondary residence, but the distinction between second homes and empty properties is not clear cut.
- Thus it may be difficult to distinguish between housing investment and housing consumption with a low rate of utilization.
- We need a description of the source variables contained in the EFF for constructing tenure categories, a discussion of alternative classifications, and robustness analysis.

Wealth and income

- The fact that wealth is measured at the time of the survey as opposed to the time ownership decisions were made creates several problems:
 - (a) It is not the determinant we would like to include in the demand equations.
 - (b) Past episodes of large increases in housing prices distort wealth depending on time since entering the market, and create an endogeneity problem.
 - (c) Net wealth is also influenced by the time of purchase through mortgage life.
- In fact, heterogeneity in time of purchase has been suggested as an explanation for income heterogeneity within neighborhoods (Ortalo-Magné & Rady, 2006).
- Current income is likely to be a noisy measure of the long term concept of interest.

- Ideally one would like to model transitions to ownership as opposed to a cross-sectional relation, especially since homeownership reaches 90 percent at age 55-64, but this is a dynamic problem that can hardly be analyzed with a single cross-section.
- Perhaps, the model would be best estimated separately for different age groups.

Data on rent payments for renters

- The consumption demand for housing stock does not have life of its own, but it is derived from the consumption demand for housing services.
- Why not using the information on rents paid by renters, which is available in the EFF?
- This could be a more accurate measure of demand for housing services for renters than the imputed housing stock obtained from the regression of homeowners.

3. Identification and empirical strategy

Identification by functional form

- The identification of demand equations is problematic. Solving selection problems by invoking *exclusively* Heckman's λ has been long discredited. This was probably already dated at the time of Ioannides–Rosenthal's paper and is more so today.

Exclusion restrictions

- The investment and consumption equations have different determinants that could lead to exclusion restrictions:
 - Consumption demand for housing will depend on household size and indicators for preferences for housing consumption.
 - Investment demand will depend on the covariance of housing risk with other assets, chiefly labor income risk.

Testing the theory vs. using the theory as an identifying restriction

- An aim of the paper is to perform an empirical test of the Henderson–Ioannides model. That is, testing whether housing tenure is determined by $h_I - h_C$ or not.
- However, since $h_I - h_C$ is not independently observed, econometric tests may have more to do with testing functional form assumptions than with testing the basic investment constraint in Henderson–Ioannides.
- So another perspective is to use the theory as an identifying restriction in order to determine the consumption demand equation, given investment demand and tenure choice.
- In this way we would get consumption demand elasticities as a difference:

$$\frac{\partial h_C}{\partial X} = \frac{\partial h_I}{\partial X} - \frac{\partial \Phi^{-1}(P_\tau)}{\partial X}.$$

4. Comments on the theory

Rent risk

- The model assumes that housing is a risky asset, but it does not seem to allow for rent risk.
- The only rent-risk in the Henderson–Ionnides model is to the landlord, not to the tenant, due to the moral hazard problem that the tenant may not properly care for the property (Sinai and Souleles, 2003).

Transaction costs

- Expanding or reducing the housing stock owned is costly, but there is a fundamental asymmetry between consumption and investment housing.
- Transaction costs here are not just those derived from taxation or legal expenses. Moving houses can be very costly in time and resources, including search costs.

5. Comments on the results

- The paper tests for equality of the two regressions and fails to reject. These results are read as evidence that the model cannot explain housing purchases (since $h_I - h_C \approx 0$?).
- Moreover, the authors conclude that in Spain only portfolio motives seem to be relevant for explaining the demand of home ownership. These conclusions seem adventurous in the absence of further discussion.
- Two specific remarks are:
 - Despite failing to reject the equality of the two regressions, there are several significant ordered probit effects (income, age, skill, education, marital status). So, perhaps there is a problem of identification of the separate demand equations, a measurement problem, or lack of power.
 - Equality of coefficients between the two equations is compatible with a rich behavior in $h_I - h_C$ driven by unobservables. After all more than 60 percent in the variances of demands are due to unobservables.