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Homeownership of immigrants in France[a]

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Abstract

We investigate the difference in homeownership rate between natives and immigrants as well as its evolution in France using a large longitudinal dataset over the 1975-1999 period. For people staying on the territory the whole time (ie. stayers), we show that returns of characteristics change in favor of immigrants consistently with better integration and this is particularly true for South Europeans. Moreover, for immigrants, entries on the territory have a large negative effect on the evolution of the homeownership rate. Although entrants have a better education than stayers, they are younger and thus at an earlier stage of the wealth accumulation process. They also locate in large cities where the homeownership rate is lower, and the returns of their characteristics are lower than the ones of stayers. Finally, exiters have a positive effect on the evolution of homeownership rate but this effect is only one third of the one of entrants.

Key words: homeownership, immigrants, longitudinal data
JEL classification: J15, R21

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1 Introduction

The low access of immigrants to homeownership is a major concern in the United States and Europe as homeownership is usually perceived as a major contributor to integration and well-being. In many countries, there is still a large gap in homeownership rate between natives and specific immigrant communities and their descendants which does not shrink over time. In the US, the gap between whites and African Americans has fluctuated around 25 points (Gabriel and Rosenthal, 2005).[1] In France, the homeownership rate of North Africans has been below the one of natives by 35 points since the seventies and is as low as 17% in 1999.[2]

For immigrants, the evolution of the homeownership rate does not only reflect the access to homeownership which goes along the accumulation of wealth. It also involves selection effects with entries and exits from the territory of individuals with specific financial resources and preferences. In fact, the access to homeownership of immigrants can only be investigated using data that follow individuals over time.

In this paper, we study the dynamics of homeownership using a large longitudinal dataset on French natives and immigrants covering thirty years. Our main contributions are to assess the impact of entries and exits on the homeownership rate of immigrants, and to analyze the evolution of the difference in homeownership rate between natives and immigrants for cohorts of individuals over a long period of time. In particular, we quantify the role of characteristics and their returns on this evolution.

The evolution of homeownership rate for immigrants or ethnic groups is not a new research topic since it has already been investigated in the US over long time periods (Collins and Margo, 2001; Borjas, 2002; Gabriel and Rosenthal, 2005; Coulson and Dalton, 2010; Collins and Margo, 2011).[3] However, this evolution has been studied with repeated cross-section data extracted from censuses that do not follow cohorts of immigrants. Some analyses have been conducted on panel data that track individuals (Charles and Hurst, 2002; Dawkins, 2005) but the focus is on individual decisions and not the aggregate homeownership rate, the sample sizes being rather small compared to censuses extractions. In our study, we use linked data from French censuses from 1968 to 1999 that include all individuals born the first four days of October. We thus have a random sample including entrants than can be followed over thirty years.

We find that the difference in homeownership rate between natives and immigrants is large in 1975 at 14.8 points and has only slightly decreased by 1.4 points over the 1975-1999 period. This difference hides important selection effects related to exits and entries. When focusing on individuals present the whole period (ie. stayers), the difference is found to have increased by 3.5 points. We compute the predicted

[1] Many articles have studied the homeownership rate of ethnic groups instead of immigrant groups. A key difference is that some ethnic groups have been in their host country for centuries and include not only immigrants but also their descendants after several generations, as it is the case of African Americans in the United States.

[2] This figure has been computed from our data for the last available year. Using a cross-section survey, Pan Ké Shon and Scodellaro (2013) find for the year 2008 a gap of around 30 points on a restricted sample of individuals less than 50 who do not live with their parents.

[3] Among recent contributions to the literature, some authors have studied the difference in homeownership rate between natives and immigrants/ethnic groups in level rather than in growth at each percentile of the distribution of homeownership rate (see Carrillo and Yezer, 2009; Fesselmeyer *et al.*, 2012).

difference in the evolution of homeownership rate between natives and immigrants if immigrants had the same returns of characteristics as natives. Interestingly, this predicted difference is larger than the actual one. This suggests that the returns of characteristics have evolved in favor of immigrant stayers, possibly because of integration.

There is some variation across immigrant groups and the increase in the difference in homeownership rate between natives and immigrants is large for North African stayers at 9.9 points whereas it is negative for South European stayers at -0.7 points. There is evidence that returns of characteristics have evolved in a more favorable way for South Europeans than North Africans, suggesting a larger effect of integration.

We finally decompose the evolution of homeownership rate for immigrants aged 18 and more in 1975 into the contributions of stayers, exiters and entrants. Importantly, entrants on the territory have a large negative effect on this evolution. Although entrants have a better education, they are also younger and at an earlier stage of the wealth accumulation process. Moreover, they locate in large cities where the homeownership rate is lower. Additionally, the returns of their characteristics are lower than the ones of stayers. By contrast, exiters have a positive effect on the evolution of homeownership rate but this effect is only one third of the one of entrants.

The rest of the paper is as follows. In Section 2, we discuss the mechanisms that affect the access of immigrants to homeownership and give some contextual information on immigration and homeownership in France after the Second World War. We present our dataset as well as some descriptive statistics in Section 3. Our empirical approach is detailed in Section 4 and results are presented in Section 5. Finally, Section 6 concludes.

2 Literature and French context

2.1 Mechanisms

Homeownership has been encouraged in many countries including France since the Second World War. It is often considered as a sign of economic success and a worthwile investment option to accumulate wealth. Moreover, homeownership in some neighborhoods can give access to green amenities, good schools, or peer effects with educated households. The literature on differences in access to homeownership between ethnic or immigrant groups and natives has mostly developed in the United States. It points at large differences between whites and blacks, or hispanics, which are a source of differences in wealth (Blau and Graham, 1990).

Several reasons are put forward to explain these differences. An obvious one is composition effects with respect to socio-economic characteristics such as diploma. Blacks and hispanics are on average less educated than whites and this affects their access to well-paid jobs, and consequently their accumulation of wealth and propensity to become homeowner. Discrimination on the labour market has a further negative impact on the income of ethnic minorities (see Altonji and Blank, 1999, for a survey) and consequently on their ability to purchase a dwelling.

Moreover, some ethnic groups may benefit from less wealth transfer from their family. Indeed, black buyers purchasing a home have much less help from their family than white buyers (Charles and Hurst, 2002). In fact, Hilber and Liu (2008) show that differences in wealth between whites and blacks is a major driver of the difference in homeownership.

Not only resources but also needs can differ and some ethnic groups may have larger families than whites requiring larger dwellings. For instance, Dawkins (2005) reports for young renters having left their parents' home that the average number of children is 1.26 for blacks but only .55 for whites.

Location matters a lot as the housing market structure differs across places with a varying proportion of dwellings in homeownership and a varying level of housing prices. Borjas (2002) argues that immigrants are clustered in cities where even natives have a low homeownership rate, and Hilber and Liu (2008) show that sorting across cities has a significant role to play in explaining the difference in homeownership rate between whites and blacks.

The lower access to housing and credit markets for immigrants or ethnic groups is also put forward as a significant contributor to their lower access to homeownership. In particular, some incoming immigrants may lack information on the two markets (Krivo, 1995). It has also been shown that some ethnic minorities such as blacks face discrimination on the housing market that affects not only the screening of housing units, with some real estate agents proposing them fewer units than to whites (Yinger, 1986), but also the type of mortgage and insurance (Ross and Tootell, 2004; Yinger, 1996). Interestingly, Charles and Hurst (2002) show that the difference in application rates to a mortgage between whites and blacks is a significant driver of the racial homeownership gap and conjecture that blacks apply less often because they anticipate rejection.

Time spent in the host country has also been shown to be a major driver of access to homeownership (Borjas, 2002). In fact, immigrants arriving young in the host country can get a local diploma which is often better valued than a foreign diploma when looking for a job. The host language is learnt over time and information is gathered on the society, including some on the workings of the labour, housing and credit markets. Finally, time spent in the host country facilitates marriage with natives who can contribute to downpayment when purchasing a dwelling.

2.2 Immigration and homeownership in France

We now make a brief review of migration flows and homeownership in France since the Second World War to motivate our analysis.

After the war, immigration is considered to be a top priority for demographic and labour reasons. Births are not enough to compensate for casualties and workers are needed for reconstruction. However, immigration remains low for ten years because of heavy regulation and a slow economic growth. Newcomers mostly consist in Italians who have already been migrating to France for decades to occupy low-skilled jobs in the agricultural and industrial sectors. Because of overpopulation, poverty and local hiring by French firms in Algeria, many Algerians emigrate to France. This is facilitated by the colonial status of

Algeria which grants them free mobility between the two countries.

With an increase of the economic growth in the late fifties, immigration from Italy intensifies and soon firms prospect for labour in other countries. These include not only European countries such as Portugal and Spain, but also North African countries such as Morocco and Tunisia. Migrations from Algeria continue especially after the end of the Algerian War in 1962 with mobility agreements.

Immigrant labour mostly works in industries such as mines, metalworking and chemical industry. Some skilled workers are employed in the automobile industry. A large proportion of immigrants, especially among Portuguese and Algerians, also work in the building sector. After 1973, unemployment rises sharply for immigrants as many are laid off in particular in the automobile and metalworking sectors which are hit hard by the crisis. Some measures are taken to expel immigrants and the French government tries to limit entries but immigrants keep entering the country, including families joining male workers. New waves of immigrants include people from Turkey, Subsaharan Africa and Asia.

Tables 1 gives for the years 1975 and 1999 the proportion of immigrants by country of origin when it is at least 2%.[4] In our paper, we study not only immigrants as a whole, but also more specifically the two subgroups of immigrants from North Africa (Algeria, Morocco, Tunisia) and Southern Europe (Italia, Portugal, Spain). There two regions gather six of the seven most important countries of origin in 1999.

Table 1: Proportion of immigrants in 1975 and 1999 by country of origin

1975		1999	
Country	Proportion (%)	Country	Proportion (%)
Italy	20.9	Portugal	14.9
Portugal	19.1	Algeria	12.2
Spain	16.1	Italy	10.6
Algeria	11.7	Morocco	8.8
Tunisia	4.9	Spain	7.8
Poland	4.9	Turkey	5.3
Germany	3.2	Tunisia	5.2
Belgium	2.8	Germany	2.7
Morocco	2.7	Poland	2.4
Yugoslavia	2.0	Belgium	2.2

Note: computed from the Permanent Demographic Sample. Only countries which represent at least 2% of immigrants a given year are reported.

After the Second World War, the French government subsidizes the construction of new dwellings. Homeownership also becomes a major concern and subsidies are gradually introduced for first-time buyers in the form of subsidized loans (Gobillon and Le Blanc, 2008). During the seventies and the eighties, these loans are very attractive as their interest rates are low compared to inflation, and the homeownership rate increases significantly from 45% in 1970 to 54% in 1988. However, the inflation rate falls at the end of the period and subsidized loans become less attractive. Consequently, they are replaced in 1996 by zero-rate loans with postponed reimbursement that complement other mortgages and still exist today.

[4]These figures are computed from our data.

The homeownership rate has remained nearly constant since the end of the eighties and is 56% in 2006.

It is not homeownership but rather finding a proper dwelling which is the main concern of a lot of incoming immigrants after the war. A significant number of newcomers, especially North Africans and Portuguese, end up in temporary dwellings in city centers which quickly become ghettos. As there is a shortage of dwellings, the government encourages the construction of large neighborhoods of concrete buildings (*Grands Ensembles*) at the periphery of cities where many immigrants move in. A large share of these buildings are owned by the State which provides housing for rental to poor and medium income households below the market rent. As these neighborhoods are a source of social segregation, their construction is abandoned in the mid seventies. Existing buildings are not maintained and soon deteriorate, and their population including immigrants live in rather poor conditions. For many immigrants, the situation has not evolved much over time.

As immigrants are mostly low skilled in the sixties and seventies, they are more likely to access homeownership in low-price areas, and thus in peripheral poor suburbs in large cities. Whereas access to jobs has been regulated for them, it is not the case of access to homeownership. This does not preclude immigrants from suffering from discrimination.[5]

3 Data

3.1 The dataset

Our main dataset is the Permanent Demographic Sample (*Echantillon Démographique Permanent* in French) which is built from French censuses and registers of births, marriages and deaths. It tracks individuals born in the first four days of October through the five censuses 1968, 1975, 1982, 1990 and 1999. The sample size is very important as around 900,000 individuals are tracked and it is thus possible to study subgroups of immigrants defined by country of origin.

For the 1968 census, the housing status is not available and we thus limit our analysis of homeownership to the period from 1975 onwards. Nevertheless, this early census will be used to determine whether individuals present in the 1975 census were already present in the 1968 census.

For the 1975, 1982, 1990 and 1999 censuses, the data contain some information on individual, housing and household characteristics. The sex, age, diploma and socio-professional category are given as well as the employment status. We know about the couple status (single, divorced, widowed, married or with a partner) and the number of children. It is also possible to tell whether married individuals live or not with their husband or wife, and to distinguish between single and multi-family households.

Moreover, we have some information on the dwelling including its type (a flat or a house), its year of construction, its number of rooms, and whether or not it is equipped with sanitary equipment.[6] We

[5] For instance, Combes *et al.* (2012) provide evidence that there is customer discrimination against non-European immigrants in the rental market

[6] We do not use these variables to study the housing tenure choice as they are endogenous to this choice, but they will be used in further work to characterize owned dwellings for natives and immigrants.

know whether it is owned or rented, and the size of the urban unit where the dwelling is located is also given in brackets which we regroup in six categories: rural areas and urban units with less than 10,000 inhabitants, between 10,000 and 100,000, between 100,000 and 200,000, between 200,000 and 2,000,000, and Paris.

Since our data are extracted from censuses, we do not have information on income and wealth. US evidence suggests that it is permanent income rather that current income that influences access to homeownership (Coulson, 1999). We will proxy for wealth and permanent income with detailed age, diploma, occupation, family and location variables. We will thus estimate a reduced form of the probability of homeownership.

The immigrant status of individuals is determined using information on the place of birth and the country of birth. For immigrants, we determine the intercensitary period in which they immigrated in France (except when they immigrated before 1968). Information on the partner allows to determine whether immigrants are involved with another immigrant or a native.

There are some shortcomings to the sample. For the 1975 census, the information on housing and household is not available for 11.4% of observations as not all the filled census forms were processed in some municipalities. These observations are not included in the analysis. For the 1982 census, only a random sample of one fourth of individuals is available.[7] For the 1999 census, there is an higher attrition for immigrants born in the second and third days of October.[8]

We restrict our attention to individuals aged above 18 and focus on homeownership by the household head or a spouse as opposed to rental in the public or private sector, or stay in any other type of accommodation (such as parents' or a friend's home).[9]

3.2 Descriptive statistics

We now provide figures on the sample composition and homeownership rates of natives and immigrants. Among immigrants, we report specific information for South Europeans (Italians, Spanish and Portuguese) and North Africans (Algerians, Tunisians and Moroccans) which are, respectively, the first and second most important groups of immigrants.

As shown in Table 2, the proportion of immigrants in nearly constant at around 9% over the 1975-1999 period, except between 1975 and 1982 where it slightly increased.[10] This general trend masks some heterogeneity by origin. Whereas the proportion of South Europeans has decreased constantly, the proportion of North Africans has increased, mostly because of a specific wave of immigration coming from Morocco and Tunisia.

[7] The information was not processed for the other observations for financial reasons.

[8] The rate of attrition for these individuals is 10 points higher than for those born the first and the fourth days of October.

[9] Other types of accommodation include an institution, a hotel room, a mobile home and prison.

[10] Note that the number of observations increases significantly between 1975 and 1990. This occurs because the French population increased a lot after the Second World War and until the eighties, and 11.4% of observations could not be used in 1975 because of missing data.

The homeownership rates of natives and immigrants have increased over the period, respectively from 41% in 1975 to 50% in 1999 for natives and 26% to 37% for immigrants. A major driver of this increase has been the introduction of subsidized loans after the Second World War to encourage access to ownership. Nevertheless, the difference in homeownership rate between the two groups has only has slightly decreased by 1.4 points over the period. Interestingly, there is some heterogeneity in the homeownership rate between immigrant groups both in level and trend. The homeownership rate is particularly low for North Africans at every census date (starting at only 5% in 1975), and the gap with natives has only slightly decreased over time from 35 points to 33 points. By contrast, the homeownership rate is much higher for South Europeans at every census (starting at 28% in 1975), and the gap with natives has vanished over time. In 1999, the homeownership rate of South Europeans is even three points above the one of natives.

Table 2: Homeownership rates of natives and immigrants (1975-1999)

	1975	1982	1990	1999
Proportion of homeowners (%)				
Natives	40.54	44.93	48.68	50.08
Immigrants	25.74	27.90	33.31	36.68
including:				
North Africans	5.28	7.04	11.26	16.57
South Europeans	27.77	33.44	43.55	53.41
Proportion of immigrants in the population				
Immigrants	8.79	9.01	9.05	9.05
including:				
North Africans	1.28	1.63	1.73	2.12
South Europeans	4.73	4.17	3.71	3.02
Number of observations				
Natives	292,053	88,939	389,468	416,523
Immigrants	28,135	8,805	38,738	41,422
including:				
North Africans	4,089	1,591	7,406	9,705
South Europeans	15,152	4,076	15,870	13,823

Note: computed on the population of individuals who are at least 18 years old. When a household owns a dwelling, it is considered to be the property of the household head and his partner (if any), but not the property of the other members of the household (if any).

Of course, these stylized facts mask important composition effects. Following the argumentation of Borjas (2002), we provide descriptive evidence on the role of time spent in the host country, age, region of origin and location in the host country.

In particular, there are ingoing and outgoing flows of immigrants over the period whereas time spent in France is important for the wealth accumulation process allowing access to ownership. As we have longitudinal data, we can focus on the immigrants staying in France over the whole 1975-1999 period (ie. stayers).[11] Time since arrival matters for social integration, and we thus consider separately immigrants

[11]It should be kept in mind that there can be some selection effects such that immigrants more or less likely to become homeowners leave the country. As we report figures on the homeownership rate for individuals present at the four censuses from 1975 to 1999, we only use the sample of one fourth corresponding to individuals for whom homeownership can be determined in 1982. Results obtained for the whole cohort for the years 1975, 1990 and 1999 are reported in Table A.1 in Appendix and are similar to those in Table 3.

who arrived in France before 1968, and those who arrived in France between 1968 and 1975. We compare these immigrants with natives already in our dataset in 1975 who have a homeownership rate of 38% in 1975 and 71% in 1999.

Interestingly, Table 3 shows for immigrants who arrived before 1968, that the homeownership rate of stayers has increased more slowly than the one of natives over the 1975-1999 period. Whereas it was two points below in 1975 at 36%, it ends up being eight points below in 1999 at 62%. In particular, the homeownership rate of North Africans was very low in 1975 at 11% and reaches only 32% in 1999. By contrast, the homeownership rate of South Europeans started much higher at 38% and increased at the same pace as the one of natives to end up being very close in 1999 at 70%.

For immigrants who arrived between 1968 and 1975, the homeownership rate of stayers is only 8% in 1975, and is thus much lower than the one of immigrants who arrived before. Its growth is more important but it reaches only 50% in 1999. Once again, there are important differences between North Africans and South Europeans. The homeownership rate of North Africans starts very low at 4% in 1975 and, although it increases over the period, it remains low and reaches only 31% in 1999.[12] By contrast, South Europeans have a larger homeownership rate in 1975 at 6% and it grows fast to reach 54% in 1999.

As we have a large dataset, we can study the difference in homeownership rate between native and immigrant stayers by age group. When focusing on natives and immigrants who arrived before 1968, we find that the youngest cohorts aged 18-24 both have a homeownership rate which is below 3% in 1975 and it increases nearly at the same pace to reach 67% for natives and 64% for immigrants in 1999. The difference between the two groups is quite small and it suggests that immigrants who spent at least part of their childhood in France were to some extent able to achieve economic success. Some reasons can be additional time to learn French, a French diploma and the transmission of wealth acquired by parents in France. For older cohorts, immigrants always have a significantly lower homeownership rate in 1975 than natives. Whereas the gap is nearly stable for individuals aged 25-44, it decreases for those aged above 45. Interestingly, for individuals aged above 55 in 1975, the homeownership rate of immigrants is very close to that of natives in 1999 (although still very slightly below). This life-cycle evolution is due to the homeownership rate of natives reaching stability and then decreasing at retirement age, whereas the homeownership rate of immigrants keeps increasing. Finally, for all age groups before 45, immigrants who arrived between 1968 and 1975 have a much lower homeownership rate at all dates than immigrants who arrived before 1968.[13] The difference between the two groups can be due to composition effects or the importance of life experience in the host country.

Our longitudinal data allow us to identify immigrants who are exiters and entrants, and we can thus investigate to some extent how the homeonwership rate of immigrants is influenced by selection effects. Table 4 shows that, at every census, the homeownership rate of exiters is higher than the one of entrants, but lower than the one of the overall population of immigrants. This is also true when considering South

[12] These figures are computed on a small sample of only 94 individuals but they are confirmed by results in Table A.1 in Appendix for the whole cohort.

[13] The sample size is too small to compute meaningful figures at age above 45.

Table 3: Homeownership rates of native and immigrant stayers (1975-1999, 1/4 sample)

	Age bracket in 1975	1975	1982	1990	1999	N
Natives	All	37.91	56.14	68.27	70.71	44,168
Immigrants, arrival≤1968	All	35.72	50.80	60.38	62.27	1,691
including:						
North Africans	All	11.18	17.06	25.29	32.35	170
South Europeans	All	38.41	55.47	66.52	70.39	932
Immigrants, 1968<arrival≤1975	All	8.19	23.89	41.59	50.22	452
including:						
North Africans	All	4.26	9.57	20.21	30.85	94
South Europeans	All	5.63	24.68	44.16	53.68	231
Natives	18-24	2.42	27.56	58.34	66.95	9,517
Immigrants, arrival≤1968	18-24	0.00	23.78	53.05	64.02	164
Immigrants, 1968<arrival≤1975	18-24	1.75	19.30	44.74	52.63	114
Natives	25-34	28.61	58.17	69.83	73.87	11,846
Immigrants, arrival≤1968	25-34	21.95	48.46	64.71	68.63	357
Immigrants, 1968<arrival≤1975	25-34	5.48	23.74	38.36	51.60	219
Natives	35-44	53.34	67.48	73.44	77.50	9,481
Immigrants, arrival≤1968	35-44	37.86	50.95	57.38	59.52	420
Immigrants, 1968<arrival≤1975	35-44	17.86	26.19	45.24	47.62	84
Natives	45-54	59.51	68.42	74.18	73.41	8,399
Immigrants, arrival≤1968	45-54	48.43	60.99	64.80	65.25	446
Immigrants, 1968<arrival≤1975	45-54	\	\	\	\	24
Natives	55-64	62.27	64.85	65.55	57.15	3,753
Immigrants, arrival≤1968	55-64	51.98	55.95	59.13	56.75	252
Immigrants, 1968<arrival≤1975	55-64	\	\	\	\	9
Natives	≥ 65	62.63	59.81	57.59	38.23	1,172
Immigrants, arrival≤1968	≥ 65	38.46	38.46	46.15	36.54	52
Immigrants, 1968<arrival≤1975	≥ 65	\	\	\	\	2

Note: computed on the population of individuals who are at least 18 years old. When a household owns a dwelling, it is considered to be the property of the household head and his partner (if any), but not the property of the other members of the household (if any). Our sample is only one fourth of stayers as we focus on individuals who can be tracked over the whole period and only one fourth of the 1982 Census information is available. N: number of observations.

Europeans only. However, for North Africans, the homeownership rate of exiters and entrants is close at every census. When considering age groups of immigrants, we can see that the homeownership rate is always lower for exiters and entrants than for the whole age group. However, the aggregate pattern of a higher homeownership rate for exiters than for entrants is not verified for individuals aged 18-24 and is not very pronounced for the other age groups as, for them, the homeownership rates of exiters and entrants are rather close. In fact, the aggregate pattern is mostly generated by entrants being younger than exiters and thus having a lower homeownership rate.

Table 4: Homeownership rates for entrants and exiters (1975-1999)

	Sample	1975	1982	1990	1999
Natives	All	40.54	44.94	48.69	50.08
Immigrants	All	25.74	27.90	33.31	36.68
	Entrants	12.05	13.32	16.58	19.62
	Exiters	18.09	20.12	24.28	
North Africans	All	5.28	7.04	11.26	16.57
	Entrants	3.00	4.58	6.93	8.87
	Exiters	3.34	4.00	8.16	
South Europeans	All	27.77	33.44	43.55	53.41
	Entrants	13.41	17.97	27.55	27.46
	Exiters	19.98	24.87	33.65	
Immigrants aged 18-24	All	2.58	1.89	1.90	1.73
	Entrants	2.52	1.56	2.25	2.63
	Exiters	1.92	1.47	1.51	
Immigrants aged 25-34	All	11.22	13.65	18.53	16.31
	Entrants	6.96	7.21	12.21	13.76
	Exiters	7.44	7.38	11.28	
Immigrants aged 35-44	All	23.40	27.09	35.46	36.68
	Entrants	11.74	14.76	20.91	24.99
	Exiters	12.84	14.38	23.29	
Immigrants aged 45-54	All	36.56	34.95	41.17	47.50
	Entrants	19.42	22.60	25.53	33.13
	Exiters	22.25	20.70	27.86	
Immigrants aged 55-64	All	42.30	47.44	46.87	49.95
	Entrants	28.46	32.64	31.60	43.88
	Exiters	30.80	32.18	33.60	
Immigrants aged ≥ 65	All	37.05	39.59	47.56	52.17
	Entrants	27.89	32.22	35.44	40.95
	Exiters	31.71	36.28	41.22	

Note: computed on the population of individuals who are at least 18 years old. When a household owns a dwelling, it is considered to be the property of the household head and his partner (if any), but not the property of the other members of the household (if any).

Among possible candidates for explaining the gap in homeownership rate between natives and immigrants as well as its evolution is the location of residence and different returns of locations on homeownership for the two groups. Table 5 gives the proportion of natives and immigrants by urban unit size. It shows that the proportion of natives in rural areas and urban units less than 50,000 inhabitants is higher at all dates than the proportion of immigrants, especially in rural areas. The two proportions are nearly equal for urban units with 50,000-200,000 inhabitants. The proportion of immigrants in urban units with more than 200,000 inhabitants is larger than the proportion of natives, especially in the Paris urban unit

(which includes Paris and its inner circle). Interestingly, the proportion of immigrants in the Paris urban unit has increased over the 1975-1999 period, whereas it has decreased in rural areas and urban units less than 200,000 inhabitants. This trend is also observed for the two specific subgroups that are North Africans and South Europeans.

Table 6 shows that immigrants in rural areas and urban units less than 10,000 inhabitants had a lower homeownership rate than natives in 1975 but their rates are similar in 1999 and rather high at around 65%. The gap in homeownership rates also decreases over the period for urban units with 10,000-200,000 inhabitants but it is still around 10 points in 1999. The gap is stable over the period at around 10 points for urban units more than 200,000 inhabitants including the Paris urban unit, with immigrants having a homeownership rate which is low at around 30%. Taken together, descriptive statistics on location of residence and homeownership rates at each location suggest that residential choices could have pushed toward an increase in the gap in homeownership rate with the proportion of immigrants increasing in the Paris urban unit where their homeownership rate is low (and in particular lower than the one of natives).

Table 5: Distribution of natives and immigrants by urban unit size (%)

	1975	1982	1990	1999
Rural				
Natives	32.06	29.04	28.15	26.71
Immigrants	15.96	13.28	11.02	10.39
0 - 10,000				
Natives	11.25	11.79	12.09	12.45
Immigrants	10.52	9.11	8.38	7.75
10,000 - 50,000				
Natives	12.10	11.72	11.85	11.85
Immigrants	11.58	10.27	10.86	10.27
50,000 - 200,000				
Natives	16.09	14.01	13.36	12.98
Immigrants	16.84	13.66	13.18	11.36
200,000 - 2,000,000				
Natives	17.17	18.98	20.31	22.31
Immigrants	24.39	24.41	24.07	25.59
Paris				
Natives	11.32	14.47	14.24	13.71
Immigrants	20.71	29.27	32.49	34.63
including:				
North Africans	31.27	37.34	36.70	36.17
South Europeans	17.21	23.97	25.32	26.33

Note: computed on the population of individuals who are at least 18 years old. When a household owns a dwelling, it is considered to be the property of the household head and his partner (if any), but not the property of the other members of the household (if any). "Rural" corresponds to municipalities in rural areas, and other labels correspond to urban unit size brackets or Paris urban unit.

Table 6: Homeownership rates of natives and immigrants by urban unit size

	1975	1982	1990	1999
Rural				
Natives	51.42	57.12	61.91	63.55
Immigrants	41.78	49.79	59.77	65.53
0 - 10,000				
Natives	42.31	48.45	53.02	54.46
Immigrants	28.40	37.41	43.22	51.18
10,000 - 50,000				
Natives	36.29	41.83	46.56	48.08
Immigrants	22.95	26.99	33.72	38.17
50,000 - 200,000				
Natives	33.92	38.07	42.57	44.19
Immigrants	21.35	23.21	30.35	32.52
200,000 - 2,000,000				
Natives	33.34	37.88	41.52	42.40
Immigrants	23.10	23.83	29.69	32.18
Paris				
Natives	32.89	36.05	38.56	39.69
Immigrants	20.33	20.96	25.52	29.08
including:				
North Africans	6.73	9.09	13.01	17.73
South Europeans	27.78	25.59	31.85	42.09

Note: computed on the population of individuals who are at least 18 years old. When a household owns a dwelling, it is considered to be the property of the household head and his partner (if any), but not the property of the other members of the household (if any). "Rural" corresponds to municipalities in rural areas, and other labels correspond to urban unit size brackets or Paris urban unit.

4 Empirical strategy

We are first interested in assessing the influences of entries and exits on the evolution of the homeownership rate of immigrants. For that purpose, we propose a decomposition of this evolution between two dates t and $t+1$ that distinguishes stayers (ie. individuals present at the two dates), exiters (ie. individuals disappearing from the sample between the two dates) and entrants (ie. immigrants appearing in the sample between the two dates). Denote by H_{it} a dummy equal to one if individual i is homeowner at date t and zero otherwise and $i \in t$ the fact that the individual is in the sample at that date. The probability of homeownership verifies:

$$P\left(H_{it}=1\,|i\in t\right)=\omega_t P\left(H_{it}=1\,|i\in t, i\in t+1\right)+\left(1-\omega_t\right)P\left(H_{it}=1\,|i\in t, i\notin t+1\right) \tag{1}$$

where $\omega_t = P\left(i\in t+1\,|i\in t\right)$ is the probability of being a stayer. According to this formula, the probability of homeownership can be decomposed as a weighted sum of the probability for stayers and the probability for exiters. In the same way, the probability of homeownership at the next date verifies:

$$P\left(H_{it+1}=1\,|i\in t+1\right)=\omega_{t+1} P\left(H_{it+1}=1\,|i\in t, i\in t+1\right)+\left(1-\omega_{t+1}\right)P\left(H_{it+1}=1\,|i\notin t, i\in t+1\right) \tag{2}$$

where $\omega_{t+1} = P\left(i\in t\,|i\in t+1\right)$ is the probability of being present at the previous date. The probability of homeownership can thus be decomposed as a weighted sum of the probability for stayers and the probability for entrants.

It is then easy to show that the evolution of the homeownership rate verifies the following decomposition in three terms:

$$\begin{aligned}
& P\left(H_{it+1}=1\,|i\in t+1\right)-P\left(H_{it}=1\,|i\in t\right) \\
= \;& P\left(H_{it+1}=1\,|i\in t, i\in t+1\right)-P\left(H_{it}=1\,|i\in t, i\in t+1\right) \\
+ \;& \left(1-\omega_{t+1}\right)\left[P\left(H_{it+1}=1\,|\notin t, i\in t+1\right)-P\left(H_{it+1}=1\,|i\in t, i\in t+1\right)\right] \\
+ \;& \left(1-\omega_t\right)\left[P\left(H_{it}=1\,|i\in t, i\in t+1\right)-P\left(H_{it}=1\,|i\in t, i\notin t+1\right)\right]
\end{aligned} \tag{3}$$

Whereas the first right-hand side term is the evolution of the homeownership rate for stayers, the other right-hand side terms capture the influences of entrants and exiters. The second term is increasing in absolute term with the proportion of entrants $(1-\omega_{t+1})$ and corrects the homeownership rate at date $t+1$ for their presence with the difference in the homeownership rate between stayers and entrants. It is positive when the homeownership rate of entrants is higher than the one of stayers. The third term is increasing in absolute term with the proportion of exiters $(1-\omega_t)$ and corrects the homeownership rate at date t for their presence with the difference in homeownership rate between stayers and exiters. It is negative when the homeownership rate of exiters is higher than the one of stayers.

We also want to analyze the gap in homeownership rate between natives and immigrants as well as

its evolution for individuals remaining in France over the whole 1975-1999 period. We explain how to decompose this gap into effects related to differences in characteristics and effects related to differences in returns of these characteristics, following the approach proposed by Fairlie (1999, 2005).[14] For a given individual i, denote X_{it} the set of characteristics at date t and β_{gt} the returns of these characteristics which are allowed to vary with the group g with $g = n$ for natives and $g = m$ for immigrants. For each date, we estimate a logit model for each group such that the probability of being homeowner given the observed characteristics for an individual in group g is $F(X_{it}\beta_{gt})$ where $F(\cdot)$ is the cumulative of the logistic distribution.[15] We introduce the function $R(g, \beta, t)$ that corresponds to the homeownership rate of group g at time t if the returns of characteristics are β:

$$R(g, \beta, t) = \frac{1}{N_g} \sum\nolimits_{i \in (g,t)} F(X_{it}\beta) \tag{4}$$

with N_g the number of individuals in group g (which is constant across time as we are following individuals present at all dates). In particular, $R(g, \beta_{gt}, t)$ is a predictor of the observed homeownership rate for group g at time t. We can decompose the gap in homeownership rate between natives and immigrants in the following way:

$$R(n, \beta_{nt}, t) - R(m, \beta_{mt}, t) = [R(n, \beta_{nt}, t) - R(m, \beta_{nt}, t)] + [R(m, \beta_{nt}, t) - R(m, \beta_{mt}, t)] \tag{5}$$

where the first right-hand side term captures the influence of the difference in characteristics between natives and immigrants, and the second right-hand side term captures the influence of the difference in returns of these characteristics. Put differently, the first contribution states how much larger (or smaller) the homeownership rate of immigrants would be if immigrants had the same returns of characteristics as natives, and the second contribution quantifies how much it would be if natives had the same characteristics as immigrants. Denote $\Delta R(g, \beta, t) = R(g, \beta, t+1) - R(g, \beta, t)$ the evolution of the homeownership rate between two dates t and $t+1$. We can then decompose the difference in the evolution of homeownership rates between natives and immigrants by differencing equation (5) and rearranging the terms:

$$\Delta R(n, \beta_{nt}, t) - \Delta R(m, \beta_{mt}, t) = [\Delta R(n, \beta_{nt}, t) - \Delta R(m, \beta_{nt}, t)] + [\Delta R(m, \beta_{nt}, t) - \Delta R(m, \beta_{mt}, t)] \tag{6}$$

The difference in the evolution can be written as the sum of two terms corresponding respectively to changes due to the difference in the evolution of the characteristics between natives and immigrants (with returns fixed to those of natives), and to changes due to differences in the evolution of the returns of these characteristics (with characteristics fixed to those of immigrants). Computation of the different

[14] It is also possible to compute standard errors of these contributions but, since it requires additional programming, it is left for a later version of this work.

[15] In the implementation, we have the issue that individuals above 18 different from household heads and their partner are not homeowners by definition. It is not possible to include a dummy for their category in a logit model as, for them, homeownership is perfectly determined. At the same time, residing with a household head and possibly his partner can be considered as a choice and is endogenous.

terms involves estimating parameters β_{gt} by maximum likelihood and then plugging the estimators in the formula for the homeownership rate given by (4).

There is not a unique way to decompose the evolution of the difference in homeownership rates between natives and immigrants. An alternative decomposition is:

$$\Delta R\left(n,\beta_{nt},t\right)-\Delta R\left(m,\beta_{mt},t\right)=\left[\Delta R\left(n,\beta_{mt},t\right)-\Delta R\left(m,\beta_{mt},t\right)\right]+\left[\Delta R\left(n,\beta_{nt},t\right)-\Delta R\left(n,\beta_{mt},t\right)\right] \quad (7)$$

The first right-hand side term captures changes related to the difference in the variation of characteristics with returns fixed to the ones of immigrants (instead of natives as in the previous decomposition), and the second right-hand side term captures changes related to the difference in the variation of the returns of characteristics computed using the sample of natives (instead of immigrants). In the empirical section, we comment on decomposition (6) rather than (7) as it seems more natural to take natives as a reference since we investigate to what extent immigrants are able to catch up. Nevertheless, results for decomposition (7) are also provided in the tables.

We last want to assess the influence of exiters and entrants on the evolution of homeownership rate of immigrants. For that purpose, we rely on decomposition (3) and focus on the difference in homeownership rate between stayers and exiters in 1975, as well as the difference in homeownership rate between stayers and entrants in 1999.

We decompose these differences in the same way as the one between native and immigrants stayers given by (5). For instance, the difference in homeownership rate between stayers and exiters can be decomposed into two contributions. The first one captures the influence of the difference in characteristics between stayers and exiters, and the second one captures the influence of the difference in the returns of the characteristics.

5 Results

We now comment the decomposition of the 1975-1999 evolution of homeownership rate for natives and immigrants given by (3). Here and for the rest of the paper, we restrict the sample to individuals aged 18 and more in 1975 to avoid entries of individuals in the original data too young to be in our the sample at the initial date but who reach age 18 over the period. As a consequence, some young individuals immigrating over the period are also excluded and we thus control to some extent for selection of immigrants on age. Nethertheless, our selection makes sure that all entrants are immigrants.

Interestingly, Table 7 shows that, under our sample restriction, the evolution of the difference in homeownership rate between natives and immigrants is positive at 5.2 points whereas for the initial sample it was negative at -1.4 points (see Table 2). This points at significant selection effects.

We decompose the evolution of homeownership rate for this selected sample into the one of stayers, as well as contributions of exiters and entrants. The contribution of exiters is positive when their home-

ownership rate is lower than the one of stayers in 1975. This occurs because adding exiters to the sample makes the homeownership rate lower at the initial date and thus its evolution larger. The contribution of entrants is negative when their homeownership rate is lower than the one of stayers in 1999. This occurs because adding entrants to the sample makes the homeownership rate lower at the final date and thus its evolution smaller.

Table 7 shows that for immigrants, the homeownership rate of the whole sample is lower than the one of stayers. This occurs because entrants have a much lower homeownership rate than stayers at the final date. Exiters have a counterbalancing effect as their homeownership rate is lower than the one of stayers at the initial date but this effect is weaker. By comparison, for natives, the homeownership rate of the whole sample is closer to the one of stayers. Indeed, the proportion of entrants at the final date is very small compared to that of immigrants and they do not contribute much to the evolution of the homeownership rate. Interestingly, the contribution of exiters is negative which points at their higher homeownership rate then stayers at the final date. Native exiters are indeed mostly individuals who die between 1975 and 1999, are on average quite old, and have accumulated enough wealth over the life cycle to purchase a home.

When stratifying the decomposition by immigrant group, results show for South Europeans that the evolution of the homeownership rate of the whole sample is very close to that of stayers. This occurs because the contribution of entrants is small due to the proportion of entrants at the final date being small and the difference in homeownership rate between stayers and entrants being smaller than when considering all immigrants. For North Africans, the evolution of the homeownership rate of the whole sample is smaller than that of stayers. It occurs because the contribution of entrants is rather large. This comes not only from the difference in homeownership rate between stayers and entrants (which is smaller than for South Europeans), but also from the large proportion of entrants at the final date.

Interestingly, the difference in homeownership rate between the whole sample and stayers shrinks with age and even becomes positive. This is due to important changes in the contributions of both exiters and entrants. Indeed, the negative contribution of entrants decreases in absolute term with age, mostly because the proportion of entrants at the final date becomes smaller but also because the difference in homeownership rate with stayers decreases. Immigration is indeed more frequent at younger ages. Also, the contribution of exiters tends to increase with age because of an increase in their proportion, especially at older ages due to an increase in the mortality rate, and an increase in the difference in homeownership rate between stayers and exiters until age 55.[16]

We now focus on stayers for whom we want to make the decompositions of the difference in homeownership rate between natives and immigrants given by (5) and (6). These decompositions make intervene the composition of individuals as well as the returns of their characteristics on the propensity to be homeowner. We first present descriptive statistics on the sample composition and comment the coefficients

[16]It should be noted though that there is one small decrease in the difference in homeownership rate between the whole sample and stayers which occurs between the 45-54 and 55-64 age groups due to a large decrease in the difference in homeownership rate between stayers and exiters.

Table 7: Decomposition of the evolution of homeownership rate between 1975 and 1999 (in points)

	Evolution (pts)	Contribution to evolution (pts)			Decomposition of contribution			
					Proportion (%)		Gap with stayers	
		Stayers	Exiters	Entrants	Exiters	Entrants	Exiters	Entrants
Immigrants								
All	22.9	28.8	2.6	-8.1	61.2	46.7	4.2	-17.4
North Africans	18.9	22.4	2.0	-5.9	62.8	59.4	22.4	-10.0
South Europeans	31.1	33.0	2.4	-3.8	59.5	29.5	4.1	-12.8
Age 18-24	40.9	56.2	0.2	-15.2	46.9	70.0	0.4	-21.8
Age 25-34	37.7	43.4	2.9	-8.3	51.1	48.8	5.7	-17.1
Age 35-44	27.8	26.0	8.8	-6.6	52.0	38.0	16.9	-17.3
Age 45-54	19.9	14.2	9.9	-3.9	52.2	29.1	19.0	-13.3
Age 55-64	5.7	1.7	7.3	-2.6	67.0	25.9	10.9	-10.2
Age $\geq$ 65	-5.6	-15.5	12.1	-2.2	94.3	31.5	12.8	-7.0
Natives								
All	28.1	32.3	-3.3	-0.6	34.6	7.9	-9.5	-7.4
Age 18-24	61.8	62.8	0.0	-0.7	8.6	9.3	0.6	-7.2
Age 25-34	44.5	45.1	0.6	-0.7	9.5	9.6	6.1	-7.7
Age 35-44	25.0	24.1	1.8	-0.5	15.1	6.3	12.1	-8.3
Age 45-54	15.7	13.2	2.5	-0.5	27.6	6.3	9.1	-7.2
Age 55-64	-1.8	-4.5	3.1	-0.3	53.0	6.3	5.8	-4.7
Age $\geq$ 65	-14.1	-22.9	9.1	-0.5	91.0	6.5	10.0	-7.7

Note: computed on the population of individuals who are at least 18 years old. When a household owns a dwelling, it is considered to be the property of the household head and his partner (if any), but not the property of the other members of the household (if any). The decomposition in columns 3-5 is one given by equation (3). Columns 6-9 give the components of the contributions of exiters and entrants. "Gap with stayers" gives the difference in homeownership rate between stayers and exiters/stayers.

obtained when estimating logit models of homeownership in 1975 and 1999.

Table 8 shows that, in 1975, the proportion of individuals below age 30 is lower for immigrants than for natives, but for individuals above age 60, it is the opposite.[17] This is a consequence of the composition and timing of immigration waves. As expected, immigrants have lower diplomas although education increases over time as some young individuals graduate or older ones pass a degree to acquire skills. Nevertheless, education also increases for natives and the difference in diplomas with natives remains constant over the period. The proportion of employed workers drops as many individuals get retired and this gets along with a decrease in individuals in socio-professional categories which are defined only for workers in the labour force. There is no clearcut pattern in the evolution of the difference between immigrants and natives in socio-professional categories. Turning to location, the proportion of immigrants is higher than the one of natives in cities more than 200,000 in 1975, lower in rural areas, and differences remain nearly constant over time. This contrast with figures for the overall population (see Table 4) which showed that the proportion of immigrants in Paris increases over the period. This increase is in fact the result of the arrival of new immigrants.

When considering the family situation, it can be noted that in 1975 there are less singles and multi-family households among immigrants, but more families with four children and more. In particular, it

[17]Note that we report age in 1975 even in 1999 in line with the variables we use later in logit models of homeownership. There is no loss of information since we focus on stayers and the sample is the same in 1999 with individuals being 24 years older.

happens less often for immigrants to live with their parents. Also not surprisingly, immigrants are much more likely than natives to have a partner who is an immigrant. Among the significant evolutions over the period, the numbers of singles and multi-family households decrease especially for natives with the formation of couples and the departure of children from their parents' home. There are also fewer children in households, with a significant decrease in the proportion of households with four children and more, especially for immigrants.

Table 8: Average characteristics of native and immigrant stayers, exiters and entrants (1975 and 1999)

Proportion (%)	Stayers				Exiters		Entrants	
	1975		1999		1975		1999	
	Natives	Immigrants	Natives	Immigrants	Natives	Immigrants	Natives	Immigrants
Homeowner	37.3	28.5	69.6	57.3	46.8	24.3	62.1	39.9
North Africans		13.6		13.6		14.6		23.6
South Europeans		55.1		55.1		51.3		25.8
Age in 1975								
18-24	21.8	13.9	21.8	13.9	3.9	7.8	26.1	37.1
25-29	15.6	14.4	15.6	14.4	2.9	9.6	19.6	18.8
30-34	10.8	13.8	10.8	13.8	2.4	9.0	13.3	12.4
35-39	10.4	12.4	10.4	12.4	2.9	8.4	8.8	9.1
40-44	11.1	10.8	11.1	10.8	4.4	7.5	8.1	7.1
45-49	10.3	10.3	10.2	10.3	6.0	7.2	7.6	5.2
50-54	8.8	10.4	8.8	10.4	7.7	7.1	7.4	4.4
55-59	4.9	6.8	4.9	6.8	7.1	6.6	3.9	2.8
60-64	3.6	4.7	3.6	4.7	11.0	8.1	2.8	1.7
≥ 65	2.7	2.7	2.7	2.7	51.8	28.6	2.2	1.4
Educational level								
No diploma	28.2	62.6	20.6	48.2	51.6	76.2	19.3	43.2
Junior high school	28.5	16.6	37.0	26.3	29.6	11.5	32.1	19.2
Short professional track	20.9	9.7	22.3	13.8	7.4	4.0	21.5	10.9
High school graduate	6.7	3.1	8.9	4.5	2.9	2.4	10.3	8.9
Some college	7.2	4.5	11.1	7.1	3.2	3.5	16.8	17.9
Female	54.8	50.3	54.8	50.3	49.1	41.9	51.7	49.2
Employed	66.1	60.8	39.5	32.8	33.4	47.9	45.9	44.8
Professional category								
Sole traders and farmers	11.0	5.1	5.8	4.1	8.4	3.5	6.4	5.8
Executive	4.3	2.3	5.7	2.9	2.0	1.5	9.1	6.4
Intermediate	11.2	5.2	9.8	4.6	4.5	2.9	11.8	6.9
Employee	18.0	10.0	11.9	9.6	6.4	6.0	13.2	13.7
Blue color	23.9	40.9	9.8	17.0	13.5	35.9	11.1	23.2
Retired	4.0	3.9	43.1	40.6	41.7	21.1	33.2	20.2
Other inactive	27.6	32.5	13.9	21.2	23.5	29.1	15.1	23.8
Other inactive $*$ female	23.5	30.0	12.2	18.4	21.0	24.8	12.0	19.6
Urban unit size								
Rural	30.0	15.1	30.9	14.5	35.5	16.4	24.1	10.9
0 - 10,000	11.0	10.6	13.9	11.5	11.5	10.5	11.5	6.7
10,000 - 50,000	19.6	19.9	20.2	19.8	17.5	18.2	18.6	15.4
50,000 - 200,000	9.7	9.7	6.0	6.2	8.0	9.5	5.5	4.7
200,000 - 2,000,000	17.8	25.0	19.6	28.5	15.7	24.0	25.5	24.0
Paris	11.5	19.6	9.4	19.5	10.8	21.3	14.8	38.2
Family status								
Single	25.7	16.9	10.2	5.8	14.7	17.0	16.5	10.5
Married	69.5	78.1	66.8	72.0	60.1	68.0	60.2	72.5
Divorced/widowed	4.8	5.0	23.0	22.2	25.2	15.0	23.3	17.0
Multi-family household	21.9	12.8	8.2	10.1	12.9	11.7	9.7	12.8
Household head or his partner (if any)	72.0	78.3	74.5	77.2	61.8	62.1	70.5	77.5
Married with non-present partner	1.6	4.7	1.8	3.3	2.2	10.6	2.6	6.8
Non-married with present partner	1.9	2.7	5.0	3.5	2.3	2.9	7.4	5.5
Immigrant partner	3.3	45.2	3.4	41.7	2.7	41.4	5.9	50.8
1 child	19.6	18.0	15.2	15.6	9.0	11.6	15.6	14.3
2 children	17.6	17.8	10.2	11.1	6.0	9.4	11.6	15.1
3 children	9.5	10.9	6.5	8.3	3.9	6.0	7.7	12.4
≥ 4 children	6.8	13.9	2.1	5.8	3.4	7.0	2.8	12.7
N	191,371	11,204	191,371	11,204	101,325	17,655	18,299	11,615

Note: computed on the population of individuals who are at least 18 years old in 1975. "Rural" corresponds to municipalities in rural areas, and other labels correspond to urban unit size brackets or Paris urban unit.

We now comment the results of logit models for homeownership in 1975 and 1999 for native and immigrant stayers which are reported in Table 9. First focusing on results in 1975, we find the expected

life-cycle effects such that the propensity to be homeowner increases with age. Interestingly, the increase is more important for immigrants than for natives and this can be explained by integration increasing with time spent in host country. Diplomas have the usual positive effect and this effect is comparable for the two groups. Being a female has a larger positive impact for immigrants than for natives possibly because some female immigrants come in France when they have a partner with a stable economic condition. Being employed and in a high-skill socio-professional category also seem to matter more for immigrants and this may occur as they may need to rely more on their own resources than natives because of less wealth transmitted from their parents. Individuals, whether immigrants or natives, have a higher propensity to be homeowner in a rural area than in a urban unit which is consistent with the structure of the local housing market.

Among family variables, being married, divorced or widowed, have large positive effects on the propensity to be homeowner especially for immigrants.[18] Interestingly, not living with a partner while being married has a large negative effect especially for immigrants. This may point at an unstable economic situation of the household head which prevents him from accessing homeownership or the anticipation of a return migration. Having a partner who is immigrant also decreases the propensity to be homeowner especially for immigrants, which may point at a lack of resources for purchasing a dwelling especially when the two partners are immigrants. Interestingly, having a large number of children (four or above) decreases the propensity to be homeowner especially for immigrants who often have lower wealth and cannot afford a dwelling large enough for a large family.

Turning to the results for 1999, the age profile for the propensity to be homeowner is of course much different since age is measured in 1975. "Older" people now have a lower propensity as some of them are far past 60 and have decumulated wealth sometimes by selling their dwelling. Interestingly, the age profile is less steep for immigrants perhaps because of a different perception or use of dwellings in homeownership. Diploma effects are much more important than in 1975 as individuals have been able to reap the benefits of having a higher education. Returns to diploma remain lower for immigrants probably because diplomas that most of them obtained abroad are not as well valued as French diplomas. The effects of socio-professional categories are close to those in 1975 and some significant disparities between locations have emerged. Individuals now have a lower propensity to be homeowner in Paris urban unit than in any other location. This probably occurs because more wealth must be accumulated over time to access homeownership in Paris due to high housing prices. For family variables, the magnitude of some effects changes and, interestingly, a large number of children in the dwelling has a larger negative effect on the propensity to be homeowner for immigrants than in 1975. This may result from a selection effect, with parents still having children at home at older ages lacking resources to access homeownership.

We now turn to the difference in homeownership rate between native and immigrant stayers, as well as its evolution over the 1975-1999 period. In line with (5) and (6), we decompose this difference into the contribution of the gap in characteristics evaluated using the returns of natives, and the contribution

[18] Note though that coefficients for immigrants are not precisely estimated.

Table 9: Logit model of homeownership for native and immigrant stayers (1975 and 1999)

	1975		1999	
	Natives	Immigrants	Natives	Immigrants
Age in 1975				
18-24	0.131***	0.297***	0.546***	0.928
	(0.005)	(0.054)	(0.013)	(0.079)
25-29	0.448***	0.632***	0.752***	1.108
	(0.10)	(0.069)	(0.018)	(0.090)
30-34	ref	ref	ref	ref
35-39	1.580***	2.198***	1.211***	1.159*
	(0.034)	(0.205)	(0.034)	(0.103)
40-44	1.982***	2.560***	1.302***	1.110
	(0.042)	(0.245)	(0.039)	(0.114)
45-49	2.404***	3.578***	1.303***	1.221*
	(0.053)	(0.341)	(0.040)	(0.133)
50-54	2.677***	4.124***	1.162***	1.330**
	(0.064)	(0.401)	(0.036)	(0.146)
55-59	2.925***	3.962***	0.953	1.154
	(0.086)	(0.442)	(0.033)	(0.138)
60-64	3.572***	4.799***	0.751***	0.994
	(0.123)	(0.636)	(0.027)	(0.134)
$\geq$ 65	3.501***	5.463***	0.527***	0.724*
	(0.144)	(0.927)	(0.021)	(0.116)
Educational level				
No diploma	ref	ref	ref	ref
Junior high school	1.226***	1.301***	1.588***	1.524***
	(0.052)	(0.086)	(0.024)	(0.782)
Short professional track	1.422***	1.518***	1.909***	1.862***
	(0.024)	(0.136)	(0.034)	(0.131)
High school graduate	1.241***	1.156	2.403***	1.665***
	(0.036)	(0.185)	(0.058)	(0.178)
Some college	1.228***	1.266*	2.490***	1.853***
	(0.034)	(0.175)	(0.062)	(0.190)
Female	1.097***	1.286***	1.114***	1.351***
	(0.017)	(0.100)	(0.015)	(0.075)
Employed	1.261***	1.608***	1.923***	1.807***
	(0.052)	(0.272)	(0.056)	(0.180)
Professional category				
Sole traders and farmers	1.385***	2.540***	1.319***	2.334***
	(0.030)	(0.277)	(0.041)	(0.296)
Executive	1.515***	1.960***	1.462***	2.157***
	(0.049)	(0.331)	(0.050)	(0.361)
Intermediate	1.257***	1.580***	1.378***	1.582***
	(0.028)	(0.178)	(0.037)	(0.190)
Employee	1.125***	1.080	0.990	1.137
	(0.023)	(0.113)	(0.024)	(0.103)
Blue color	ref	ref	ref	ref
Retired	1.662***	2.272***	2.127***	1.942***
	(0.085)	(0.471)	(0.080)	(0.238)
Other inactive	0.879	1.751*	1.101*	1.022
	(0.075)	(0.527)	(0.055)	(0.164)
Other inactive $*$ female	1.744***	1.046	1.542***	1.519***
	(0.136)	(0.283)	(0.068)	(0.221)
Urban unit size				
Rural	2.579***	2.215***	3.505***	3.990
	(0.054)	(0.185)	(0.076)	(0.320)
0 - 10,000	1.529***	1.198*	2.103***	2.148***
	(0.037)	(0.112)	(0.049)	(0.171)
10,000 - 50,000	1.090***	0.941	1.540***	1.394***
	(0.023)	(0.073)	(0.033)	(0.094)
50,000 - 200,000	1.066***	0.983	1.413***	1.392***
	(0.027)	(0.097)	(0.040)	(0.129)
200,000 - 2,000,000	1.054**	0.939	1.305***	1.266***
	(0.023)	(0.073)	(0.028)	(0.079)
Paris	ref	ref	ref	ref
Family status				
Single	ref	ref	ref	ref
Married	2.602***	4.495***	4.163***	3.451***
	(0.123)	(0.993)	(0.156)	(0.534)
Divorced/widowed	1.392***	2.507***	1.389***	1.753***
	(0.049)	(0.426)	(0.027)	(0.190)
Multi-family household	0.221***	0.523***	0.376***	0.539***
	(0.006)	(0.070)	(0.007)	(0.038)
Household head or his partner (if any)	1.518***	1.951***	1.551***	2.191***
	(0.069)	(0.394)	(0.056)	(0.275)
Married with non-present partner	0.357***	0.155***	0.252***	0.263***
	(0.021)	(0.042)	(0.012)	(0.045)
Non-married with present partner	1.193***	1.218	1.373***	1.320*
	(0.070)	(0.299)	(0.056)	(0.218)
Immigrant partner	0.762***	0.583***	0.816***	0.627***
	(0.022)	(0.033)	(0.026)	(0.035)
1 child	1.132***	1.104	1.093***	0.997
	(0.021)	(0.088)	(0.021)	(0.068)
2 children	1.239***	1.157*	1.198***	0.869*
	(0.024)	(0.097)	(0.028)	(0.070)
3 children	1.208***	0.926	1.080**	0.742***
	(0.028)	(0.088)	(0.033)	(0.069)
$\geq$ 4 children	1.058**	0.789**	0.905**	0.479***
	(0.027)	(0.075)	(0.039)	(0.050)
N	191,371	11,204	191,371	11,204

Note: estimated on the population of individuals who are at least 18 years old in 1975. Odds ratio are reported as well as their standard errors in parentheses ($p < 0.1$, ** $p < 0.05$, *** $p < 0.01$). N: number of observations. "Rural" corresponds to municipalities in rural areas, and other labels correspond to urban unit size brackets or Paris urban unit.*

of the gap in returns between natives and immigrants evaluated using the characteristics of immigrants. Whereas the first contribution states how much larger (or smaller) the homeownership rate of immigrants or its evolution would be if immigrants had the same characteristics as natives, the second contribution quantifies how much they would be if immigrants had the same returns of characteristics as natives.[19] Table 10 shows that the difference in homeownership rate between native and immigrant stayers has increased over the period from 8.7 points to 12.2 points. The contribution of the gap in characteristics has also increased in value from 2.5 points to 7.7 points, and in percentage from 29% to 63%. This increase is related to changes in both the characteristics and their returns for natives over the period. A likely interpretation is that there are variations in the speed of wealth accumulation depending on characteristics which create sizable variations in homeownership over time. Immigrants have characteristics leading to less wealth which would explain why the gap in homeownership rate with natives is larger at the end of the period.[20] Interestingly, the decomposition of the evolution of the difference in homeownership rate shows that explanatory variables predict a larger increase of this difference than the actual one. In fact, this larger increase is compensated by changes in the returns of characteristics (including the constant which is associated to the reference group) in favor of immigrants, which can be interpreted as an effect of the integration process.[21] As shown in table A.2, this result holds qualitatively for all age groups up to age 45.[22]

We also compute decompositions stratified by arrival period. Results are very different for early immigrants who arrived in France before 1968 and late ones who arrived during the 1968-1975 period. For early immigrants, the difference in homeownership rate with natives has increased from 1.9 to 9 points. The contribution of characteristics explains nearly all this increase. This suggests that the integration of early immigrants has not improved much the return of their characteristics over time. The gap in homeownership rate with natives has changed only due to a different evolution of characteristics or a change in the returns of characteristics for natives that would favor them consistently with a faster accumulation of wealth. By contrast, for late immigrants, the difference in homeownership rate with natives is initially very large at 29.5 points and decreases to 22.1 points over the 1975-1999 period. Whereas there is a decrease of 7.4 points, the contribution of characteristics is rather positive at 3.5 points. This means that the returns of characteristics have evolved significantly in favor of immigrants, possibly because they are at an earlier stage of integration and they could improve their integration

[19] As already mentioned, there is not a unique way to make decompositions. Nevertheless, decomposition (6) is the most natural for us as it takes natives as a reference. Alternative decompositions in line with (7) are not commented here to save space but results are reported in tables.

[20] Note in particular that a large gap between natives and immigrants in the proportion of individuals with no diploma remains in 1999 (the gap is even a bit larger than in 1975), and disparities in the returns of diplomas have increased a lot over time.

[21] In 1975, the constants for natives and immigrants are respectively -2.713 and -4.188. In 1999, they are respectively -2.101 and -2.474. Changes in the values of constants are clearly in favor of immigrants. The probability of homeownership for the individual of reference in the logit model can be deduced directly from the constant (as there are only dummies in the regression). The probabilities for natives and immigrants are respectively 6.2% and 1.5% in 1975, and 10.9% and 7.8% in 1999.

[22] For older age groups, it is not possible to make decompositions using the same explanatory variables in the logit model of homeownership because some dummies perfectly predict homeownership.

significantly during the period, which would affect positively their returns.

Decompositions can also be made to compare natives and subgroups of immigrants by origin. Interestingly, for South Europeans, the difference in homeownership rate with natives is rather limited at 7.0 points in 1975 and has decreased over time by 0.7 points whereas explanatory variables would predict a significant increase of 4.4 points. Changes in the returns of characteristics act as a counterbalancing force and this is consistent with some success in the integration process. For North Africans, the difference in homeownership rate with natives is very large at 30.0 points in 1975 and has increased a lot by 9.9 points over the period, whereas changes in explanatory variables predict a slightly smaller increase of 8.0 points. As a consequence, differences in the evolution of characteristics with natives explain most of the gap in the evolution of homeownership rate.

Table 10: Decomposition of the difference in level and evolution of homeownership rates between native and immigrant stayers (1975 and 1999)

Difference in homeownership rate (points in favor of natives)	Raw difference	Reference: natives Contribution of		Reference: immigrant category Contribution of	
		Characteristics	Returns	Characteristics	Returns
All					
1975	8.7	2.5	6.2	6.4	2.3
1999	12.2	7.7	4.5	11.9	0.3
1975-1999 difference	3.5	5.2	-1.7	5.5	-2.0
South Europeans					
1975	7.0	2.4	4.6	6.8	0.2
1999	6.3	6.8	-0.5	6.7	-0.4
1975-1999 difference	-0.7	4.4	-5.1	-0.1	-0.6
North Africans					
1975	30.0	11.2	18.8	7.3	22.7
1999	39.9	19.2	20.7	20.1	19.8
1975-1999 difference	9.9	8.0	1.9	12.8	-2.9
Arrival before 1968					
1975	1.9	0.9	1.0	3.5	-1.6
1999	9.0	7.9	1.1	9.8	-0.8
1975-1999 difference	7.1	6.9	0.2	6.2	0.9
Arrived during the 1968-1975 period					
1975	29.5	0.9	28.6	12.7	16.8
1999	22.1	12.4	9.7	14.4	7.7
1975-1999 difference	-7.5	3.5	-11.0	1.7	-9.2

Note: computed on the population of individuals who are at least 18 years old. When a household owns a dwelling, it is considered to be the property of the household head and his partner (if any), but not the property of the other members of the household (if any). Contributions of characteristics and returns of characteristics are those in line with the decompositions given by (6) and (7).

We next investigate the selection effects related to exits and entries that affect the homeownership of immigrants. We begin our analysis by focusing on the decomposition of the difference in homeownership rate between immigrant stayers and exiters in 1975. We first briefly comment differences in characteristics between the two groups. Not surprisingly, the proportion of individuals aged 65 and more is much larger among exiters than stayers as shown in Table 8. Indeed, part of exiters are people who die over the period, and this mostly occurs at old ages.[23] Exiters are also less educated than stayers, less often females, more often retired, and have fewer children living within the household.

The difference in homeownership rate between immigrant stayers and exiters in 1975 is positive at 4.5

[23]Nethertheless, the proportion of old individuals is much lower among immigrant exiters than among native exiters. This occurs because the sample of immigrant exiters includes a large number of individuals leaving France which are younger than dying people, whereas this is not the case for the sample of native exiters.

points as reported in Table 11. A decomposition of this difference yields a contribution of characteristics which is negative at -2.2 points.[24] Therefore, the actual difference is larger than the predicted one and this is consistent with exiters having lower returns of characteristics than stayers.[25] This selection on returns is particularly strong for South Europeans and can also be detected for early immigrants who arrived before 1968.

We finally focus on the decomposition of the difference in homeownership rate between immigrant stayers and entrants in 1999. We first have a look at the differences in characteristics between the two groups. Table 8 shows that entrants are more often North African than stayers and on average younger, which is not surprising as immigration happens more often at younger ages (although here we focus on individuals aged 18 or more in 1975 who are at least 42 in 1999). Interestingly, entrants have much more often some college education than stayers, and are located much more often in the Paris urban unit where the homeownership rate is lower than in other places. It is also worth noting that they have more children within the household.

Consistently, the difference in homeownership rate between immigrant stayers and entrants in 1999 is large at 17.4 points as reported in Table 11. Nevertheless, a decomposition shows that explanatory variables are able to explain only 6.8 points of this difference. This suggests an important role of the difference in returns of characteristics. A possible explanation is that stayers with specific characteristics have had time to accumulate wealth in the host country, which make them more able to access homeownership that entrants who may not have been able to accumulate wealth to the same extent in their home country. This pattern remains when looking more specifically at South Europeans and North Africans.

Table 11: Decomposition of the difference in homeownership rate between stayers and exiters in 1975 as well as entrants in 1999

Difference in homeownership rate (points in favor of stayers)	Raw difference	Reference: stayers Contribution of	
		Characteristics	Returns
Exiters, 1975			
Natives	-9.5	-14.5	5.0
Immigrants	4.2	-2.2	6.4
North Africans	3.2	2.3	0.9
South Europeans	4.1	-4.1	8.2
Arrived before 1968	1.2	-5.6	6.8
Arrived in 1968-1975	-4.6	-4.8	0.2
Entrants, 1999			
Natives	7.4	4.9	2.5
Immigrants	17.4	6.8	10.6
North Africans	9.9	-0.3	10.2
South Europeans	12.7	6.2	6.5

Note: computed on the population of individuals who are at least 18 years old. When a household owns a dwelling, it is considered to be the property of the household head and his partner (if any), but not the property of the other members of the household (if any). Contributions of characteristics and returns of characteristics are those in line with decomposition (5) and its mirror when it is not the group of stayers but the other group which is the reference.

[24] As for stayers, a logit model of homeownership is estimated for exiters to compute the contributions of the decomposition and results are reported in Table A.3. This table also includes the results for entrants.

[25] Further work will establish whether it is people dying and/or those migrating out of France who have lower returns. In particular, lower returns for emigrants would suggest a less economic success allowing for access to homeownership.

6 Conclusion

In this paper, we have studied the evolution of the homeownership rate of immigrants and compared it with the one of natives. The use of a large longitudinal dataset covering thirty years allowed us to take into account the selection effects due to individuals exiting or entering France during the period.

There are important selection effects. The difference in homeownership rate between natives and immigrants is nearly constant around 14 points over the period. By constrast, for people staying on the territory the whole time (ie. stayers), this difference has increased from only 8.7 points in 1975 to 12.2 points in 1999. Changes in the difference in characteristics between natives and immigrants would predict an even bigger increase, but the returns of characteristics have evolved in favor of immigrants, possibly because of better integration.

Moreover, for immigrants, entries on the territory have a large negative effect on the evolution of the homeownership rate. Although entrants are more often college graduates, they are younger and at an earlier stage of the wealth accumulation process. They also settle in cities where the homeownership rate is lower, in particular Paris. Finally, the returns of their characteristics are lower than the ones of stayers.

Several topics can be adressed in future research.

First, it could be interesting to propose a decomposition of the difference in homeownership rate between natives and immigrants that allows to distinguish the contribution of the young reaching age 18 during the period. This would allow to study the whole sample of data although it would make the analysis more intricate. The decomposition could also distinguish individuals living with family or friends who become independent. These include not only young people leaving their parents' place but also more specifically immigrants housed by relatives or friends who get their own dwelling. Finally, the contribution of exiters could be split into two parts with one for emigrants and one for dying individuals.[26]

One can argue that immigrants and natives may not have comparable dwellings in homeownership. Indeed, the quality and location of owned dwellings may vary. In an extension of this work, we plan to characterize owned dwellings as well as their neighborhood with data extracted from censuses and matched at the municipality level. The homeownership rate at the urban unit level constructed from census data will also be included in our specification of the probability of homeownership. This specification will also be complemented with housing price indices possibly computed from notary data.[27]

In this study, immigrants have been aggregated in a very broad category and two aggregate groups of immigrants, North Africans and South Europeans, have been studied. In a companion study, it would be interesting to analyze homeownership for more disaggregate groups, including Asians and Subsaharan Africans that have immigrated more recently in non-negligible numbers.

It would also be worth complementing our descriptive statistics given in Tables 1 and 2 with more

[26] Exit because of death can be determined thanks to the registers of deaths for all natives but only half the immigrants. Indeed, for immigrants, it was harder to collect the information properly and effort was concentrated on individuals born on the first and third days of October.

[27] A promising approach to study the effect of local variables on homeownership consists in including urban unit fixed effects in the logit models of homeownership for natives and immigrants, and then regress their estimators on local variables, in line with Combes *et al.* (2011).

recent figures computed from the survey *Trajectoires et Origines* for 2008-2009, although information is available only for individuals aged 18-60 and the sample size is smaller than in our case. This would give an idea of the current homeownership gap between natives and immigrants.

So far, we have focused on the cross-section probability of being homeowner, but transitions to first-time homeownership are also worth exploring. This can be done thanks to the longitudinal dimension of our dataset.

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Table A.1: Homeownership rates of native and immigrant stayers (1975-1999)

	Age bracket in 1975	1975	1990	1999	N
Natives	All	37.97	67.83	70.40	176,227
Immigrants, arrival before 1968	All	36.78	60.28	62.35	7,203
including:					
North Africans	All	10.43	27.25	35.36	690
South Europeans	All	38.20	64.69	67.47	4,141
Immigrants, arrival in 1968-1975	All	5.27	40.28	50.24	2,048
including:					
North Africans	All	3.03	15.66	27.02	396
South Europeans	All	6.92	43.55	54.58	1,070
Natives	18-24	2.52	58.19	66.56	37,425
Immigrants, arrival before 1968	18-24	2.87	56.36	64.02	731
Immigrants, arrival in 1968-1975	18-24	3.38	45.13	57.85	503
Natives	25-34	28.06	69.21	73.55	46,608
Immigrants, arrival before 1968	25-34	22.00	63.07	68.43	1,473
Immigrants, arrival in 1968-1975	25-34	6.01	40.25	50.73	1,031
Natives	35-44	53.30	72.96	77.32	38,298
Immigrants, arrival before 1968	35-44	39.00	59.79	63.76	1,813
Immigrants, arrival in 1968-1975	35-44	14.45	33.71	45.04	353
Natives	45-54	59.54	73.64	72.77	34,124
Immigrants, arrival before 1968	45-54	49.17	63.77	64.25	1,877
Immigrants, arrival in 1968-1975	45-54	25.00	39.17	35.83	120
Natives	55-64	61.82	65.56	57.52	15,093
Immigrants, arrival before 1968	55-64	52.10	57.41	52.75	1,073
Immigrants, arrival in 1968-1975	55-64	30.30	39.39	36.36	33
Natives	≥ 65	60.48	54.26	37.44	4,679
Immigrants, arrival before 1968	≥ 65	48.73	44.07	36.86	236
Immigrants, arrival in 1968-1975	≥ 65	\	\	\	8

Note: computed on the population of individuals who are at least 18 years old. When a household owns a dwelling, it is considered to be the property of the household head and his partner (if any), but not the property of the other members of the household (if any).

Table A.2: Decomposition of the difference in level and evolution of homeownership rate between native and immigrant stayers (1975 and 1999), by age bracket

Difference in homeownership rate (points in favor of natives)	Raw difference	Reference: natives		Reference: immigrant category	
		Contribution of		Contribution of	
		Characteristics	Returns	Characteristics	Returns
All					
1975	8.7	2.5	6.2	6.4	2.3
1999	12.2	7.7	4.5	11.9	0.3
1975-1999 difference	3.5	5.2	-1.7	5.5	-2.0
Aged 18-29					
1975	2.6	1.2	1.4	1.9	0.7
1999	8.5	9.0	-0.5	10.7	-2.2
1975-1999 difference	5.9	7.8	-1.9	8.9	-3.0
Aged 24-29					
1975	8.4	4.9	3.5	5.1	3.3
1999	11.6	11.7	-0.1	16.0	-4.4
1975-1999 difference	3.1	6.8	-3.7	10.8	-7.7
Aged 30-34					
1975	21.6	8.8	12.8	15.6	6.0
1999	19.1	11.9	7.2	16.2	2.9
1975-1999 difference	-2.6	3.1	-5.7	0.7	-3.3
Aged 35-39					
1975	19.4	10.8	8.6	19.8	-0.4
1999	18.2	13.0	5.2	18.5	-0.3
1975-1999 difference	-1.2	2.2	-3.4	-1.3	0.1
Aged 40-44					
1975	21.0	9.2	11.8	19.6	1.4
1999	18.8	9.2	9.6	16.4	2.4
1975-1999 difference	-2.2	0.1	-2.3	-3.2	1.0

Note: computed on the population of individuals who are at least 18 years old. When a household owns a dwelling, it is considered to be the property of the household head and his partner (if any), but not the property of the other members of the household (if any). Contributions of characteristics and returns of characteristics are those in line with the decompositions given by (6) and (7). We report results for age 18-29 and not age 18-24 to avoid the issue that some dummies in the logit model of homeownership perfectly determine the homeownership status. Categories for age above 45 are not reported as there are some dummies that could not be introduced in the logit model of homeownership because they correspond to empty cells.

Table A.3: Logit model of homeownership for immigrant exits in 1975 and entrants in 1999

	Exiters 1975		Entrants 1999	
	Natives	Immigrants	Natives	Immigrants
Age in 1975				
18-24	0.171***	0.453***	0.518***	0.646***
	(0.022)	(0.092)	(0.033)	(0.047)
25-29	0.540***	0.755**	0.725***	0.795***
	(0.040)	(0.101)	(0.047)	(0.062)
30-34	ref	ref	ref	ref
35-39	1.536***	1.396***	1.117*	0.870
	(0.100)	(0.164)	(0.100)	(0.082)
40-44	1.937***	1.715***	1.065	1.076
	(0.115)	(0.198)	(0.100)	(0.119)
45-49	2.292***	2.456***	1.108	1.155
	(0.130)	(0.275)	(0.106)	(0.141)
50-54	2.656***	3.239***	1.080	1.199
	(0.149)	(0.356)	(0.106)	(0.158)
55-59	2.663***	3.762***	0.967	1.513***
	(0.153)	(0.422)	(0.109)	(0.225)
60-64	3.352***	5.447***	0.740**	0.927
	(0.190)	(0.610)	(0.092)	(0.176)
$\geq$ 65	3.169***	5.934**	0.420***	0.808
	(0.178)	(0.662)	(0.059)	(0.172)
Educational level				
No diploma	ref	ref	ref	ref
Junior high school	1.363***	1.558***	1.599***	1.411***
	(0.022)	(0.093)	(0.079)	(0.082)
Short professional track	1.513***	1.617***	1.900***	1.661***
	(0.048)	(0.177)	(0.108)	(0.120)
High school graduate	1.786***	1.237***	2.229***	1.742***
	(0.084)	(0.182)	(0.157)	(0.139)
Some college	1.693***	1.530***	2.743***	1.681***
	(0.078)	(0.185)	(0.191)	(0.117)
Female	0.961**	1.127**	1.147***	1.322***
	(0.018)	(0.068)	(0.048)	(0.075)
Employed	1.245***	0.920	1.912***	1.709***
	(0.074)	(0.126)	(0.150)	(0.133)
Professional category				
Sole traders and farmers	2.654***	3.045***	1.244**	1.773***
	(0.092)	(0.328)	(0.113)	(0.181)
Executive	1.620***	1.546***	1.307***	1.557***
	(0.096)	(0.254)	(0.119)	(0.163)
Intermediate	1.263***	1.599***	1.338***	1.525***
	(0.512)	(0.196)	(0.103)	(0.149)
Employee	1.068*	1.031	1.017	0.961
	(0.040)	(0.106)	(0.073)	(0.077)
Blue color	ref	ref	ref	ref
Retired	1.784	1.185	2.257***	1.943***
	(0.112)	(0.176)	(0.240)	(0.214)
Other inactive	0.749***	0.879	0.844	1.085
	(0.063)	(0.169)	(0.110)	(0.145)
Other inactive * female	2.440***	1.258	1.974***	1.164
	(0.157)	(0.203)	(0.235)	(0.151)
Urban unit size				
Rural	2.790***	2.121***	3.764***	4.423***
	(0.070)	(0.143)	(0.232)	(0.337)
0 - 10,000	1.810***	1.248***	2.234***	2.517***
	(0.054)	(0.097)	(0.155)	(0.213)
10,000 - 50,000	1.288***	0.954	1.491***	1.367***
	(0.035)	(0.067)	(0.089)	(0.088)
50,000 - 200,000	1.147***	0.767***	1.666***	1.028
	(0.037)	(0.066)	(0.142)	(0.103)
200,000 - 2,000,000	1.088***	0.923	1.343***	1.149**
	(0.030)	(0.061)	(0.075)	(0.064)
Paris	ref	ref	ref	ref
Family status				
Single	ref	ref	ref	ref
Married	2.249***	3.043***	3.858***	3.997***
	(0.152)	(0.577)	(0.402)	(0.553)
Divorced/widowed	1.565***	2.067***	1.424***	1.638***
	(0.043)	(0.212)	(0.079)	(0.159)
Multi-family household	0.154***	0.254***	0.466***	0.634***
	(0.005)	(0.025)	(0.027)	(0.045)
Household head or his partner (if any)	1.854***	2.670***	1.770***	2.332***
	(0.121)	(0.457)	(0.185)	(0.283)
Married with non-present partner	0.402***	0.231***	0.250***	0.237***
	(0.031)	(0.047)	(0.032)	(0.035)
Non-married with present partner	0.978	1.165	1.316**	1.345**
	(0.077)	(0.235)	(0.150)	(0.191)
Immigrant partner	0.838***	0.574***	0.737***	0.542***
	(0.036)	(0.030)	(0.057)	(0.033)
1 child	0.975	1.254***	1.076	0.992
	(0.028)	(0.087)	(0.065)	(0.070)
2 children	0.992	1.405***	1.215***	1.105
	(0.035)	(0.111)	(0.084)	(0.082)
3 children	1.101	1.291***	0.889	0.881
	(0.043)	(0.125)	(0.076)	(0.073)
$\geq$ 4 children	0.900**	0.991	0.654***	0.658***
	(0.040)	(0.093)	(0.077)	(0.057)
N	101 325	17 655	18 299	11 615

Note: estimated on the population of individuals who are at least 18 years old in 1975. Odds ratio are reported as well as their standard errors in parentheses ($p < 0.1$, ** $p < 0.05$, *** $p < 0.01$). N: number of observations. "Rural" corresponds to municipalities in rural areas, and other labels correspond to urban unit size brackets or Paris urban unit.*