

Consumption and Investment Motives in Housing Wealth Accumulation of Spanish Households

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Housing in USA, France and Spain some facts

- Rate of ownership of main residence

- USA : 55 %
- France : 56 %
- Spain : 82%

- Percentage of National Wealth

- France : 50 %
- Spain : 70 %

Logic of accumulation of housing

- Dual motives of housing behavior
 - **Consumption motive** : demand of housing services
 - **Investment motives** : portfolio needs
- Theoretical models are more difficult to build (especially in a LCH model)
- Empirical works which take account of the two dimensions simultaneously are rare

Objectives of the paper

- Estimate the two dimensions of housing choice : consumption and investment
- In particular : is one of the motivation prevails ?

The behavioral model (Henderson & Ioannides, 1983)

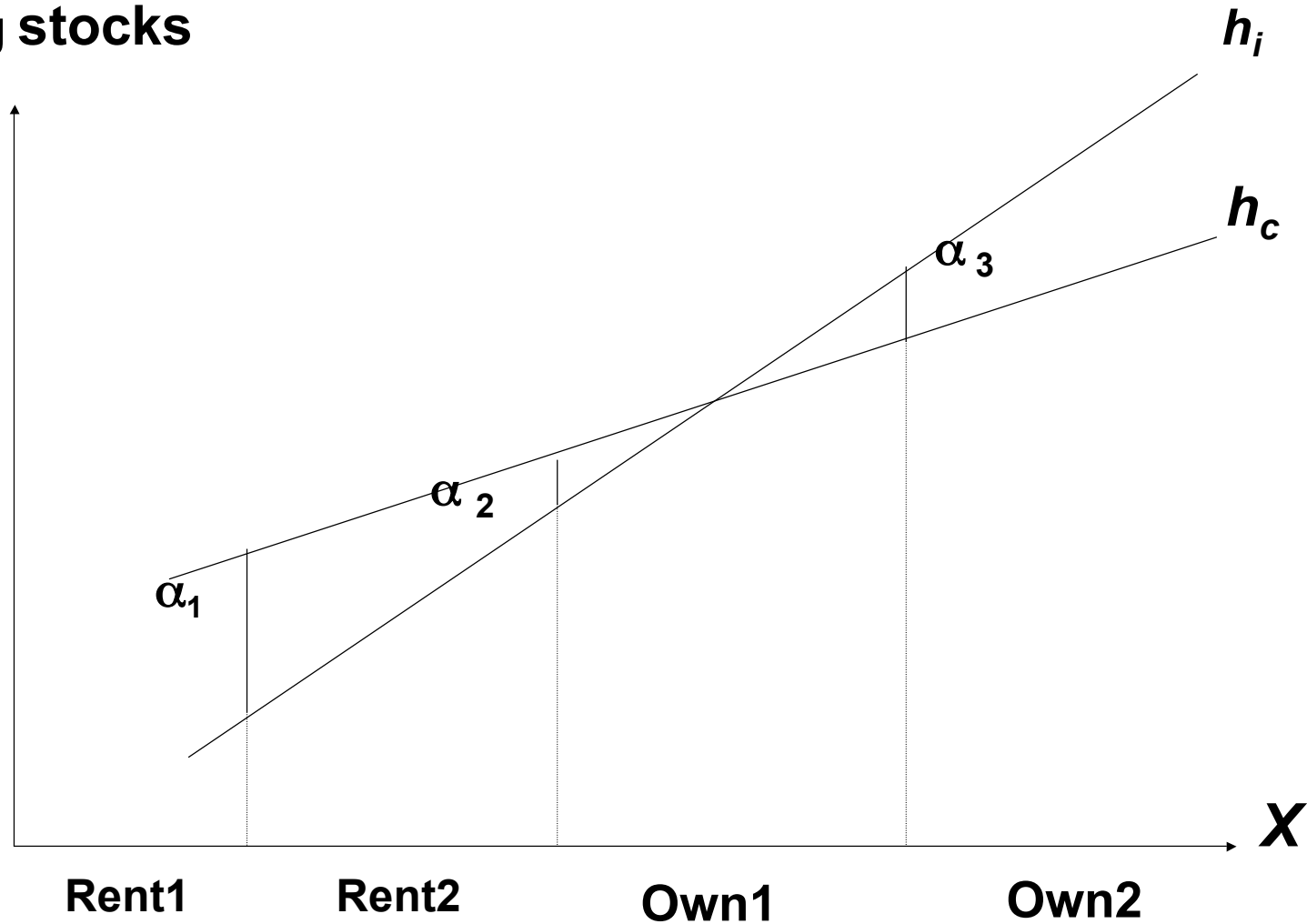
- Household k has a consumption demand for housing stock (derived from the consumption demand for housing services) : $H_C^k = H_C(X^k, e_C^k) > 0$
- Household k has a investment demand for housing stock (based on portfolio motives) : $H_I^k = H_I(X^k, e_I^k) \geq 0$
 - X^k : vector of explanatory variables
 - e_C^k, e_I^k : random errors (may be correlated)

The behavioral model (Henderson & Ioannides, 1983)

- H&I propose that in the absence of tax distortions, borrowing constraints and transactions costs, the decision to rent versus to own may be viewed in terms of the divergence between the desired amount of housing stock for consumption and for investment purposes : $(H_I - H_C)$

The behavioral model (Henderson & Ioannides, 1983)

Housing stocks



The behavioral model (Henderson & Ioannides, 1983)

- **Rent 1** : $H_I \ll H_C$ and household rents H_C and holds no housing for investment purposes
- **Rent 2** : $H_I < H_C$ and household rents H_C but holds also housing stock in its portfolio, H_I
- **Own 1** : $H_I > H_C$ and household own only its primary residence
- **Own 2** : $H_I \gg H_C$ and household owner occupies an amount of housing equal to its consumption demand, H_C , and holds an additional amount of housing stock in portfolio= $(H_I - H_C)$

The econometric model

- Consumption and investment demand functions for housing are supposed to be log-linear :

$$h_i^k = \text{Log}H_i^k(X^k, e_i^k) = X^k b_i + e_i^k$$

$$h_c^k = \text{Log}H_c^k(X^k, e_c^k) = X^k b_c + e_c^k$$

- The difference between H_I et H_C (in log form) :

$$J^k = h_i^k - h_c^k = X^k (b_i - b_c) + (e_i^k - e_c^k) = X^k g + w^k$$

The econometric model

- Housing subtenure is determined by:

$$-\infty < J^k < \alpha_1 \Rightarrow -\infty < w^k < \alpha_1 - X^k g \Rightarrow \text{RENT1}$$

$$\alpha_1 < J^k < \alpha_2 \Rightarrow \alpha_1 - X^k g < w^k < \alpha_2 - X^k g \Rightarrow \text{RENT2}$$

$$\alpha_2 < J^k < \alpha_3 \Rightarrow \alpha_2 - X^k g < w^k < \alpha_3 - X^k g \Rightarrow \text{OWN1}$$

$$\alpha_3 < J^k < +\infty \Rightarrow \alpha_3 - X^k g < w^k < +\infty \Rightarrow \text{OWN2}$$

- If e_C^k and e_I^k follow a bivariate normal distribution then w^k is distributed normally and we can use an ordered Probit model

The data :

Spanish Household Portfolio 2002

ASSET CLASSIFICATION	PERCENTAGE HOLDING THE ASSET	PERCENTAGE ON WEALTH (mean wealth: 141.702 euros)	
		On financial or non financial	On total wealth
Deposit and accounts	98,2%	41,9%	6,1%
Shares	12,5%	29,2%	4,2%
Mutual Funds	2,5%	6,3%	0,9%
Public Debt	1,9%	2,2%	0,3%
Money lender	3,9%	3%	0,4%
Pension plan	23,1%	15,8%	2,3%
Life insurance and annuities	1,1%	1,6%	0,2%
Financial wealth	98,5%	100%	14,5%
Primary residence	81,9%	80,9%	69,1%
Secondary	12,5%	11,8%	10,1%
Dwelling for renting out	6,8%	6,3%	5,4%
Transport other than cars	9,5%	0,3%	0,3%
Art and jewellery	18,2%	0,7%	0,6%
Non financial wealth	86,4%	100%	85,5%

The data :

Explanatory variables

<i>Variable</i>	Summary statistics
	Sample means (standard deviation)
Net wealth	357,533 (1,429,755)
Log Income	-1.391 (.9267)
Years working for current employer	5.99 (9.95)
Anticipation about future income	
Inferior (ref.)	.1093
Comparable	.6582
Superior	.2325
Both working in a couple	
No (ref.)	.8209
Yes	.1791
Age	54.95 (17.43)
Inheritance motive of saving	
No (ref.)	.9889
Yes	.0111
Professional Activity	
Farmer (ref.)	.0196
Self-employed	.0885
Executive	.0383
High-Qualified Employee	.0729
Low-Qualified Employee	.1309
High-Qualified Worker	.1153
Low-Qualified Worker	.0968
Farmer (retired)	.0576
Non farmer (retired)	.2596
Other	.1206

The data :

Explanatory variables

Education Level	
Illiterate (ref.)	.0385
Primary	.2985
Secondary or less	.2322
Other studies needing Secondary	.1740
University or more	.2569
Size of household	
One (ref.)	.1837
Two	.3117
Three	.2133
Four	.2007
Five	.0628
More than five	.0278
Marital Status	
Single (ref.)	.1925
Married	.6142
Cohabitanace	.0214
Separated	.0296
Divorced	.0167
Widow/er	.1256
Self-declared health status	
Very good	.1795
Good	.5629
Acceptable	.1824
Bad	.0647
Very bad	.0105
Public aid	
No (ref.)	.7927
Yes	.2073
Number of observations	5129

Results :

Determinants on the choice of the subtenure (Table 3)

- Critical values for J are increasing with α_1 and α_2 negative and α_3 positive, consistent to the predictions of the theoretical model
- Current income has positive and convex effects.
- The wealthier the households are, the greater their investment demand for housing relative to their consumption one is. Then they invest more in housing.
- Having a professional activity influences housing purchases positively. Conversely, having been unemployment in one's professional career or being unemployed has a negative effect on housing purchases. This fact can be explained by the liquidity needs that are greater or by a more risky professional situation, and finally by difficulties of entering the credit market.

Results :

Determinants on the choice of the subtenure (Table 3)

- The age of heads of households has a positive effect.
- Household size has a concave effect on housing investment: household with three or four members invest more than the other.
- The level of qualification also has a positive effect. The more educated the people are, the higher their income is and the easier it is for them to borrow.
- Unmarried couples, divorced and separated invest less in housing.

Results :

Determinants on demand functions

(Table 4)

- To study more precisely the logic of housing behavior of Spanish households, it is useful to identify the determining factors of demand, both housing investment and consumption.
- For that, we have considered four housing demand functions: *CONS1*, *CONS2*, *INVT* and *TRAD*.

Results :

Determinants on demand functions (Table 4)

- It is only in households of *OWN2* that it is possible to separate the housing investment demand, *INVT*, from that of consumption, *CONS2*.
- The housing demand of households of *OWN1* is a mix of both consumption motives and investment motives, for instance *CONS1*
- It is possible to consider a traditional housing demand that mixes consumption motives and investment ones for all owner-occupier households, for instance *TRAD*.

Results :

Determinants on demand functions

(Table 4 & 5)

- Main result of the paper : a F-test (about 1.29) leads us to accept the null hypothesis that parameters are the same in the two regressions (the critical value at a 5 % is 1.34).

➤ *So, we cannot distinguish the determinants in the housing demand for investment purpose from the housing demand for consumption motives.*

(CONS2=INVT)

Results :

Determinants on demand functions

(Table 4 & 5)

- Other tests (table 5) allow us to conclude that the other demands for consumption motives do not differ a lot from *INVT*, the housing demand for portfolio motives.
 - Spanish households give priority to investment purposes, not in consumption ones in their decisions of owning their primary residence.

Comparative Results : US-France-Spain (Table 5)

- In US (Ioanides & Rosenthal, 1994), the determinants of housing demand for consumption motive differ from housing demand for investment purposes. Portfolio motives do not affect demand for primary residence. Main residence may be considered as a consumption good.

Comparative Results : US-France-Spain (Table 5)

- In France (Arrondel & Lefebvre, 2001), the determinants of housing demand for consumption motives differ from housing demand for investment purposes. Consumption motives and portfolio motives affect demand for primary residence. Main residence is both a consumption good and an asset.

Conclusions

- We cannot study housing demand for primary residence in Spain by ignoring its portfolio dimension.
- Housing accumulation has to be analyzed in a portfolio choice model which integrate specificities of housing (liquidity, durability, transaction costs...)
- Wealth motives (life cycle saving, precautionary saving, bequest...) seem to prevail to explain housing wealth accumulation in Spain