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Fundación de Estudios de Economía Aplicada

Age at first-time homeownership in Spain

by

Namkee Ahn*

DOCUMENTO DE TRABAJO 2001-23

December 2001

* FEDEA.

Abstract

Owning a house is one of the important achievements in one's life. It is often closely related to important lifecycle events such as emancipation, marriage and childbearing. It also has important implications regarding geographical mobility and labor market commitment. In this paper we examine the determinants of age at first home ownership for the Spanish population using the Spanish Socio-demographic Survey. Some interesting results are as follows. (1) Age at becoming a owner-occupier is closely related with age at marriage. More than 50% of the purchases of first house coincide with the time of marriage. (2) The hazard rate of homeownership among men is 3-4 times higher during an employed period than during an unemployed period, and within an employed period the rate is about twice higher if the job is a permanent one than if it is a temporary one. (3) An implication for the future is that given other things equal a better employment prospect along with an increasing number of two-earner couples will shorten the age at home-ownership and thus increase the proportion of homeownership.

1. Introduction

Becoming an owner of a house is one of the important achievements in one's life. Whether to buy a house or not and when to buy one is an important economic decision facing young people on their way to independent adulthood. These decisions are often closely related to important lifecycle events such as emancipation, marriage and childbearing. In the case of Spain, close to 50 percent of the house purchases occurs at the same year of marriage. At the same time, age at marriage, for many, coincides with the time of emancipation, that is, the age at leaving parental home.

Age at becoming a home-owner has other important implications, such as geographical mobility and labor market commitment. Due to a substantial transaction cost owner-occupiers face a higher cost of changing residence than renters. Recently, Oswald (1996) conjectured that high proportion of home ownership could be a main culprit of high unemployment in some European countries. He suggests that the high home ownership rates reduce mobility in the labor market therefore leading to high unemployment. Considering that the transition rate from ownership to non-ownership is extremely low in most countries, the earlier the age at owner-occupation or the higher the rate of owner-occupation, the lower the labor market mobility. Although the causal relationship is hard to establish between homeownership rates and unemployment rates, the fact that Spain has had both rates highest during the last two decades motivates our study[1].

In Spain as in many other European countries, there is a clear increasing trend of home ownership rates. According to the Spanish Family Expenditure Survey the homeownership rate increased from 68% in 1980 to 78% in 1990 and to 82% in 1998. The increasing home ownership rate might be attributed to various socioeconomic factors. The economic expansions during the second half of both 1980s and 1990s helped many young people to be able to afford a house. A development of a mature and competitive financial market throughout the period has pushed down the mortgage interest rate and made it easier the access to mortgage credit market. At the same time, there have been substantial fiscal advantages for owners compared to renters.

[1] Barceló (2001) models the decisions of housing tenure and labor mobility and using the Spanish Household Panel Survey, she finds lower probability of simultaneous moves (entrance to employment and residential move) among homeowners than renters.

Another potentially important factor which explain the rise of ownership rate is the continuous aging of the Spanish population. The numerous baby boom generation (those born approximately between 1960 and 1976) have started to advance from the early adulthood to mature adulthood.[2] Since the homeownership rates increase rapidly between the ages 20-40, as can be seen in Figure 1, a part of recent increase in ownership rate is likely to be due to the changes in the population age structure. As the population aging intensifies in the forthcoming decades due to the aging of the baby boom generation (see Figure 2), the homeownership rates could increase even further due to purely age composition changes of the population.

Beside the changes in age composition, there are also other socio-demographic changes that could affect the homeownership pattern. For example, the female labor force participation rates and the education level for both genders have increased continuously. Higher female employment and greater earning capacity could improve the couples' capability of buying a house earlier, not only through a greater saving capability but also through easier access to credit market. Also have increased substantially the age at marriage and the proportion of never-married and divorced population for both genders. These changes could also affect the ages at and the rates of homeownership of a population.

The pattern of homeownership has important implications in the situation of the housing market. The demand for the first owner-occupied housing takes a major share of the total house demand. Therefore, the age pattern of first-time homeownership along with the age composition of the population is an important determinant of the housing demand. On the other hand, the optimal timing (age) of buying the first house is sensitive to the housing (price) and credit market situations (mortgage interest rate and down-payment ratio) as well as individual financial circumstances. Not only the affordability but also the accessibility of an individual to desired houses depends on these circumstances. Even a small difference in the time of purchase could result in a substantial difference in real costs of the same house. Therefore, potential buyers delay or advance the purchase time to minimize the costs. This usually causes deeper swings of cycles in the housing market than the general business cycle.

[2] See Ahn (1999) for more detailed discussion on the Spanish demographic situation and some important implications of recent demographic changes.

In this paper we analyze the ages at which Spanish people become a homeowner for the first time using a discrete time hazard model. We use retrospective data from the Spanish Sociodemographic Survey (1991). We highlight how the current status and the history of employment affect the age of homeownership. We also examine the marital status and education level as well as male-female differences in determining age at homeownership. Finally, based on our analysis we attempt to shed some light on the plausible future scenario of the Spanish housing market.

2. Data and Sample Hazard Rates of First-time Homeownership

The Spanish Sociodemographic Survey provides us with the retrospective information for the representative sample of over 150,000 individuals (aged 10 or more) on their histories of residence, housing tenure, household structure, marital status, childbearing, and labor market situation. Although the survey is already a decade old covering only up to year 1991, this is a unique source of data in Spain which gives us the opportunity to examine the age at homeownership.[3]

Using the information on the housing tenure history we calculate the age at first-time homeownership. Unfortunately, the tenure information is obtained only for the houses that individuals were residing since 1981 (10 years before the survey date). For those who were already an owner of a house in which they were residing in 1981, we use the year when the respondent started living in that house to calculate the age at first homeownership. Obviously, this treatment could lead to an erroneous age at first-time homeownership. If the house in which the respondent was residing in 1981 was not the first owned house the actual age at the first-time homeownership will be younger than the one assumed, while the actual age of first homeownership would be older than the one assumed if the respondent purchased the house in which he/she was residing initially as a renter. Furthermore, the older the respondents at the survey date, the higher the chances of recall errors of the events of long time ago. To minimize these measurement errors we restricted the sample to those in ages 20 to 40 at the time of survey.

[3] Census, European Household Panel Survey and Spanish Family Expenditure Survey are other data source in which the information of housing tenure is available. However, there are no information on the age at ownership nor the marital, labor market and residence histories.

In our analysis the dependent duration variable is age at the time of first home purchase. As it can be seen in Figure 1, the probability of becoming a homeowner before age 20 is very small, less than 3% in our sample. Furthermore, it is likely that some of those whose age at ownership is less than 20 might be due to measurement errors as discussed earlier. To minimize this problem we decided to include in our sample only those who were not yet a homeowner at age 19. Starting at age 19 we calculate the hazard rate of becoming a homeowner at each year of age. Since the information on the time of house purchase and the age is available only in years, we could not construct any finer duration data. Our final data consists in 219,438 person-years for male sample and 191,296 person-years for female sample.

The age distributions of the hazard rates of the samples are presented in Table 1. The sample hazard rates by age are also shown in Figure 3. The ownership definition is different by marital status. During the unmarried single periods, ownership refers to each respondent while for the married it refers to either the respondent or the spouse of the respondent. For both men and women the ownership hazard rates increase rapidly during the first half of the ages 20s with the highest rate for women at age 25 and for men at 27. During this period of early adulthood, the hazard rates are substantially higher among women than men mostly corresponding to the younger ages at marriage among women than men. In fact, the survival rates (Figure 4) show approximately two to three years of differences between men and women for the same homeownership rates, which are approximate differences in ages at marriage between men and women. Thereafter the hazard rates decrease incessantly. About 50% of women become homeowners by age 29 while the same proportion of men become homeowners by age 32.

The Kaplan-Meier sample survival rates are easy to compute for the variables which are invariant over duration but there is no obvious method for the variables whose values are allowed to vary over duration. We also examine the sample survival rates by education, another important variable which is time constant. Figure 5 shows the sample survival rates by education attainment for men and women. For men they show clear income effect up to the secondary level of education; the higher the education level, the earlier the homeownership. For the university educated men, there is a delay during the ages 20s as they would be still in school or in early stages of labor market career. But as age advances, the university educated men catch up most of the early delays in homeownership rate. It might be also true that the early low hazard rates among the university educated reflect a greater geographical

mobility among them during early stages of career. Somewhat different patterns are shown for women. Women with a secondary level of education catch up early delays as their age advances, reaching the highest ownership rate from the ages of mid 30s. In contrast to the case of men, the university educated women do not compensate the delays in young ages in later ages. This is likely to be due to a lower marriage rate at even advanced ages among the university educated women than those with lower levels of education.

3. Estimation of Hazard Rates of First-time Homeownership

Bivariate Analysis

We examine sample hazard rates of first homeownership by each variables that we are interested in. Overall hazard rates are 4.38% for men and 5.99% for women. First, by marital status, the hazard rate is less than one percent during the unmarried single period but higher than12% during the married periods. This suggests that majority of first home purchases are carried out while married. To know the exact timing of the purchase around the time of marriage we calculate the hazard rates by years before or after the marriage among those ever-married. The results show clearly that the time of purchase of first house coincides with the time of marriage for vast majority of men and women. For both men and women, the hazard rates are higher during the periods after marriage than before, and lower the farther away from the time of marriage. This also suggests that marriage and home purchases are very likely to be simultaneous decisions therefore invalidating causal interpretation.

The variable of our main interest is the labor market situation. Employment status, the type of employment and the duration employed (as well as wages and savings which are not observed in our data) determine the economic capability and the accessibility to the credit market of individuals and couples. In our data set, we are able to distinguish the type of employment in only three categories, no work, temporary contract and permanent contract. The results show important differences in ownership hazard rates by employment status and the type of employment for men but small differences for women. Any type of employment increases considerably the probability of house purchase; the hazard rate of house purchase is seven times higher during the periods of permanent jobs and four times higher during those of temporary jobs than during non-employment. A part of these large differences is likely to

be contributed by other variables, such as age, which are highly correlated with employment situation but not controlled in bivariate analyses. In the following section we perform multivariate analyses to establish the effects of each covariate net of other correlated variables.

Multivariate Analysis

We estimate three different specifications for both men and women samples. The first specification include age, education, employment situation, work experience in years, and region dummy variables. We do not include marriage variables since it is likely to be endogenous. In the second specification we include marriage variables to see how it affects the coefficients of other covariates. In the final specification we include housing tenure prior to ownership. In this specification we loose those observations (about 8% of men sample and 10% of women sample) who were already owner in year 1981 since we do not know their housing situation prior to ownership. In the final model, estimated coefficient of other covariates change only slightly compared to the previous specifications. Therefore, we report only the coefficients of these variables at the bottom of the first column of tables in which the estimated coefficients of other variables are from the first specification.

The results confirm the differences shown in the bivariate analysis in the earlier section. The inverted-V shape of age profile is clearly defined; the hazard rate increases with age up to 27 for men and 29 for women, and thereafter it decreases. The education level has small but significant effects for both men and women; among men those with secondary education level show slightly higher hazard rates than others while among women the negative effect of university education is pronounced.

As in bivariate analysis employment status has strong effects; the hazard rates during a permanent (temporary) work are about three (two) times higher than during no-employment spells among men. The effects become reduced when marriage variables are included but remain substantial and significant. Another variable regarding employment situation is number of years worked. This variable is likely to affect home purchase probability positively as workers with longer employment experience would have accumulated more savings for down-payment or have established greater accessibility to credit market. The results show again an inverted-V shape as in the case of age. Up to 8 years of work experience the hazard rate increases and then starts to decrease. The effects of employment status and work

experience are substantially smaller for women. This is likely to be due to (i) during the time period analyzed (1980s) the contribution of female employment in household income is still low as reflected in a high proportion of women without work (43% of sample years), and (ii) a woman's labor market situation is correlated with some unobserved household characteristics, such as her husband's earnings or employment status.

The entry rate to homeownership also depends on the previous housing tenure. We distinguish four categories in reference to previous housing tenure: renters, those living in a house owned by parents, those living in a house rented by parents, and others. Similar results are shown for both sexes; those living with parents have higher entry rates by 50% than others. This result contrasts that found in Ermisch and Halpin (2000) for the British case in which the renters have higher entry rates than those living with parents. This difference might be due to a lower development of rental housing market in Spain, higher saving potential while living with parents, and stronger family attachment in Spain. Majority of Spanish youth stay with their parents until they save enough money to buy a house. Among those living with parents, the entry rate to homeownership differs according to whether or not the parents are owner or renter, with a much higher entry rate if parents are homeowner. This might be reflecting higher financial assistance from parents to children among the owner parents than renter parents.

4. Conclusions

Owning a house is one of the important achievements in one's life. It is often closely related to important lifecycle events such as emancipation, marriage and childbearing. It also has important implications regarding geographical mobility and labor market commitment. In this paper we examine the determinants of age at first home ownership for the Spanish population using the Spanish Socio-demographic Survey. Some interesting results are as follows. (1) Age at becoming a owner-occupier is closely related with age at marriage. More than 50% of the purchases of first house coincide with the time of marriage. (2) The hazard rate of homeownership among men is 3-4 times higher during an employed period than during an unemployed period, and within an employed period the rate is about twice higher if the job is a permanent one than if it is a temporary one. (3) An implication for the future is that given other things equal a better employment prospect along with

an increasing number of two-earner couples will shorten the age at home-ownership and thus increase the proportion of homeownership.

Finally, we are considering an extension of the paper in which we will estimate simultaneous decisions of house purchase and household formation. Furthermore, for women, the labor market situation is also likely to be endogenous therefore require an analysis of three simultaneous decisions, marriage, labor market and housing situation. Another improvement of the analysis can be achieved including more explanatory variables. In particular, we are considering local economic variables such as local house price, local rental housing market, etc.

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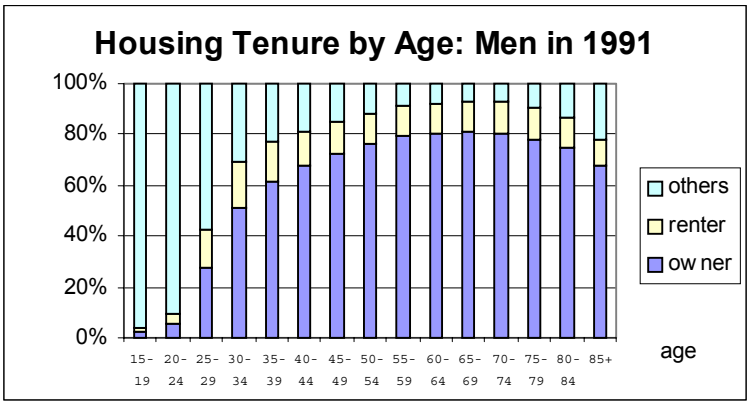
Figure 1: Housing Tenure by Age in 1991



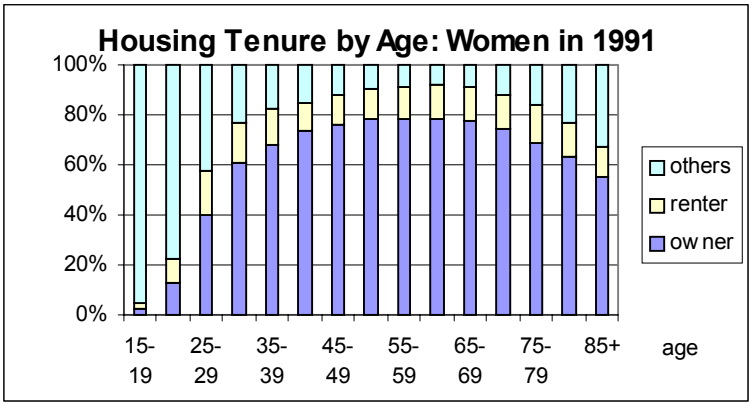


Figure 2: Age Composition of Spanish Population in 1976, 2001, 2026

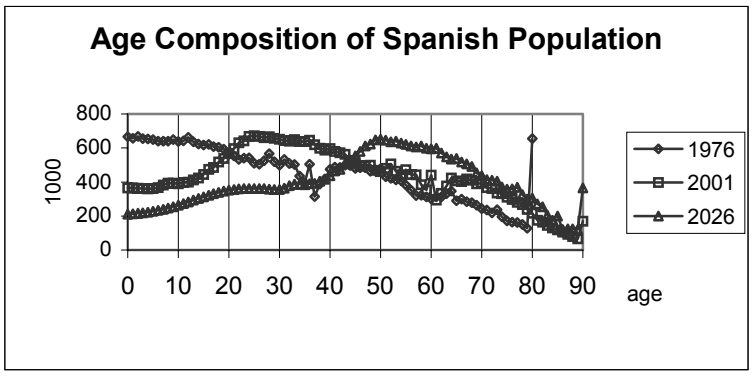


Figure 3: Hazard rate of first homeownership

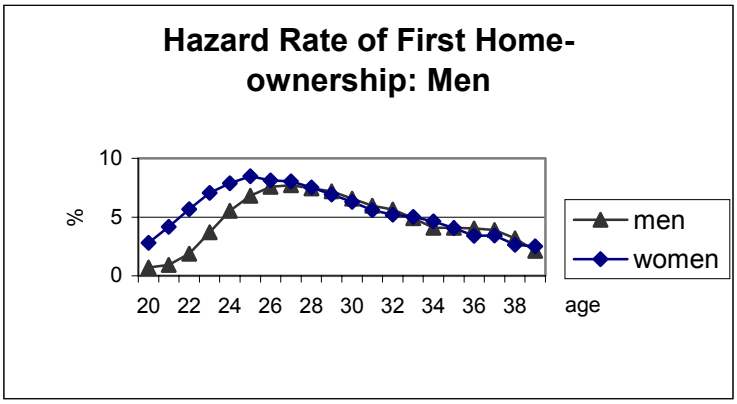


Figure 4: Survival rate of first homeownership

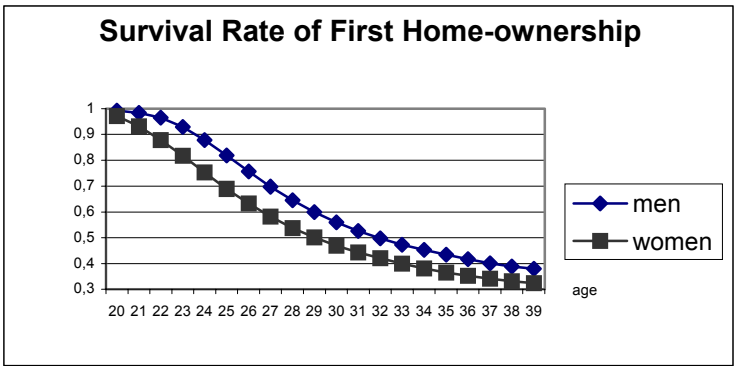


Figure 5: Survival Rate of First Homeownership by Education Level

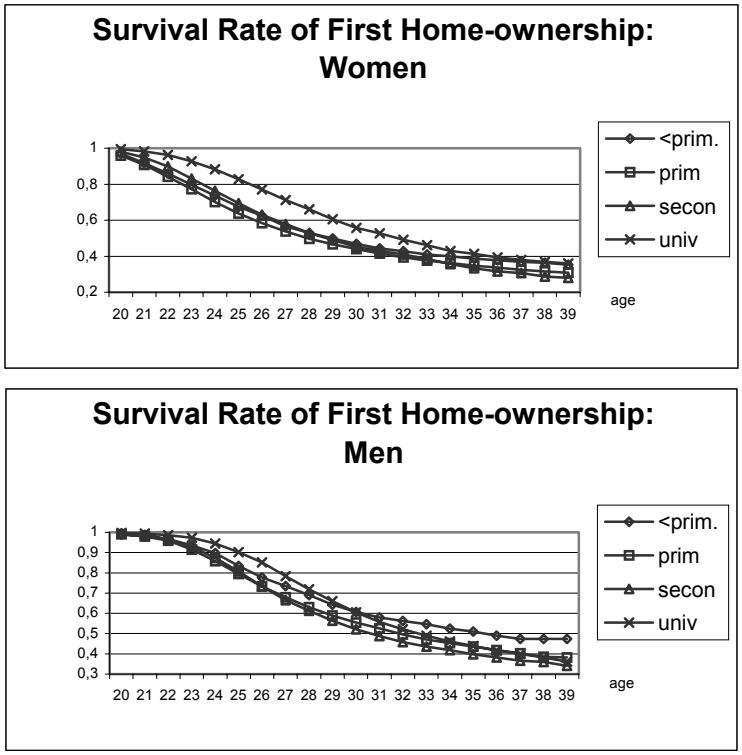


Table 1:
Age Distribution and Sample Hazard Rates

	Men		Women	
Age	**Risk Set**	**Homeownership Hazard Rate**	**Risk Set**	**Homeownership Hazard Rate**
20	25717	0,7	25593	2,8
21	24485	0,92	23863	4,17
22	23153	1,87	21890	5,66
23	21688	3,71	19580	7,05
24	19859	5,53	17251	7,88
25	17702	6,81	14913	8,48
26	15454	7,58	12676	8,11
27	13330	7,72	10698	8,04
28	11284	7,44	8919	7,53
29	9562	7,18	7467	6,91
30	8024	6,58	6182	6,29
31	6681	5,97	5128	5,58
32	5493	5,63	4206	5,21
33	4503	4,91	3429	5,02
34	3600	4,08	2762	4,63
35	2862	4,09	2165	4,06
36	2208	4,03	1671	3,41
37	1642	3,9	1225	3,43
38	1155	3,2	868	2,65
39	705	2,13	556	2,52
40	331	0,91	254	1,18
20-40	219438	4,38	191296	5,99

Table 2:
Annual Entry Rate (hazard rate) to First Home-ownership
(Bivariate Analysis)

Men (20-40)

	Entry rate (%)	# person-year observation
All	4.38	219438
- single	0.65	148116
- married	12.10	71322
Years before/after marriage		
- 2+ years before	0.54	59716
- one year before	2.14	13224
- year of marriage	37.57	13466
- 1-5 years after	6.92	33550
- more than 5 years after	5.21	19680
By Employment		
- no work	0.75	35880
- temporal work	3.44	34532
- permanent work	5.47	149026
By Education Level		
- lower than primary	3.91	16193
- primary	4.52	114664
- secondary	4.64	49589
- Tertiary	3.81	38992

Women (20-40)

	Entry rate (%)	# person-year observation
All	5.99	191296
- single	0.81	105259
- married	12.31	86037
Years before/after marriage		
- 2+ years before	0.54	38915
- one year before	2.12	12377
- year of marriage	40.64	13803
- 1-5 years after	8.17	36907
- more than 5 years after	5.65	25453
By Employment		
- no work	4.94	82122
- temporal work	5.57	29792
- permanent work	7.22	79382
By Education Level		
- lower than primary	5.85	15736
- primary or lower	6.68	98486
- secondary	6.03	36518
- tertiary	4.31	40556

Table 3:
Entry to First Home-ownership (discrete-time hazard regression)

Men 20-40 (number of observations: 219438 person-years)

Covariates	Odds ratio (abs. t-ratio)	Odds ratio (abs. t-ratio)	Sample mean
Age at t	2.67 (16.5)	1.59 (7.37)	25.20
Age squared	0.98 (15.3)	0.99 (6.71)	
Years after marriage (re: single)			
- 2+ years before		1.37 (4.00)	0.28
- 1 year before		3.98 (16.9)	0.06
- year of marriage		102.95 (78.3)	0.06
- 1-5 years after		10.91 (39.5)	0.16
- 6+ years after		7.89 (30.4)	0.10
Education (re: less than primary)			
- primary	1.14 (3.13)	1.11 (2.14)	0.52
- secondary	1.24 (4.59)	1.27 (4.67)	0.23
- tertiary	1.16 (2.83)	1.22 (3.44)	0.18
Work status at t (re: permanent work)			
- temporal	0.66 (21.8)	0.78 (6.19)	0.16
- no work	0.30 (16.4)	0.66 (5.41)	0.16
Years worked	1.20 (10.2)	1.15 (7.29)	5.00
Years worked sq.	0.99 (9.25)	0.99 (5.92)	
Housing Tenure at t-1 (re: renter)			
- with owner parents	1.52 (11.1)	2.10 (18.5)	0.61
- with renter parents	1.01 (0.18)	1.22 (3.79)	0.15
- others	1.17 (2.93)	1.39 (5.64)	0.09
Pseudo R-squared	0.07	0.31	

Women 20-40 (number of observations: 191296 person-years)

Covariates	Odds ratio (abs. t-ratio)	Odds ratio (abs. t-ratio)	Sample mean
Age at t	2.15 (21.3)	1.65 (13.3)	24.82
Age squared	0.99 (20.9)	0.99 (12.7)	
Years after marriage (re: single)			
- 2+ years before		0.99 (0.15)	0.22
- 1 year before		3.19 (14.0)	0.07
- year of marriage		99.32 (79.0)	0.08
- 1-5 years after		12.4 (42.8)	0.22
- 6+ years after		8.10 (32.3)	0.16
Education (re: less than primary)			
- primary	1.07 (1.92)	1.04 (1.09)	0.51
- secondary	0.93 (1.73)	1.10 (2.15)	0.19
- tertiary	0.67 (9.26)	0.95 (1.01)	0.21
Work status at t (re: permanent work)			
- temporal	0.76 (9.43)	0.74 (9.14)	0.16
- no work	0.88 (3.98)	0.78 (6.98)	0.43
Years worked	1.11 (9.84)	1.03 (3.02)	3.20
Years worked sq.	0.99 (8.02)	0.99 (1.89)	
Housing Tenure at t-1 (re: renter)			
- with owner parents	1.56 (12.6)	2.08 (19.4)	0.51
- with renter parents	1.01 (0.26)	1.20 (3.72)	0.13
- others	1.14 (2.59)	1.43 (6.51)	0.09
Pseudo R-squared	0.03	0.27	

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