

The Impact of Retiree Migration on Housing Markets: A European Experience**Paloma Taltavull de La Paz**, Universidad de Alicante, España**Karen M. Gibler**, Georgia State University, US**Vicente Rodríguez**, CSIC, España**José Manuel Casado**, Universidad de Alicante, España**Mari Ángeles Casado**, Universidad de West England, Bristol, UK**Abstract:**

We investigate the economic impact of international retiree migration into a concentrated geographic area. An immediate impact is expected in the housing market as price rises and then new houses are built for the immigrants. We use weighted least squares to estimate a system of price and housing equations to evaluate the reaction to this inflow using data obtained in a survey of retirees in Alicante, the main Spanish province receiving retiree migration from northern Europe during this period. We find that the influx produces a shock in the market; however, the retirees continue to arrive, purchasing homes at prices relative to their income.

Key words: housing market, retirement, economic effects, housing prices**Introduction**

International migration has been increasing in recent year in Europe. Most studies of this phenomenon have focused on workforce migration and its labor and societal impacts, but little attention has been paid to retirees moving from the richer countries of Europe, like Germany and the UK to less affluent countries such as Spain. This group of immigrants exhibits very different socioeconomic characteristics than the other major flow of immigrants, laborers coming to Spain from Latin America and Africa. The retirees are also distinctive from the local Spanish residents in terms of their income and housing tastes. Depending of the strength of the migration movements, the arrival of these new residents should have a measurable impact on the local economy. There are no studies in Spain that examine the economic and housing consequences of these immigrants. The long-term effect that these residents will have on their new communities and local housing markets have not been estimated.

The arrival of Northern European retirees may produce a shock in local Spanish housing markets. Their sheer numbers have created a spike in housing demand in recent years in some communities. If large numbers of them purchase homes at the same time rather than as a slow growth in population, then instead of experiencing a gradual structural change, local housing markets where retirees concentrate may experience a dramatic shock (Maddala and Kim 1998). These new residents may demand housing with more expensive features when compared with local population. Thus, we would expect to observe an increase in building activity accompanied by an increase in prices. This shock may have permanent effects and progressively change the market mechanism, moving the equilibrium price level and construction quality upward. The entry of these new buyers to the market could modify the long term determinants of the local housing market, changing the equilibrium conditions. The initial shock, funded by capital inflow from immigrants' home countries, is expected to contribute to house-building and increasing construction employment first, but then influencing prices and overall economic activity in the region. This influence is especially important in areas whose local economies rely heavily on tourists and retirees.

The aim of this paper is to determine whether this is happening in Alicante, the main destination within Spain for retirees from Germany and the UK. We examine the economic consequences on the housing market from the arrival of these migrants. The study will check whether this change happens suddenly, creating a shock in housing markets and contributing to the explanation of the expansion of construction and increases in prices.

This paper is organized as follows. Section one explains the reasons why we believe retiree migration to Alicante produces an economic shock in those housing markets where they concentrate, evaluating its relative relevance and location. Section two considers the economic aspect of this phenomenon and its impact on the housing market equilibrium. Section three explains the data used in the analysis. The fourth part defines the model used to obtain the empirical evidence in the investigation. A discussion of the results and conclusions are included in two last parts.

International Retiree Migration to Spain

Mobility and international migration is increasing in Spain. According to the Residential Variation Statistics (EVR), more than 55% of all household moves to and within Spain from 1988 through 2004 were concentrated in the last 5 years (Table 1). Almost 3 million households immigrated to Spain during this time, with a dramatic increase in

arrivals from foreign countries in recent years (85.6% of total arrivals in the 17-year period entered in the last 5 years).

The average age at retirement is declining in Europe (OECD 2001). Many retirees can look forward to decades of healthy living. No longer geographically tied to a place of work, their pensions and wealth are mobile. 'Amenity led migration' is not prompted by the quest for economic opportunities, but rather for leisure opportunities, and is oriented to achieving a better quality of life, which leads them to settle in geographical areas with mild climates and amenity facilities. Europeans migrating to Spain tend to be aged 55 and older (Figure 1) and tend to fall in this category.

These immigrants are concentrated in a few destinations in Spain. Table 2 shows the third largest recipient of immigrants is Alicante, followed by Valencia, Málaga, Murcia and the rest of Mediterranean provinces and the Islands. The time-pattern of the migration flow observed in Figure 2 indicates a strong rise in migration to Alicante of those aged 55 and older coming from developed countries in recent years. A pattern of reinforcing migration results in concentrations of immigrants from the same origin country. The migration has resulted in the appearance of communities of retired foreigners in certain areas of the Spanish Mediterranean coast acting as a magnet for the retired populations of Northern European countries (Warnes 1994; Williams et al. 1997; King et al. 1998; Rodríguez et al. 1998; King et al. 2000; O'Reilly 2000). In the case of Alicante, the two major sources of retiree immigrant flow are the UK and Germany, as shown in Figures 3 and 4. The movement of aging Northern Europeans to Alicante must at least partially be explained by attractive housing market conditions. The size of the migration would also be expected to effect conditions of that market.

Retiree Migration Impact on Housing Markets

The behaviour of migrant retirees in the destination area should follow the theoretical principles of housing demand. Consumers are expected to maximize utility, choosing a preferred bundle of housing features subject to their income constraint. However, estimating this demand may be difficult because retirees may be making a protective move in anticipation of the reduction in real income they will experience when they retire. In addition, older homeowners' income constraint is not tied to wages and salaries, but to pensions and wealth. International migrants may choose to live in an economy where housing costs are more affordable than where their income and pension were earned. A reverse flow of migrants may eventually occur, which will have an opposite effect on the local economy from the arrival of the retirees. If the retirees choose to age in place in Spain, they will create a second wave of demand for in-home services or purpose-built retirement housing, resulting in changes once again in the local economy with construction of the new housing and resale of their original homes.

Research has been conducted in the U.S. regarding interstate migration of retirees (see for example Reeder 1998; Stallmann *et al* 1999; and Skelley 2004). The overall effect that these older migrants have on the host residential market does not differ much from that usually found in the general housing literature. Demand for goods and services is generated by the family and the property in which they live. Demand concentration encourages dynamism in property markets by increasing both construction rates and prices, as is shown in the classical literature on these issues (Arcelus and Meltzer 1973; Hanushek and Quigley 1979; Muth 1988; Smith *et al* 1988; Quigley 1996; Quigley 1997; Clark and Withers 1999; Coulson 1999; Eaton and Eckstein 1997; and Meen and Andrew 1998, among others). Migrants' income levels determine the size of the impact on the residential market. When any area attracts retirees, the main impact is on the housing sector. Research indicates that almost one-third of U.S. retiree migrants buy homes close to the time of arrival in their new community (Bennett 1996; Serow and Haas 1992; Miller *et al.* 1998). Most retirees also bring income and wealth flows with them, having higher wealth than the rest of retirees in the local market (Orzechowski and Sepielli 2003).

Although some of the pioneer studies of international retiree migration in Europe analysed the increasing number of property purchases in rural France by British retirees (Buller and Hoggart 1994, Hoggart and Buller 1995), analysis of the impacts of this type of migration on the housing markets of destination communities is very scarce, highlighting the need for further research on this topic. Taking all the empirical evidence mentioned above into consideration, it could be expected that retired people follow incentives to move only if their economic characteristics enable them to acquire housing in the destination market. Housing prices constitute a relevant variable to take into account together with income and housing features to understand movers' behaviours and their impact on the housing market equilibrium.

Data

The data for this analysis were obtained from REVIcVAL. (REVIcVAL is the acronym of 'Retirados y Viviendas en la Comunidad Valenciana' - Foreign Retired People and Housing in the Valencia Region, research project R&S&R of Generalitat Valenciana, reference number GV04 B530.)The REVIcVAL project is exploring the role of European retirees in the housing market in the Valencia Community. This fundamental objective determines various

aspects related to the geographical boundaries of the study, the population groups involved, and the housing market components analysed.

Secondary statistical data available from national and regional institutions generally do not address the international retiree migration phenomenon, which results in incomplete and incompatible data, and therefore can seldom be used to study migratory movements thoroughly. Some are 'stock type' data (Census) that are complete regarding the characteristics they measure, but not continuous because they are only produced every 10 years; others measure flows, but with few demographic characteristics.

Faced with this problem, REVIcVAL decided that it was necessary to supplement secondary data with primary data specifically oriented toward the identification of the relationships between retired European immigrants and the housing market. The project uses a questionnaire, a number of in-depth interviews, and several focus groups to obtain this data. The questionnaire was composed of 52 questions grouped together in several thematic blocks. In the main block dedicated to property, the aim was to obtain quantitative data on the retiree's housing (size, design, year purchased, price paid, etc.) through which the economic mechanisms underlying the operation of the retiree housing market can be extrapolated. Other qualitative data collected include opinions about what attracted them to the area and their specific home and their perception about their income relative to the cost of living. Regarding the mechanisms that determine retiree mobility across Europe and the movement of capital, it was considered important to gather information about how the residents financed the purchase of their Spanish homes. The questionnaire also collected sociodemographic data (age, gender, educational level, nationality, income, etc.).

The geographical context in which the research is developed is the Alicante province, Valencia region of Spain, where 16% of the population of 1.65 million is foreigners; two out of three of these foreigners are over 55 years old and nine out of ten are Europeans (Census, 2001). The most recent official data make it possible to identify the dominant national retiree groups. Britons and Germans, in this order, are the national groups with greater numbers in the Alicante province and its municipalities. The research team therefore decided to focus its work on Britons and Germans because they comprise the largest groups with enough numbers and economic power to have a significant impact on the housing market in Alicante.

The distribution of European retirees in Alicante is not uniform and tends to concentrate in specific areas inside the province, the northern and southern coastal communities (Casado and Rodríguez 2002; Rodríguez 2004). Taking this into account, and considering the lack of accurate knowledge about the universe from which the sample should be drawn (foreign resident retirees), the questionnaire was distributed in Alicante to a proportional sample according to town size (municipalities with less than 2,000 inhabitants, those with 2,001 to 10,000 inhabitants, and those with 10,001 inhabitants or more), their coastal or inland location, and north/south location within the province based on proportions found in the 2001 Census. Sex and age were selected as demographic criteria for further stratification.

The 636 homeowners who responded demonstrated the same accelerated immigration pattern as the general population (Figure 5). Their average age is 65, with the British a bit younger (Table 3). Most have attained a secondary or university education. Average annual household income falls between 12,000 to 36,000 euros a year, with the British reporting slightly lower incomes. Most British retirees receive income from both public and private pensions whereas most Germans report only a public pension. This income is sufficient to live comfortably in Spain according to the retirees; however, 28.3% of the British say it would be difficult to impossible to live in the UK on their income (Table 4).

The retirees purchase a home in Spain close to the time they move (Figure 6) at the prices shown in Figure 7. Neighbourhood and economic characteristics such as housing prices and cost of living affected their housing decision (Figure 8). The great majority of retirees purchased their homes with cash, which means an extremely intensive flow of capital into the market from other European housing or financial markets (Figure 9). The full estimated flow of capital into the Alicante housing market due to the survey participants' purchases of housing are represented in Figure 10. The tremendous increase in capital inflow during recent years is a signal of a shock to the housing markets in those areas receiving retirees.

Model

This paper explores internal rationality regarding housing market principles to explain retiree migrants' decision to purchase a house at prevailing prices in their retirement destination. We use a traditional demand function, which is determined by two groups of factors, those with permanent effects, such as demographic components, income level and flow of capital to invest in housing, and those with transitory effects to achieve the short run equilibrium, such as user costs and vacancies. Housing demand can be estimated as follows:

$$Q_h = q(X, Z) = q[(Pop, y, K), (p_h, \Delta h, Cu), Of] \quad (1)$$

Where:

Q_h : housing demand
 X : vector of variables with permanent effects on the market, which are:
 Pop : Population
 y : Real income per capita or other measure of permanent purchasing capacity
 K : capital expenditure on housing other than income
 Z : vector of variables with transitory effects on the market, which are:
 p_h : housing prices
 Δh : vacancies
 Cu : user costs of housing
 Of : other factors, such as relative prices of other goods and consumer tastes

At any moment in time, the market fits through prices following the expression (Meen 2003):

$$P_{h,t}^d = f(X, Z)_t = \alpha_1 + \alpha_2 (Pop)_t + \alpha_3 (y)_t + \alpha_4 (K)_t - \alpha_5 (\Delta h)_t - \alpha_6 (Cu)_t + \mu_t \quad (2)$$

adjusting slowly and sometimes separating from their long term equilibrium trend. This trend is a function of long term equilibrium factors (X). Deviations are produced by components of Z .

The demographic component could be rewritten including different sources of population flows so that its variations are determined by the natural population growth and by immigration.

$$Pop = \Delta p + IR + OI$$

where Δp is the natural population growth, IR quantifies the international retiree immigration and OI measures the rest of immigration, national or foreign.

The origin of migrants is associated with the average level of income per capita through the labour market. Then, residents' income per capita could vary depending on whether the source originates in the relevant local labour market or not. The local population and immigrant workers will have similar income levels coming from wages (y_l) set in the local market. On the other hand, the income of retiree migrants (y_e), which may be higher than that of the local labourers, takes the form of pensions whose amount depends on the productive specialization and education held by retirees in their country of origin as well as the wage levels in their country of origin during their working years. Income per capita can then be expressed as: $y = f(y_l, y_e)$.

The 'normal' level of housing price equilibrium is a function of $[\Delta pop, (y)_t]$ from local population with local income along with immigrants working in the local labour market, $[OI, (y)_t]$, and retiree migrants with their pensions $[IR, y_e]$. Available resources to finance the housing purchase, K , could also have two different sources: mortgages (M_t) and the external saving or housing equity from the country of origin associated with retirees (S_{et}), ($K_t = M_t + S_{et}$).

Then, (2) could be re-written and expressed as an inverse demand function,

$$P_{h,t}^d = \alpha_1 + \beta_1 [\Delta p + OI, (y)_t, M_t] + \beta_2 [IR, y_e, S_e] - \alpha_5 (\Delta h)_t - \alpha_6 (Cu)_t + \mu_t \quad (3)$$

Equation (3) could be interpreted as prices reached by the market are a result of two different forces that act simultaneously and derive from two sources of demand, each of which have their own characteristics. Both participate in the determination of market equilibrium. If the relative weight of the third term in equation (3) ($\beta_2 [IR, y_e, S_e]$) is large or increasingly relevant, changes in it could modify the market constants, driving the market to a new set of equilibrium parameters.

When the immigrant flow 'appears' in the market, i.e. β_2 changes from 0 to any positive value, prices $P_{h,t}^d$ move away from the previous trend in answer to the demand shock. Once the market assimilates the innovation (shock and permanent change), then the effects of the continuous and stable growth tend to be reflected by the market constants as the fundamentals predict.

Regarding the components of the long-term trend, a restricted version of (3) could be defined to capture the impact of retirees on the market.

$$P_{h,t}^d = \gamma_1 + \gamma_2 [IR, y_e, S_e] - \gamma_5 (H)_t - \gamma_6 (cCu)_t + \varepsilon_t \quad (4)$$

where $P_{h,t}^d$ refers to the level of prices paid by retirees, which does not necessarily equal the market average price.

We want to delve more deeply into whether retiree migrants face a segmented market when choosing their houses. Can we distinguish retiree home purchases by taking into account the fundamentals recognized by literature, i.e. their income and tastes? If so, given their higher purchasing capacity, retirees probably are transacting in a higher price segment in the housing market. If the retiree's relocation is permanent, the market will probably react in the long-run to produce new housing specifically adapted to the tastes of the new residents.

The former proposition is equivalent to saying that retirees make a simultaneous decision about house quantity and price, which could be expressed as a simultaneous equation system adjusting price and housing characteristics.

$$P_{h,t}^d = \gamma_1 + \gamma_2 [IR, y_e, S_e] - \gamma_5 (H)_t - \gamma_6 (Cu)_t + \varepsilon_t \quad (5)$$

$$H_{ht}^s = \delta_1 + \delta_2 [IR, y_e, S_e]_t - \delta_3 P_{ht}^d - \delta_4 (Cc)_t + \varepsilon_t \quad (6)$$

where H_{ht}^s are the housing characteristics of dwellings purchased by retirees, which may not necessarily coincide with the average, and $(Cc)_t$ refers to the construction cost of housing.

In this system, the variable IR is the magnitude of retirees' demand, and could be represented through its determinants. As theory has established, the demand of any good should be expressed as $Q^d = q(P, y, T, P_{og}, Of)$, where P are the prices of the demanded good; y is the income; T represent tastes; P_{og} are the relative prices of other related goods; and Of represents other factors. Therefore, total demand created by retiree migrants can be represented by the following expression:

$$IR_h = f[y, P_h, P_{og}, T, Of] = f[y, P_{ht}(p_{st}/p_{ot}), T, Of] \quad (7)$$

Substituting in (5) and (6), the following system results:

$$P_{ht} = \gamma_1 + \gamma_2 y_{it} + \gamma_3 (p_{st} / p_{ot})_i + \gamma_4 T_{it} + \gamma_5 S_{it} + \gamma_6 H_{ht} + \varepsilon_{1t} \quad (8)$$

$$H_{ht} = \delta_1 + \delta_2 y_{it} + \delta_3 P_{ht} + \delta_4 (p_{st} / p_{ot})_i + \delta_5 T_{it} + \delta_6 S_{it} + \varepsilon_{2t} \quad (9)$$

with 'i' the alternative variables measuring each component. We expect, $\gamma_5, \gamma_6, \delta_2, \delta_5, \delta_6 > 0$, $\gamma_2, \gamma_4, \delta_3 < 0$, and $-1 < \gamma_3, \delta_4 < 1$

We expect that once retirees decide to move, short-run costs do not impose a significant obstacle to purchasing the dwelling. Retirees face them as a component of prices and we therefore consider they are included in the declared level of prices.

In this exercise, we approach the system of equations using the data gathered on retirees in Alicante. The idea is to test whether some of the fundamentals defined by theory are capable of explaining both the level of prices paid by retirees and the characteristics of the houses they buy using a weighted least squares (WLS) model. The survey provides questions that can serve as proxies for the demand variables. Due to the structure of the answers and in order to capture the simultaneous decisions made by the retirees when arriving in Alicante and buying a house, we estimate (8) and (9) with the price paid for the house ($PRICE_{it}$) and the house size ($SIZE_{it}$) in square meters as dependent variables, as described in Table 5.

Independent variables were developed from questionnaire answers that can be used as proxies of the fundamentals included into the model. Thus, annual household income was chosen as a proxy of permanent income ($INCOME$). Income is expected to be positively related to the price paid. Due to the relation between income and level of education, we decided to control by level of education ($EDUC$) and include AGE as one of the retiree characteristics.

To approximate the availability of savings/capital from outside the local market, we use two variables. One is whether respondents paid cash or used a mortgage to finance the purchase of their home in Spain ($IFMORT$). This variable takes a value of 1 if the buyer used a mortgage (from the origin country, from Spanish mortgage system or both) or 2 if the buyer paid cash so the higher value represents a higher transfer of equity from the country of origin. We expect a positive sign on the estimated parameter and its value will show the transmission on prices from the availability of cash. The other asked retirees migrants whether they stay at their own home in their country of origin when they visit ($IFHOME$). The answer 'I stay in my own accommodation when I visit my country of origin' indicates that they have not liquidated all their equity in their original home. If the retiree migrants have used their housing equity to buy their Spanish homes, then, a contrary reaction between this answer and the dependent variable in the model is expected because it seems that the migrant has not enough equity to buy the house coming from their country, which is how this variable is used as a proxy of the amount of capital available to the purchaser. Therefore, it is expected to have a negative sign.

The relative price of houses among the countries of origin and Spain (housing price difference) is captured by a question about the attractiveness of Alicante housing prices ($ATTRACT$). This answer captures retirees' beliefs about the magnitude of the difference between housing prices in Spain relative to their country of origin, and whether this difference affected their decision to buy. It was measured as how important housing prices were in attracting the retiree to the destination on a 5-point scale. This variable is expected to quantify the price transmission effect among housing markets. Thus, the higher this value, the greater the attractiveness of buying a home in Spain, indicating an expected positive sign on its parameter.

The relative prices of other goods between each country are approximated by the answers of retirees when asked about the capacity of their income to cover their cost of living in Spain ($INCADQSP$). They were asked to rate how well their income would allow them to live comfortably on a 4-point scale where 1 refers to the best situation, 'living comfortably'. We expect this answer to measure the difference in the cost of living in Spain and the country of origin according to retirees' expenditures. This variable captures the role of the Spanish cost of living in the decision

of buying a home in Spain. Thus, we expect a positive sign on the price equation (the purchase capacity increases the qualification of the demand and, then, increases prices) with price related to higher quality of houses.

We include the type of house as a measure of housing tastes of retiree migrants (*PROPTYPE*) and to control on quality because of the dependent variable measure (size). We also originally distinguished between the two nationalities (British and Germans) in order to determine if different taste patterns exist between them. The results show that no difference exists and keeping two separate groups introduced some bias into the model.

Because the dataset includes observations of immigrants who arrived in Spain from 1961 through 2005, it was necessary to include a time variable to control for the increasing housing prices and the time pattern of migration. The year that the retirees bought their home in Spain (*YRBUY*) is the variable chosen. Its expected sign is positive because general housing prices have been increasing. This variable also captures the moment when the purchase impacts market housing prices, occurring close to the time retirees move to Spain, resulting in the shock effect on the market. A deeper exploration of the time aspect of the model is also performed by recovering the 'history' of prices paid by retiree migrants, showing how they have evolved.

Results

Tables 6 presents a correlation matrix of the variables and also variances-covariances. The system (8) and (9) is fitted using multivariate methods into a general linear model. Regression and variance analysis is used to estimate the parameters, showing each effect of covariates on the averages of the grouped joint distribution of dependent variables. It is also possible to estimate the individual effect of a factor variable on the other covariates, and the interactions among them. This is done using the year of purchase as the fixed factor. As shown by results provided in Tables 7 and 8, no significant variation on the parameter estimations is observed.

The explicative capacity of the equations (adjusted R^2) reaches good values, although better in the case of the price equation, ranging from 0.418 to 0.470, than in the size estimation, with 0.218 to 0.239.

Table 7 shows that the main determinant of housing prices paid by retirees are the year of purchase, as expected, and also income, tastes and the attractiveness of housing prices in Spain. The relevance of *INCOME* (with $\beta = +0.47$ on price and $+15.34$ on size equation) seems to suggest that, as predicted by general housing market theory, each immigrant retiree household tends to buy the house their budget restriction allows.

PROPTYPE also gives good results in the model suggesting that tastes is one of the main reasons to buy the house, as the retirees said in the survey. The estimated parameters give the expected sign and robust results (with $\beta_{\text{PROPTYPE}} = +0.46$ on price and $+19.69$ on size equation).

AGE seems not to affect the equilibrium. The fact that retirees migrate as soon as they retire, and the relationship between age and the length of their stay in Alicante somewhat explains this result. *AGE* is significant only in the second model (Table 8) when the fixed effects associated with the time of home purchase are introduced into the model. The result ($\beta_{\text{AGE}} = -0.96$ at 5% of significance level) seems to suggest that the older the retiree is today, the smaller the house they own. This result, again, is consistent with those described in the literature although we don't know if they move to another smaller house as they aged.

The model fails to discover the role of the transfer of equity on the equilibrium. *IFMORT* is not statistically significant in any of the systems. It is possible that the retiree first decides to sell their home and move to Spain, buying a house there based on the amount of equity they have to transfer. From this point of view, the variable is exogenous. A significant result was expected, showing that the shock produced by the migrants impacted prices. We do not find any structural change in this system, suggesting that retired people tend to always choose the same price levels of houses, avoiding those areas where prices have grown more rapidly. Probably, a structural change has occurred in the market, but retirees still buy houses according to their budget and income parameters.

The second variable used to capture the use of housing equity is *IFHOME*. We find significant effects only on the Size equation with the expected sign, in both exercises, reaching parameter values of $\beta_{\text{IFHOME}} = -16.6$ and -15.64 at 5% confidence level, on the size equations without and with *YRBUY* fixed effect respectively. This intense effect should capture some reaction of retirees as home buyers, meaning that if they count on housing equity coming from their original country, they could buy larger houses in Spain than in the opposite case, and independently of the housing price.

The model does not find that purchasing capacity (*INCADQSP*) is important in the choice of where and what to buy. Most respondents indicated that their income is very adequate to live in Spain but this effect is not captured by the

model at all. The perceived sufficiency of income to live in Spain is perhaps captured by the impact of the income level rather than through this variable. Another explanation could be that total household expenses are related to the size of the house and not with the price. Regarding this focus, income adequacy refers also to expenses produced by the house itself.

Finally, and as expected, the year of housing purchase affects the decision about how much price to pay, being statistically significant ($\beta_{YRBUY} = 0.15$). It is not significant in the size equation. This result reflects how house prices paid by retirees have evolved during the period covered in the survey, meaning that as years pass, the prices are rising at an 0.15% average rate in all periods.

The reason to fit the second model system was to explore the role of time in more depth (Results are in Table 8). It was fitted also using WLS, but now estimating the factor effects of time. Parameters other than *YRBUY* show similar results and significance when compared with the previous estimation. *YRBUY* is very significant in the price paid equation in almost all years, reflecting how retirees paid higher prices as prices grew over time. Figure 11 depicts that evolution represented by the parameters fitted of the fixed effect variable. It shows how nominal prices paid remained at an almost constant level from the early eighties until the mid-nineties, then started to grow. The negative values represent the housing price premium they find buying a home in Spain. The increases have been similar to the general trend in housing prices in Alicante province, only being higher during 1998 to 2001.

On the other hand, the size of housing that retirees purchase gives us contrary meanings. *YRBUY* is not significant in the second equation of the system whilst the marginal effect makes apparent that retirees continued to purchase increasing size (at 15% more than average) housing up until the last five years, coinciding with larger price increases (Figure 12). It should mean that more recently arriving retirees own larger houses.

Discussion

The results provide some evidence about the economic reasons for retiree migration and housing choices, which are consistent with the theory. First, the results suggest that retiree migrants moving to Alicante come from among the middle to higher income groups. They are attracted by the difference in housing prices between their home countries and Alicante and they choose their house, both in terms of size and price, based on their level of income and the attractiveness of the house.

The second result is that the availability of equity from a previous home to purchase the new home is not a determinant of prices in our model. This has three relevant implications. The first is that the retirees are not as dependent on the mortgage market as are other consumers when buying a home. They pay for their homes with cash, and therefore the decision to move is probably related to the conditions of other housing markets regarding the amount of money they need to buy a home and the high probability of using housing equity to buy the house in Spain (selling their first or secondary home in their country of origin). We couldn't demonstrate this relationship in the model (because the defined structure); however, this has important implications in terms of contagion effect among European housing markets. What we have contrasted is that those retirees who maintain their homes in the original country tend to buy smaller houses in Alicante, illustrating capital availability restriction.

The second implication relates to the choice of Alicante instead of Italy, the South of France, or other parts of Spain. The attractiveness of housing prices means that retirees perceive the existence of an opportunity cost related to the housing market when moving to this area, i.e. the ratio between housing prices in their country of origin and those in Alicante is positive and higher than one, which means they can consume part of their British/German housing equity without reducing their housing quality of life. On the other hand, the second model with time fixed effects shows a measure of this opportunity cost and how it has been decreasing over time. The third implication is that the Alicante housing market fails to react to this flow of equity, maintaining stable prices until the last few years. This rare market reaction could be explained by the dispersed nature of purchases throughout the province. It is reasonable to think that when retirees concentrate in a given location and prices rise, new entrants look for similar towns in which to buy where prices have not yet been affected.

The third result refers to the relationship between income and purchasing capacity in Spain and their country of origin. The test whether the move is a reaction to the retirees experiencing difficulties with the cost of living in their countries of origin resulted in a negative answer in our model. Retirees find their incomes sufficient to purchase a relatively large home in Spain (which implies higher maintenance costs). Cost of living is not a determinant of movements.

Our analysis does find an evidence of shock. The statistical significance of the variable 'year of purchase' suggests that the impact is progressive, having the effect of a continuous structural change in those markets where retirees

locate. However, this aspect needs further consideration through the inclusion of overall market prices and not only those paid by this group.

Finally, although it is not definitive, the model indicates how the size of the house does not depend on their age (smaller size when older migrant) when time of purchase is considered fixed, which is an important feature in order to anticipate the future impact of their presence on the Alicante market.

Conclusions

This paper presents research about retiree migration from Germany and the UK to Alicante, Spain. Based on a primary data base (REVIcVAL), some characteristics of these homebuyers are revealed which suggest their presence in the housing market has important impacts on equilibrium. Retiree migration from Northern Europe to the South is accelerating. These migrants are concentrating in locations such as the province of Alicante, where they are creating an external shock in the local housing markets. Because their socioeconomic characteristics differ from the residents in the receiving markets, they constitute a strong demand force. They purchase homes with cash upon arrival, which means that local housing markets are receiving flows of capital from outside the country. The decision to move appears to depend on the destination housing market's economic characteristics, the economic differential between origin and destination housing market, and the level of retiree's income. We constructed a database of retirees' answers about economics and the housing markets and used multivariate regression techniques to estimate a simultaneous system of equations that captures how the decision to purchase the house is made based on the fundamental components of housing demand. Results show evidence of a strong economic component in this decision.

The immigrant retirees' presence shocks the housing prices but the narrowing difference between the countries' price levels does not reduce the flow of migrants. The key is that most retirees pay in cash, probably obtained through housing equity previously held in their countries of origin. When making the decision to move, they sell a first or second home in their country of origin and use the proceeds to buy a house in Spain. This implies a very strong transmission effect among housing markets in Europe. The multiple effects of this phenomenon are currently being assessed.

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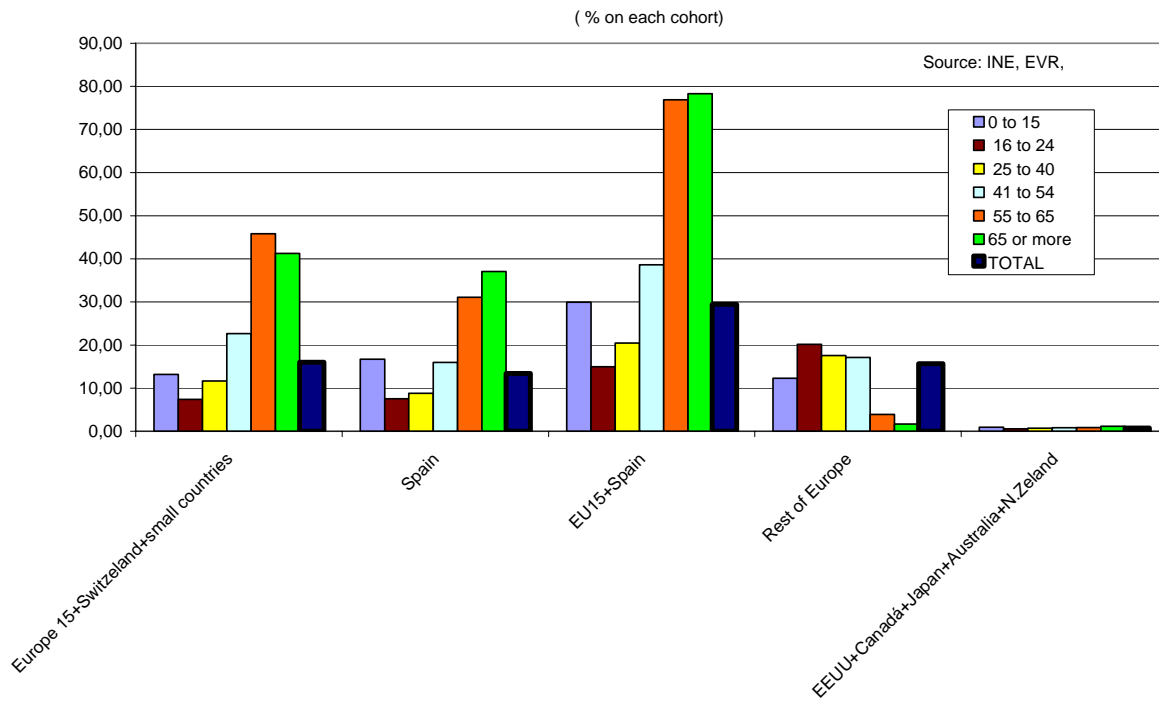
Table 1 . Foreigner Mobility to and within Spain 1988-2004

		Residential moves	
		Millions of persons	%
Total	1988-2004	17.98	100.00
	1999-2004	10.01	55.70
Foreigners moving to Spain	1988-2004	2.97	100.00
	1999-2004	2.54	85.60
Foreign movers within Spain	1988-2004	1.36	100.0
	1999-2004	1.18	87.10
Total foreigners moving to or within Spain	1988-2004	4.33	100.0
	1999-2004	3.73	86.10

Source. Estadística de Variaciones Residenciales. Microdatos. INE, 1988-2004

Figure 1: European Immigrants to Spain by Age Cohort 1998-2004

Figure 1. European Immigrants to Spain by Age Cohort 1988-2004



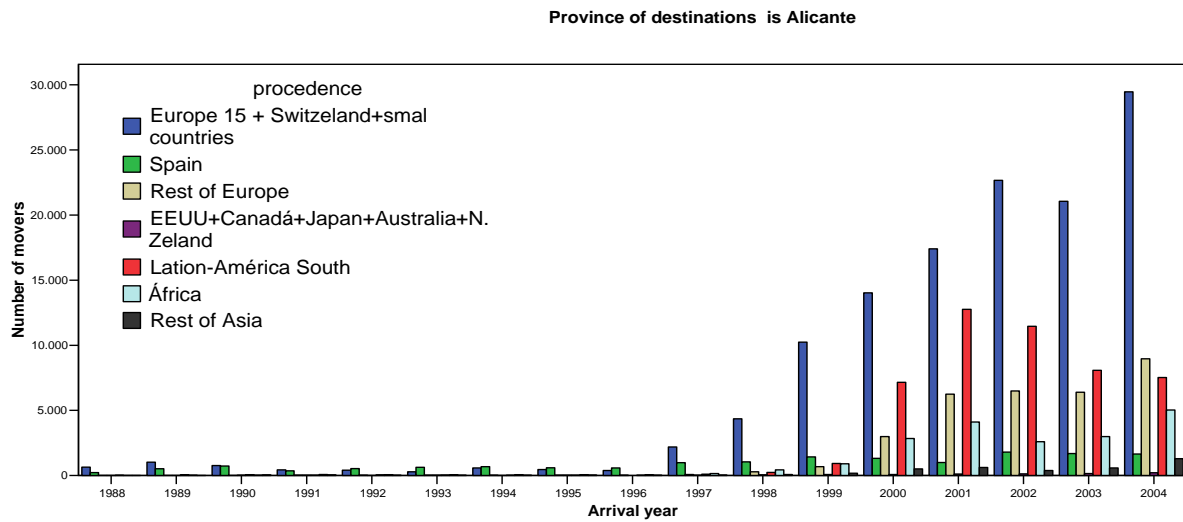
Source: SPANISH STATISTICAL INSTITUTE(INE), Residential Variations Survey (Encuesta de Variaciones Residenciales), microdata 1988-2004.

Table 2.- Foreign Movers to Spain 1998-2004 by Destination

Total arrivals	2,970,134
Total departures	-58,836
Net household migration from abroad	2,911,298
Destination by provinces:	% of total net arrivals
Madrid	24.79
Barcelona	9.32
Alicante	8.84
Valencia	6.26
Málaga	5.36
Murcia	4.39
Palmas (Las)	3.40
Sta. Cruz de Tenerife	3.23
Baleares	2.90
Gerona	2.58
Almeria	2.44
Tarragona	2.08
Castellón	1.60
Immigrant households age 55 and older From Europe-15. Destinations	
Alicante	43.67
Málaga	15.69
Sta. Cruz de Tenerife	5.65
Murcia	4.40
Baleares	4.35
Almeria	3.84
Palmas (Las)	3.31
Gerona	2.98
Valencia	2.73

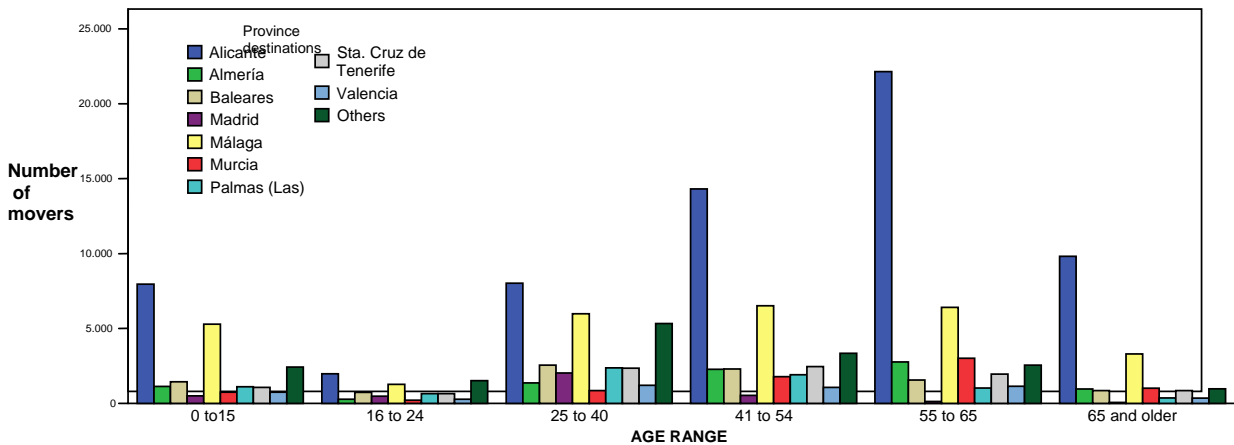
Source. SPANISH STATISTICAL INSTITUTE(INE), Residential Variations Survey (Encuesta de Variaciones Residenciales), microdata 1988-2004.

Figure 2. Immigrants to Alicante Age 55 and Older by Year of Arrival



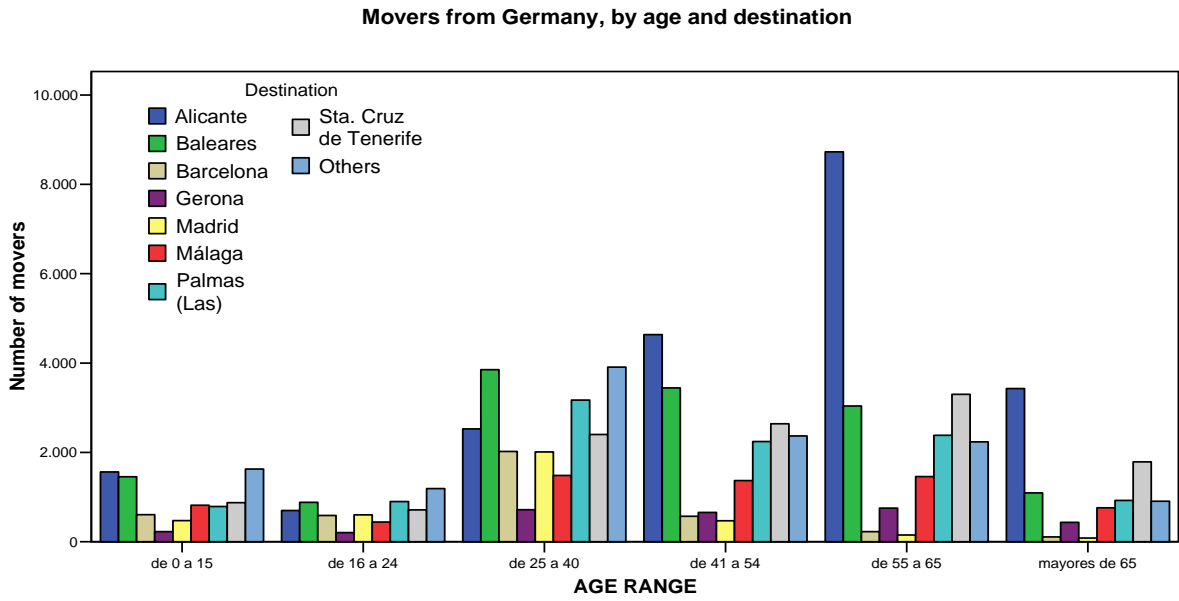
Source. SPANISH STATISTICAL INSTITUTE(INE), Residential Variations Survey (Encuesta de Variaciones Residenciales), microdata 1988-2004.

Figure 3. Destination of UK Immigrants to Spain 1998-2004



Source. SPANISH STATISTICAL INSTITUTE(INE), Residential Variations Survey (Encuesta de Variaciones Residenciales), microdata 1988-2004.

Figure 4. Destination of German Immigrants to Spain 1998-2004



Source. SPANISH STATISTICAL INSTITUTE(INE), Residential Variations Survey (Encuesta de Variaciones Residenciales), microdata 1988-2004.

Figure 5. REVIcVAL Participants' Year of Arrival in Spain

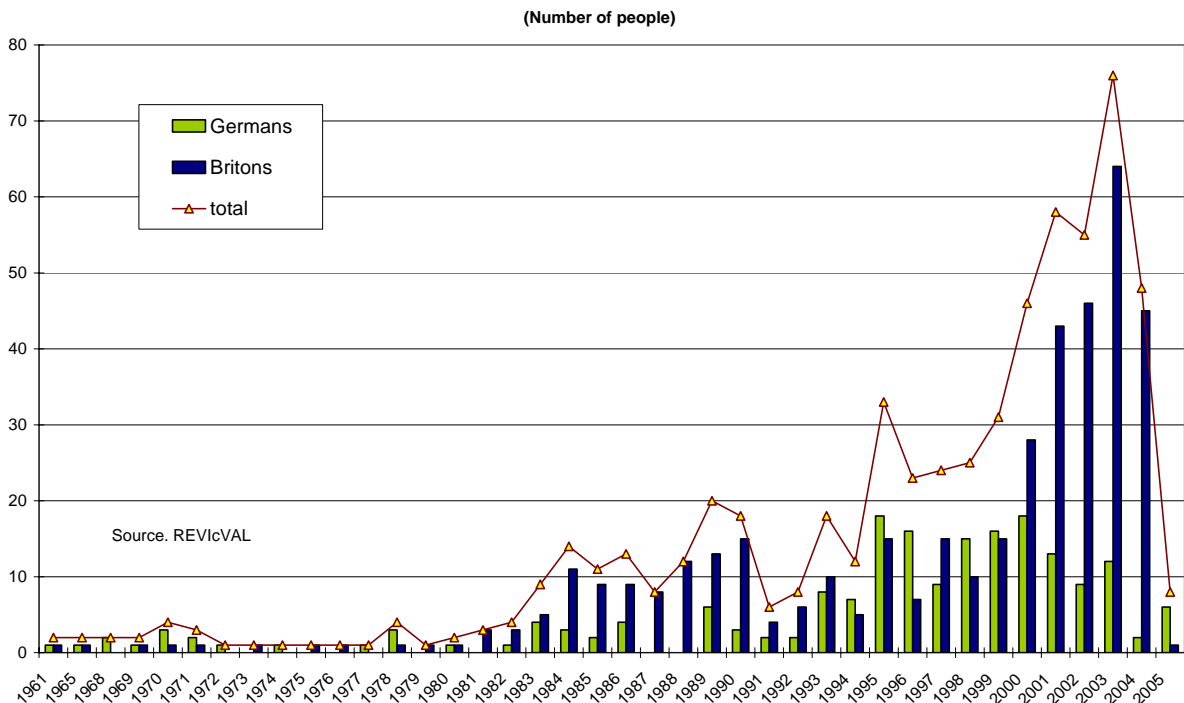


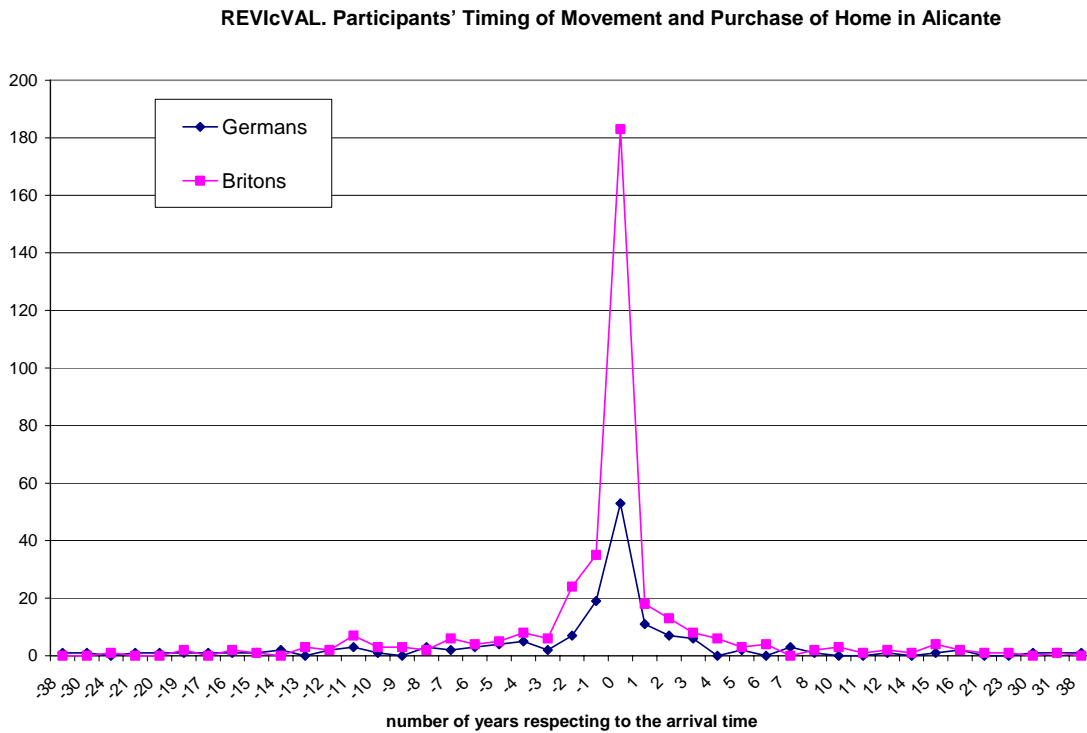
Table 3. REVIcVAL Participants' Socioeconomic and Housing Characteristics

	German %	British %
Age	(n= 212)	(n=424)
51-54	3.9	4.0
55-59	15.6	19.1
60-64	27.4	22.9
65-69	27.4	26.7
70-74	13.5	13.2
75-79	8.6	10.6
80-84	2.8	2.8
85 and older	0.8	0.7
Education	(n= 212)	(n=420)
Primary	39.6	8.6
Secondary vocational/technical	37.7	66.2
Undergraduate degree	19.3	15.5
Graduate degree	3.3	9.8
Household annual income	(n=178)	(n=343)
Less than 12.000 €	10.7	19.8
12.001 - 24.000 €	46.1	41.7
24.001 - 36.000 €	24.2	22.4
36.001 - 50.000 €	7.9	10.2
50.001 - 75.000 €	6.7	2.9
75.001 € or more	4.5	2.9
Income sources	(n=189)	(n=380)
Wages	6.35	1.33
Salary	3.70	1.33
Public pension	37.57	42.13
Private pension	42.86	44.27
Investment (financial)	6.35	7.20
Rental property)	1.59	2.13
Other	1.69	1.61
Number of income sources	(n=212)	(n=424)
0	10.8	10.1
1	63.2	25.0
2	19.3	40.6
3	6.6	20.8
4	0.0	3.5
Type of housing	(n=207)	(n=422)
Apartment	17.9	21.6
Semi-detached 2 floors	6.8	15.6
Semi-detached 1 floor	3.9	6.4
Detached villa	58.9	51.9
Old house in town or countryside	12.6	4.5

Table 4. REVIcVAL Participants' Perception of Income Adequacy

	Living in Spain			If living in home country	
	Total (n = 626)	German (n=212)	British (n=424)	German (n = 207)	British (n = 417)
Income Adequacy					
Comfortable	74.8	78.8	72.9	71.5	36.7
Coping	23.6	20.3	25.2	25.1	34.3
Difficult	1.4	0.5	1.9	2.9	23.0
Impossible	0.2	0.5	0.0	0.5	6.0

Figure 6. REVIcVAL. Participants' Timing of Movement and Purchase of Home in Alicante



Source: REVIcVAL Data Base

Figure 7. REVIcVAL. Housing Prices Paid by Participants by Nationality and Year of Purchase

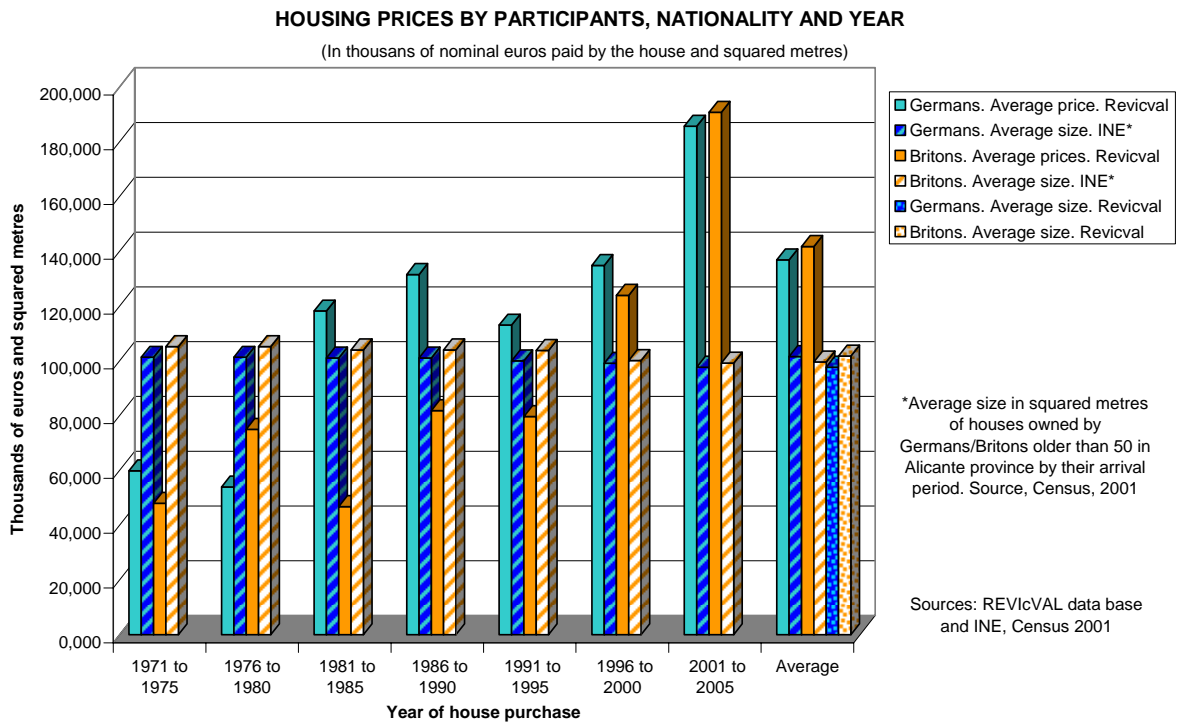


Figure 8. REVIcVAL. Factors Attracting Participants to their Retirement Destination.

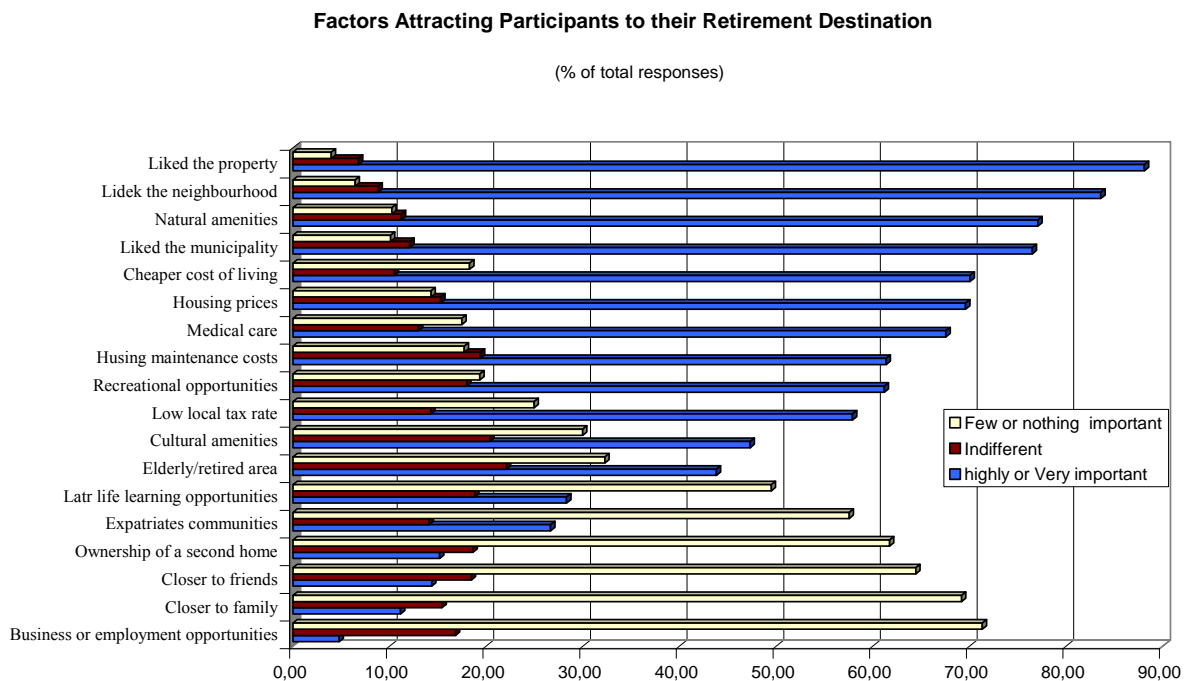


Figure 9. REVIcVAL. Participants' Use of Mortgages and Cash to Purchase Homes

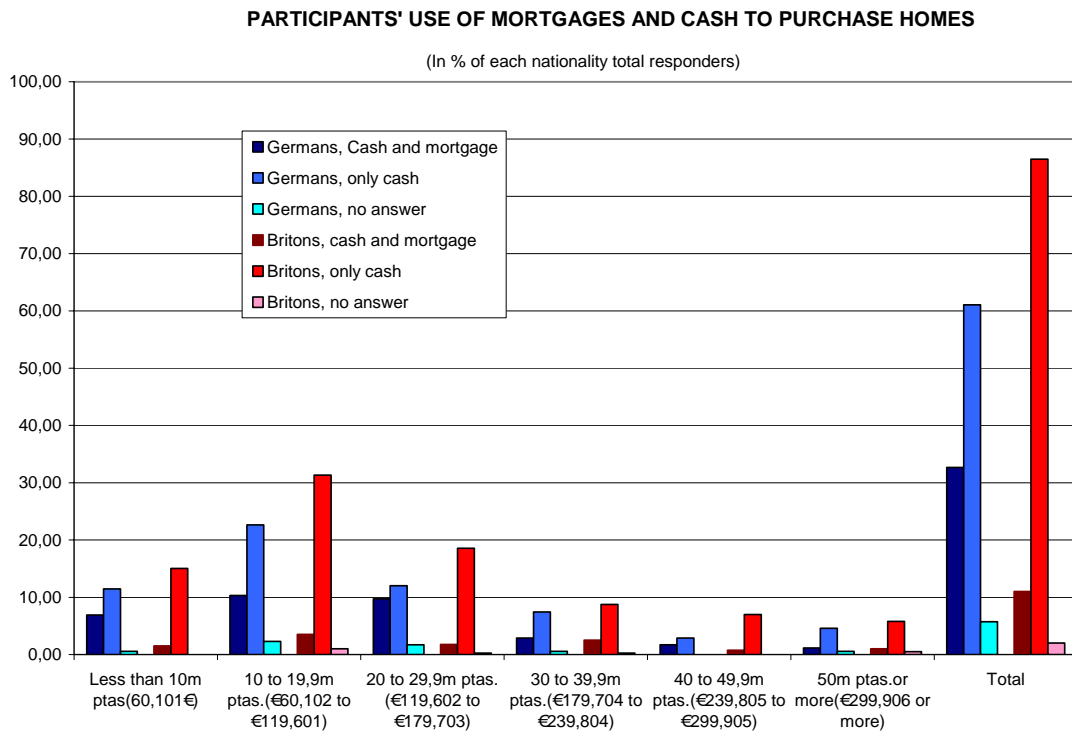


Figure 10. REVIcVAL. Estimated Flow of Capital into Alicante Housing Market from Participants

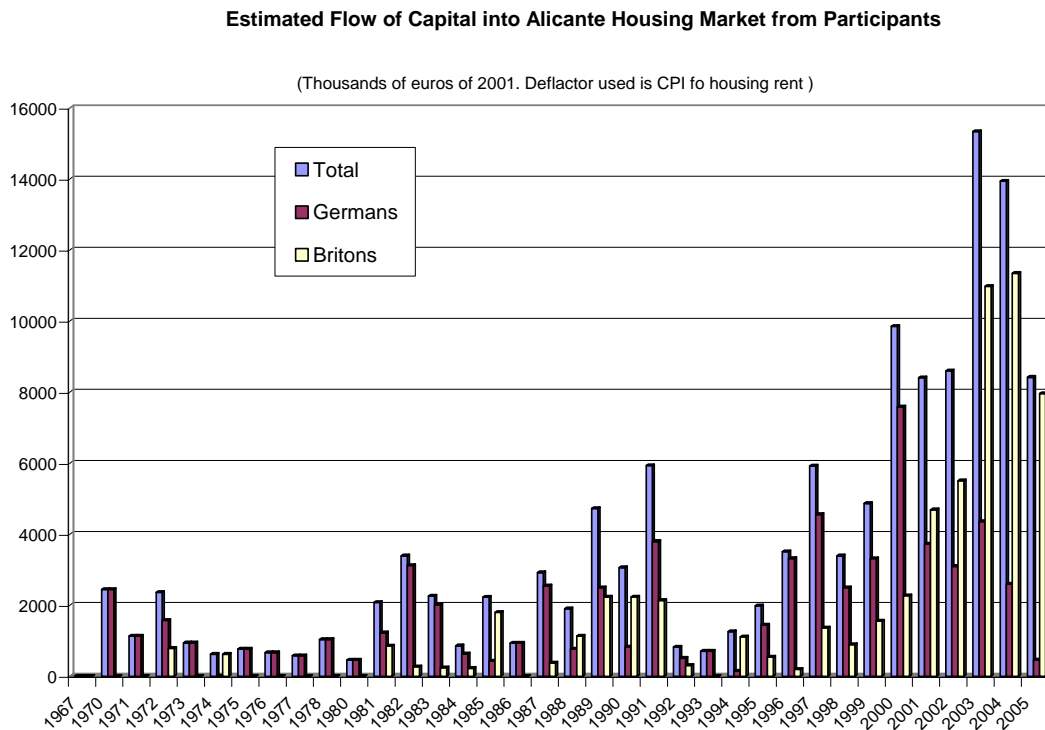


Table 5. Variables Used in the Analysis

Variables			n	Range	Mean	Mode	Std Dev	Variance	Asymmetry	Kurtosis
P_h	Price paid for current home in ranges	PRICE	588	1-6	2.76	2.00	1.43	2.05	0.81	-0.16
H_h	Property size in ranges	SIZE	629	1-5	2.78	3.00	1.17	1.37	0.26	-0.70
y_t	Household income in ranges	INCOME	628	1-9	3.51	2.00	2.46	6.03	1.14	-0.04
$(p_{st}/p_{ot})_1$	Housing prices important in attraction to area	ATTRACT	597	1-5	2.20	2.00	1.18	1.39	0.97	0.18
$(p_{st}/p_{ot})_2$	Income adequate for living in Spain	INCADQSP	636	1-4	1.27	1.00	0.48	0.23	1.62	2.23
T_1	Current age	AGE	636	50-89	65.58	63.00	7.03	49.48	0.39	-0.04
T_2	Education in ranges	EDUC	632	1-4	2.13	2.00	0.80	0.65	0.64	0.22
T_3	Property Type	PROPTYPE	629	1-5	2.78	3	1.17	1.37	0.26	-0.70
S_1	Whether finance purchase	IFMORT	575	1-3	1.83	2.00	0.39	0.15	-1.46	0.98
S_2	If stay in owned home on trips to origin country	IFHOME	636	0-1	0.28	0.00	0.45	0.20	0.96	-1.09
t	Year buy current home	YRBUY	601	1961-2005	1996	2002	7.76	60.29	-1.35	1.55

Table 6. Correlation Matrix

Correlation coefficients	AGE	INCOME	INCADQSP	ATTRACT	IFHOME	PRICE	IFMORT	YRBUY	SIZE	EDUC	PROPTYPE
AGE	1										
INCOME	-0.030	1									
INCADQSP	-0.040	-.129(**)	1								
ATTRACT	0.080	.119(**)	-.103(*)	1							
IFHOME	0.030	.236(**)	-.091(*)	.209(**)	1						
PRICE	-.215(**)	.174(**)	0.000	0.020	-0.030	1					
IFMORT	0.070	-0.050	-0.010	0.010	-.101(*)	-0.020	1				
YRBUY	-.376(**)	-.112(*)	0.030	-.170(**)	-.114(**)	.495(**)	-0.030	1			
SIZE	-0.060	.112(**)	-0.050	0.080	-0.060	.429(**)	0.050	-0.020	1		
EDUC	0.030	.162(**)	-0.050	0.070	-0.020	.172(**)	-0.010	0.050	.136(**)	1	
PROPTYPE	-0.030	0.010	-0.010	0.080	-0.020	.138(**)	-0.050	-0.070	.310(**)	0.000	1
**	Correlation is significant at 0.01 level (bilateral).										
*	Correlation is significant at 0.05 level (bilateral).										

Variates- Covariates Matrix	AGE	INCOME	INCADQSP	ATTRACT	IFHOME	PRICE	IFMORT	YRBUY	SIZE	EDUC	PROPTYPE
AGE	49.48	-0.32	-0.12	0.64	0.09	-2.87	0.19	-20.60	0.00	0.00	0.18
INCOME	-0.32	3.28	-0.11	0.24	0.19	0.56	-0.03	-1.51	0.00	0.00	-0.42
INCADQSP	-0.12	-0.11	0.24	-0.06	-0.02	0.00	0.00	0.11	0.00	0.00	0.03
ATTRACT	0.64	0.24	-0.06	1.39	0.11	0.05	0.00	-1.43	0.00	0.00	-0.01
IFHOME	0.09	0.19	-0.02	0.11	0.20	-0.03	-0.02	-0.40	0.00	0.00	0.20
PRICE	-2.87	0.56	0.00	0.05	-0.03	3.57	-0.01	7.16	1.00	0.00	-0.02
IFMORT	0.19	-0.03	0.00	0.00	-0.02	-0.01	0.15	-0.08	0.00	0.00	0.57
YRBUY	-20.60	-1.51	0.11	-1.43	-0.40	7.16	-0.08	60.29	0.00	0.00	-0.04
SIZE	-0.47	0.24	-0.03	0.10	-0.03	0.95	0.02	-0.20	1.00	0.00	-1.24
EDUC	0.16	0.24	-0.02	0.07	-0.01	0.26	0.00	0.30	0.00	1.00	1.66
PROPTYPE	-0.42	0.03	-0.01	0.20	-0.02	0.57	-0.04	-1.24	1.00	0.00	4.74

Table7 . Price and Size WLS Model Results

Weighted factor is EDUCATION - EDUC						
Dependent variable	Covariables	Expected sign	β	Σe	t-Stats	Signif.
Price paid for current home ΔP_h	α_1		-300.04	24.02	-12.49	0.00
	AGE	-	-0.01	0.01	-0.80	0.42
	ATTRACT	+	0.15	0.06	2.43	0.02
	IFHOME	-	-0.28	0.17	-1.61	0.11
	IFMORT	+	0.04	0.18	0.22	0.83
	PROPTYPE	+	0.46	0.05	8.39	0.00
	INCOME	+	0.47	0.06	7.67	0.00
	INCADQSP	no	0.23	0.17	1.37	0.17
	YRBUY	+	0.15	0.01	12.74	0.00
	R² = 0.429 , Adj R² = 0.418					
Size of home H_h	α_2		243.15	1020.18	0.24	0.81
	AGE	-	-0.59	0.47	-1.26	0.21
	ATTRACT	+	5.12**	2.66	1.93	0.05
	IFHOME	-	-16.60	7.34	-2.26	0.02
	IFMORT	-	-1.23	7.65	-0.16	0.87
	PROPTYPE	+	19.69	2.32	8.49	0.00
	INCOME	+	15.34	2.62	5.85	0.00
	INCADQSP	+	4.73	7.05	0.67	0.50
	YRBUY	no	-0.09	0.50	-0.19	0.85
	R² = 0.233 , Adj R² = 0.218					
* at 1% level of significance						
** at 5% level of significance						

Table 8. Price and Size WLS with Year of Purchase Factor Results

Factor = year of buy, Weighted by Education									
	β	Σe	t-Stats	Signif.	Dependent variable	β	Σe	t-Stats	Signif.
Price paid for current home ΔP_h	4.40	1.45	3.03	0.00	Size of home H_n	74.07	63.86	1.16	0.25
<i>Covariables:</i>					<i>Covariables:</i>				
AGE	-0.01	0.01	-0.91	0.36	AGE	-0.96**	0.48	-2.03	0.04
ATTRACT	0.15	0.06	2.34	0.02	ATTRACT	2.34	2.80	0.84	0.40
IFHOME	-0.20	0.17	-1.18	0.24	IFHOME	-15.64**	7.57	-2.07	0.04
IFMORT	0.05	0.18	0.26	0.79	IFMORT	1.19	7.93	0.15	0.88
PROPTYPE	0.49	0.05	8.98	0.00	PROPTYPE	19.16	2.37	8.07	0.00
INCOME	0.50	0.06	8.04	0.00	INCOME	15.69	2.71	5.80	0.00
INCADQSP	0.17	0.17	1.02	0.31	INCADQSP	5.41	7.44	0.73	0.47
[YRBUY=1974]	-5.24	1.62	-3.24	0.00	[YRBUY=1974]	-34.18	71.00	-0.48	0.63
[YRBUY=1975]	-5.10	1.91	-2.67	0.01	[YRBUY=1975]	-30.13	83.88	-0.36	0.72
[YRBUY=1976]	-5.47	1.90	-2.88	0.00	[YRBUY=1976]	5.57	83.39	0.07	0.95
[YRBUY=1977]	-5.43	1.90	-2.86	0.00	[YRBUY=1977]	-14.52	83.32	-0.17	0.86
[YRBUY=1978]	-5.66	1.71	-3.31	0.00	[YRBUY=1978]	-9.11	74.94	-0.12	0.90
[YRBUY=1980]	-3.22	1.45	-2.23	0.03	[YRBUY=1980]	138.58	63.45	2.18	0.03
[YRBUY=1981]	-3.97	2.40	-1.65	0.10	[YRBUY=1981]	30.67	105.50	0.29	0.77
[YRBUY=1982]	-4.17	1.34	-3.11	0.00	[YRBUY=1982]	6.27	58.83	0.11	0.92
[YRBUY=1983]	-4.70	1.36	-3.45	0.00	[YRBUY=1983]	-43.03	59.83	-0.72	0.47
[YRBUY=1984]	-4.36	1.26	-3.46	0.00	[YRBUY=1984]	-16.84	55.31	-0.30	0.76
[YRBUY=1985]	-5.31	1.33	-3.98	0.00	[YRBUY=1985]	1.44	58.55	0.02	0.98
[YRBUY=1986]	-3.64	1.33	-2.75	0.01	[YRBUY=1986]	23.96	58.18	0.41	0.68
[YRBUY=1987]	-4.49	1.32	-3.39	0.00	[YRBUY=1987]	55.21	58.07	0.95	0.34
[YRBUY=1988]	-3.73	1.26	-2.96	0.00	[YRBUY=1988]	47.92	55.36	0.87	0.39
[YRBUY=1989]	-4.05	1.25	-3.23	0.00	[YRBUY=1989]	-3.18	54.97	-0.06	0.95
[YRBUY=1990]	-3.00	1.26	-2.37	0.02	[YRBUY=1990]	-12.07	55.47	-0.22	0.83
[YRBUY=1991]	-4.92	2.40	-2.05	0.04	[YRBUY=1991]	20.46	105.19	0.19	0.85
[YRBUY=1992]	-3.74	1.38	-2.70	0.01	[YRBUY=1992]	-2.68	60.64	-0.04	0.96
[YRBUY=1993]	-4.06	1.29	-3.14	0.00	[YRBUY=1993]	23.99	56.75	0.42	0.67
[YRBUY=1994]	-4.55	1.38	-3.29	0.00	[YRBUY=1994]	0.07	60.77	0.00	1.00
[YRBUY=1995]	-3.10	1.29	-2.41	0.02	[YRBUY=1995]	10.71	56.52	0.19	0.85

[YRBUY=1996]	-3.03	1.24	-2.45	0.01	[YRBUY=1996]	12.31	54.29	0.23	0.82
[YRBUY=1997]	-3.15	1.26	-2.50	0.01	[YRBUY=1997]	6.65	55.17	0.12	0.90
[YRBUY=1998]	-3.13	1.24	-2.53	0.01	[YRBUY=1998]	4.58	54.33	0.08	0.93
[YRBUY=1999]	-2.84	1.22	-2.32	0.02	[YRBUY=1999]	16.95	53.57	0.32	0.75
[YRBUY=2000]	-2.80	1.22	-2.30	0.02	[YRBUY=2000]	12.19	53.48	0.23	0.82
[YRBUY=2001]	-2.20	1.22	-1.81	0.07	[YRBUY=2001]	-3.66	53.37	-0.07	0.95
[YRBUY=2002]	-1.17	1.21	-0.96	0.34	[YRBUY=2002]	19.25	53.32	0.36	0.72
[YRBUY=2003]	-1.10	1.22	-0.90	0.37	[YRBUY=2003]	4.24	53.38	0.08	0.94
[YRBUY=2004]	-1.44	1.22	-1.17	0.24	[YRBUY=2004]	-14.47	53.65	-0.27	0.79
R2 = .516 (Adj R2 = .470)					R2 = .305 (Adj R2 = .239)				

* at 1% level of significance

** at 5% level of significance

Figure 11. Trend in Prices Paid by Participants and in the General Housing Market in Alicante*

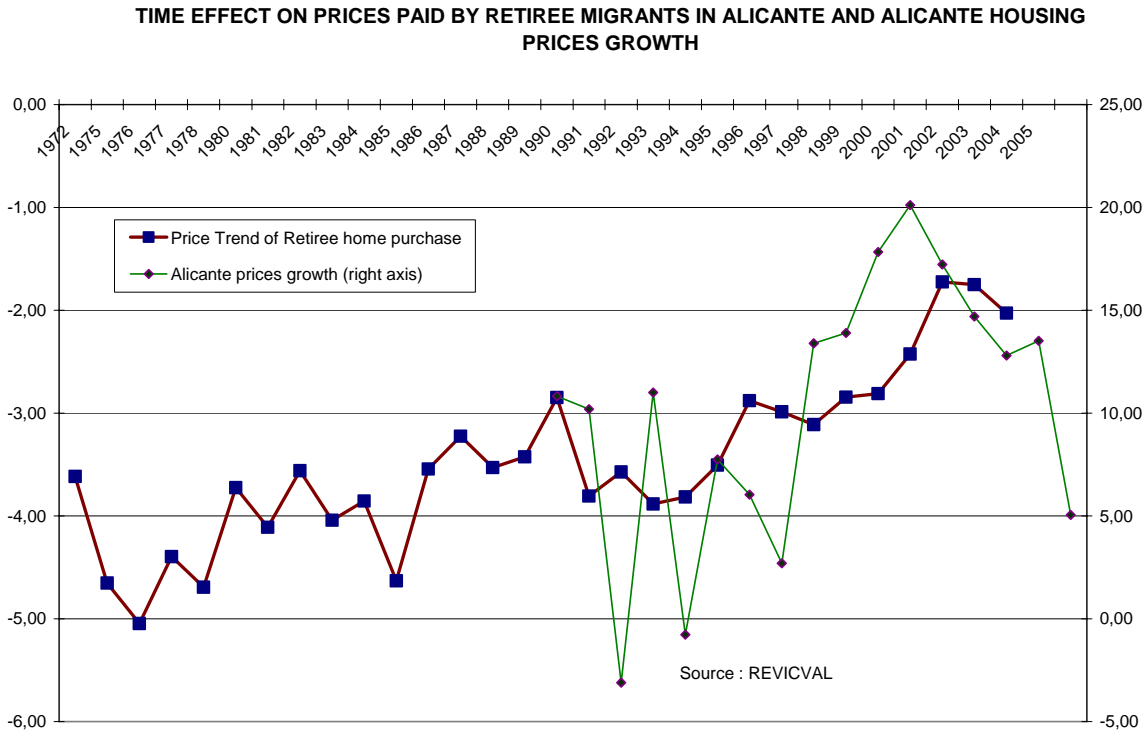


Figure 12. Retiree House Size Trend *

