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Trends in intergenerational homeownership mobility in France between 1960-2015*

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Abstract:

We study intergenerational wealth mobility and its evolution in France over the period 1960-2015. More precisely, we identify the persistence of homeownership between parents and children as indicator of wealth mobility in France. We also provide evidence about different sources of heterogeneity in intergenerational homeownership associations in terms of education and geographic areas. Finally, we study the main transmission mechanism: direct financial transfers. We use all available French wealth surveys since 1986 and perform a data panelization using retrospective information. We document multiple results. First, intergenerational correlation in homeownership status has dramatically increased, particularly since the 1990s. Second, this rise is concentrated among people aged between 20 and 39 years old. Third, we observe higher wealth persistence at the top. Four, we find a strong significant effect of direct wealth transfers on the probability of becoming homeowner, which lasts 5 years. Moreover, parental support is substantially more important for households with no diploma, suggesting a crucial role of human capital on wealth formation. Finally, this phenomenon is intensified in areas with high urban concentration; highlighting the potential role of house prices as determinant of wealth social determinism.

Key-words: Intergenerational mobility, homeownership, housing, wealth transmission

JEL classification: D31, J62, R21

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The rise in income and wealth inequalities in developed countries (Alvaredo et al, 2017a; Piketty, 2014), and particularly in France (Garbinti et al., 2017a and Garbinti et al., 2017b), is now well-documented in the literature. Such a pattern raises several concerns regarding the way resources and opportunities are distributed across individuals and how they are transferred from one generation to the next. There is evidence that countries with more inequality also experience less earnings mobility across generations[1]. This relationship has been called "the great Gatsby curve" (Corak, 2013). Due to increasing inequality during recent decades, there is a strong concern that next generation's prospects may be more and more strongly determined by parental economic resources. Unfortunately, there is little evidence on social mobility dynamics over long periods within recent literature. As a response, this paper studies the evolution of the intergenerational persistence of wealth in France since 1960.

This paper builds on the growing literature on social mobility. An important strand of the literature is focused on income mobility (Chetty et al, 2017b; Olivetti and Paserman, 2015; Chetty et al, 2014; Corak et al, 2014; Lee and Solon, 2009; Lefranc and Trannoy, 2005); or occupation and education intergenerational links when there exists restrictions to access adequate earnings data[2] (Arenas and Malgouyres, 2018; Chetty et al, 2017b; Ferrie et al, 2016; Hertz et al, 2007). Nevertheless, recent literature starts growing interest in wealth mobility since it may be considered a better proxy for lifetime economic status[3] (see Charles and Hurst, 2003; Boserup et al, 2014; Hansen, 2014; Black et al, 2015; Pfeffer and Killewad, 2015; Blanden and Machin, 2017; Adermon et al, 2018). Wealth reflects economic resources, ability to cumulate savings, as well as all means received or inherited from previous generation. However, serious hassles come into place when assessing intergenerational wealth links due to the scarcity of wealth data for two generations. Papers that overcame this difficulty find significant correlations between parents' wealth and children wealth[4]. This result may be explained by bequests and inter-vivo transfers, investment in children' human capital or the transmission of preferences across generations.

[1] Jerrim and Macmillan, 2015; Corak, 2013; Krueger, 2012.

[2] Ideally, permanent income measures are pursued, but full life cycle information on earnings is out of scope on most of current available data sources. Methodological papers show important evidence on life cycle bias concerns (Solon, 1992, Mazumder, 2005; Haider and Solon, 2006; Nybom and Stuhler, 2016). Education and occupation outcomes are generally accepted as accurate substitutes of permanent income (Feigenbaum, 2018).

[3] This literature underlies on the classical theoretical model of Becker and Tomes (1979).

[4] Charles and Hurst (2003) and Pfeffer and Killewad (2015) use data from the PSID to study intergenerational wealth mobility in the U.S. Both papers estimate intergenerational wealth elasticity around 0.4. Boserup et al. (2014), Black et al (2015) and Adermon et al. (2018) are based on Danish wealth records and on several Swedish sources. These papers estimate intergenerational wealth elasticity and rank-rank correlations.

After the proliferation of methodological studies[5], the bulk of the literature on intergenerational mobility has developed international comparisons[6] (Corak et al, 2014; Long and Ferrie, 2013; Bourdieu et al, 2014; Hertz et al, 2007; Lefranc and Trannoy, 2005). Other part of the literature studies multigenerational effects[7]. Grandparents seem to have a direct influence on grandchildren outcomes beyond their indirect effect through parents[8]. Finally, some studies have concentrated to track social mobility evolution in an attempt to provide evidence about the worsening or improving of equality of opportunities in developed economies[9]. Regarding wealth mobility, studies point out an important rise of wealth persistence in UK and Norway during last decades (Blanden and Machin, 2017; Hansen, 2014). Unfortunately, this part of the literature is highly limited by the lack of proper historical data sources allowing going far back in time. Thus, evidence about the evolution of intergenerational mobility for European countries in recent periods is quite scarce or inexistent, particularly for wealth mobility. The two latter cited papers are, to our knowledge, the unique works studying wealth persistence changes in recent periods in developed countries.

In their working paper, Blanden and Machin (2017) study intergenerational housing correlations in Britain among households aged 42 as indicator of wealth persistence and how they have changed across different recent cohorts. They use data from the National Child Development Study (NCDS) and British Cohort Study (BCS) to compare two different cohorts at the same age. The age restriction at 42 years old is required since it is the most recent available information of the NCDS cohort, and a questionnaire at this age is available in both studies. They evidence a fall in homeownership rates over time, particularly among younger people. They find a strong persistence in homeownership across generations which as strengthened significantly between 2000 and 2012. They interpret this result as new evidence of a decline in social mobility during the period of study. They discuss the role of this finding in explaining the inability of more recent cohorts to get on the housing ladder.

Hansen (2014) studies the importance of family wealth background in being at the top of the wealth distribution between 1993 and 2010. The aim of this study is to provide evidence about the relative importance of self-made wealth versus inherited wealth. He uses several Norwegian population registers

[5] Solon, 1992, Mazumder, 2005; Haider and Solon, 2006; Nybom and Stuhler, 2016, among others.

[6] Scandinavian countries are widely accepted as the most mobile countries, while UK and US exhibit the worst performance on income mobility. France and Germany seem to occupy a position in between (Solon, 2002; Hertz et al, 2007; Corak et al, 2014).

[7] Ferrie et al, 2016; Barone and Mocetti, 2016; Adermon et al, 2015 and Chan and Boliver, 2013 on earnings, education and occupation. Adermon et al, 2018; Pfeffer and Killewald, 2015 and Boserup et al, 2014 on wealth.

[8] with the exception of Adermon et al (2018) who find no wealth intergenerational persistence in Sweden.

[9] Evidence points out no broad or increasing trends in earnings persistence during last decades in the US[9] and UK[9] (Aaronson and Mazumder, 2008; Lee and Solon, 2009; Chetty et al, 2014; Chetty et al, 2017a; Blanden et al, 2004; Long and Ferrie, 2013). Available studies of earlier periods find a substantial fall on earnings mobility between the late 19th and middle 20th century in the US, which was mostly accounted for by the vast regional disparities in economic development (Olivetti and Paserman, 2015; Long and Ferrie, 2013; Ferrie, 2005). On the other hand, countries as France seem to keep similar income mobility rates during the XX century (Lefranc and Trannoy, 2005); contrarily to the increase in Nordic countries concurring with the creation of welfare states (Bratberg et al, 2005; Pekkala and Lucas, 2007).

along with taxable wealth records to follow total wealth between 37 and 40 years old. He links the total net wealth at each year between children and parents before both parents die. He shows that the presence of wealthy origins has substantially increased during the period, especially at the top 0.1% to the wealth distribution. He finds a strong effect of coming from the wealthiest backgrounds on the probability of being in the top of the distribution, which is only slightly explained by education or professional success. He also concludes that this effect has substantially increased during last years.

For France, to our knowledge, only two papers study intergenerational wealth transmission (Arrondel and Grange, 2006; and Bourdieu et al, 2014). Both of them focus over the 19th century and the mid-20th century. Furthermore, Arrondel and Grange (2006) use a very particular data base from a unique region in the country *(Loire-Atlantique)*. Consequently, there exists no analysis on wealth mobility in France after the 60's, nor on the evolution of intergenerational mobility of wealth.

This paper addresses the following questions: How likely are the children of wealthy parents to be wealthy as well? Has the intergenerational association of wealth evolved over time? Which are the main channels beyond the intergenerational relationship? Are there disparities across age groups? We use all available French wealth surveys since 1986. We use retrospective information of households to construct a synthetic panel. Since the main residence is the most important wealth enhancing asset of the middle class, we focus on homeownership as indicator of total wealth. It is all the more of concern since it plays a crucial role in wealth inequality[10]. Then, we estimate the correlation between the housing statuses of two generations over the period 1960-2015.

Our contribution to the literature is multiple. First, while the post 1960s period is a period of growing importance of intergenerational transmissions (Alvaredo et al., 2017b, Piketty, 2011), it has never been studied in France. We contribute to fill this gap by analysing wealth mobility from the sixties. Second, we adopt a temporal perspective and document the evolution over time of this correlation. This is a major contribution since there exists no evidence on the change of social mobility in France. Third, we provide evidence about disparities on intergenerational persistence over the life cycle. Finally, we exploit all waves of the French wealth survey in an original way which has never been done before for the analysis of wealth mobility. We perform a data panelization using rich retrospective information. The panel data structure and the historical analysis proposed in our paper are considered significant contributions to the literature.

As well as Blanden and Machin (2017) suggest for Britain between 2000 and 2012, we find a sharp increase in the homeownership persistence between parents and children in France over the last 50 years. It was close to zero in 1960 and increases to 0.25 in 2015. This increase in intergenerational correlation is concentrated among people aged between 20 and 39 years old, a life-cycle period where individuals

[10] See Kaas et al. (2015) or Garbinti and Savignac (2018).

are often first-time buyers. This may imply that the economic changes taking place during the period were particularly discriminant for young adults whose parents were not homeowners. Moreover, we find a substantial divergence over time across wealth groups. The intergenerational persistence of wealth increased during recent decades particularly for those from higher wealth origins, such as it has been shown for Norway by Hansen (2014). Our evidence coincide with patterns of wealth mobility found during recent decades in other countries, and suggest a common increasing trend on wealth persistence on European countries.

Furthermore, we give some evidence about the transmission mechanisms. We find a strong significant effect of financial transfers in the year of the transmission over the probability of becoming homeowner. Households who inherited are more than 3 times more likely to purchase their main residence the year of the transfer than those who did not receive anything. Moreover, this strong effect decreases over time and finally gets disappeared after 5 years. Similar results are found for donations. Finally, we provide evidence about the existence of important disparities on parental effects across education levels. Parental support is substantially more important for households with no diploma, suggesting a crucial role of human capital on wealth formation.

The paper is structured as follows. The data and descriptive statistics are presented in Section 1. We estimate the intergenerational correlation in homeownership in Section 2 and analyze the mechanisms of transmission of wealth position in Section 3. Section 4 concludes.

1. Wealth in France: Data and descriptive statistics

Our main data source is the French wealth survey (*Enquête Patrimoine*) conducted by the National Statistical Institute (INSEE) since 1986. We use all available waves of the survey: 1986, 1992, 1998, 2004, 2010 and 2015. This survey collects household level detailed information on wealth composition at the time of the questionnaire, such as assets (financial, housing and professional assets) and liabilities. It also provides very complete information about several explanatory factors of wealth formation: family composition, household socio-economic characteristics and intergenerational transfers. Finally, the survey collects information on the parents of the reference person when she was 14 years old, including wealth situation. This particularity allows us to study the relationship between the wealth of two generations and make intergenerational links.

Panelization

In order to explore a temporal perspective and provide some consistent evidence about wealth mobility dynamics, we aim at working on long series of panel data. There is an absence of a monitoring device

in these surveys which allows for a real follow up of households. Nevertheless, there exists substantial backward-looking information concerning several aspects of households' life. For example, we observe the year of each professional situation change in the household, or the main dates of household formation and evolution[11]. Intergenerational transmissions can be traced quite rigorously during the full life cycle. We know the number of received transfers by the reference person and her partner and the year of the transaction[12]. This information allows a continuous follow-up of all donations and bequests. This interesting feature of the data enabled the construction of a synthetic panel data set[13]. That is what we call "panelization" [14].

Unfortunately, retrospective information about wealth is not available, and we cannot follow precise changes in wealth. For this reason, we aim at providing a consistent indicator of wealth which can be followed in the synthetic panel we constructed. Our main candidate is housing tenure status.

The information about the year of the acquisition of the main residence favors the reproduction of household's housing status dynamics. We define our variable of interest HO_{it} as a dummy variable which takes value 1 when the household i owns his main residence in time t; and 0, if the household rents it. Thus, it takes value 0 before the housing purchase, and 1 from the purchase year until the interviewing date[15]. The panelized variables form the set of time varying indicators in the synthetic panel data. Unfortunately, part of the variables do not allow their panelization because they are simply static during most of the life cycle (cohort, sex, migrant status and education); or we do not have enough information to reproduce their dynamics (occupation, income and financial wealth). Variables referring to the parental situation during childhood are obviously time-invariant because they refer to this particular moment in time (when the reference person was 14 years). We propose two different indicators of parental wealth: PHO_i and PRE_i. PHO_i takes value 1 if the parents of the reference person i owned their main residence during childhood, and 0 otherwise. PRE_i takes value 0 if the parents did not own any housing asset, 1 if they owned their main residence or other housing asset, and 2 if they owned both the main residence and other housing.

[11] We follow the employment status of the reference person and his/her partner from the first entry to the job market. This variable tries to proxy the financial situation at each stage of life. We also reproduce the dynamics of marital status of the reference person, since we observe the year of end and beginning of two last couples. The arrival of new children can be emulated based on children's year of birth. Using the cohort of the reference person we picture the age evolution.

[12] We also observe the received amount on the financial transmission. Unfortunately, this variable is quite bad declared by survey participants.

[13] See the data appendix i for a detailed description of the process.

[14] To our knowledge, this paper is the first one performing the panelization of all waves of the French wealth survey to study intergenerational wealth mobility (See Garbinti and Georges-Kot (2016) for another application).

[15] It is then missing from the interviewing date until the end of sample period.

For the purpose of this paper, we focus on homeownership of individuals aged between 20 and 50 years old.[16] We also exclude migrants who may have leaving expectations that could affect their tenure choice. Our final sample includes 26.500 households and covers the period 1960-2015. [17]

Homeownership as indicator of wealth

According to Garbinti and Savignac (2018), 81% of total net wealth was housing wealth in the Euro Zone on average in 2015. This percentage varies across wealth groups, and becomes more important in the middle of the distribution, for which the majority of the portfolio if formed by housing assets. Additionally, housing is generally considered the most wealth enhancing asset in households' portfolio. Annual down payments of the loan are converted into total wealth of the household at the end of the process, while rents are transferred to landlords' total wealth and they are lost for households. Then, homeowners obviously tend to concentrate higher worth over life. If we look at the mean and median total gross wealth in France by real estate ownership in table 1, we observe important differences across groups. Those households who own their main residence have a mean total gross wealth more than 6 times higher than non-owner-occupiers. This ratio is substantially higher if we compare median wealth (18 instead of 6 times). When disentangling broader categories of real estate ownership, we came up to a more important wealth gap. Households without housing assets have a median total gross wealth of less than 10.000€, compared to almost 400.000€ for families of owner-occupiers with housing assets other than the main residence[18]. A gradient of wealth is then observed across categories of real estate ownership, regardless of the measure we look at (mean or median). If we observe the evolution of this gap (figure 1), the latter is true for all surveys. The wealth gap got substantially increased during last decades, where the mean wealth for the higher category of real estate assets reaches more than 750.000€ of total wealth. This coincides with the period of housing boom in France, where households with housing assets benefited from a substantial growth of their capital value.

[INSERT TABLE 1]

[INSERT FIGURE 1]

[16] We restrict to 50 the age upper bound in order to preserve the longest (as possible) historical perspective. 1960 is the first year containing individuals from all ages between 20 and 50 years old. 1980 is the first year containing individuals from all ages between 20 and 70 years old. If we focus on the latter group, the analysis would be reduced to 1980-2015. As a consequence, priority is given to the length of the period, and we will present robustness tests using 20-70 years old.

[17] Our panelised dataset covers individuals from cohort 1911 on, aged 20 years or more between years 1931-2015. However, first years contain only very young individuals so that we need to reduce the time dimension of the panel to deal with a representative sample. We then start our analysis in 1960 which is the first year containing individuals from all ages between 20 and 50 years old.

[18] All figures are expressed in 2015 currency.

In France, the homeownership rate has slightly increased during last decades, from 52% in 1986 to 58% in 2015. It amounts to 46% for households aged between 20 and 50 years old in 2015, which has maintained a similar rate since 1986. There is however a huge difference across age groups: only about 36% of people aged between 20 and 39 years old are homeowners, while it is the case for 58% of households in the 40-50 age group (see figure 2). Furthermore, we observe that homeownership rates have smoothly decreased for the latter group during the period, while young adults present a 5pp rise during recent decades[19].

There are substantial differences in wealth depending on whether the parents where homeowners or not. Children of owner-occupier families have on average 1.4 times higher wealth than those of renters. The ratio reaches 2 if we compare children of families with no housing assets and families with both the main residence and other housing (table 2). This pattern is observed in all surveys regardless of the housing ownership indicator (figure 3). A divergence of wealth takes place over time across parental housing status. We now compute the intergenerational association of homeownership to illustrate the disparities in homeownership rates by parental housing status (figure 4). As it turns out, children of homeowners between 20 and 50 years old are more likely to own their main residence when adults, compared to children of non-homeowners, and we observe an important divergence over time. Interestingly, Blanden and Machin (2017) obtain similar conclusions for the U.K, where cohort members who grew up in owner occupancy are more likely to be owner occupiers themselves. As in France, they find an important rise on the gap between groups over time, and a substantial fall in ownership rates among households whose parents did not own their own residence when they were children.

[INSERT FIGURE 2]

[INSERT TABLE 2]

[INSERT FIGURE 3]

[INSERT FIGURE 4]

From this evidence, housing tenure status seems to be a quite representative indicator of total wealth and remains our best option. Disaggregating the sample into homeowners and non-homeowners allows us to separate the population into those with almost no wealth (non-homeowners), from those with substantial wealth (homeowners), in an opposition of the so-called "poor" and "wealthy". The objective of this exercise is to get a representative simple indicator of wealth which properly identifies

[19] This outlook is significantly different for Britain, where there is a substantial fall of homeownership rates on the population, particularly for households under 50 years old. The most severe decline is observed in households aged 20-39 (Blanden and Machin, 2017).

differentiated levels of wealth, which can be followed over time in our synthetic panel setting. Unfortunately, the real estate indicator ("none", "main residence or other housing assets" and "main residence and other housing assets") does not allow a panelization for children, since we do not observe the year of purchase of secondary residences or other housing assets. However, it will be useful for parents' wealth representation[20].

2. Evolution of the intergenerational persistence of homeownership status over 1960-2015

In order to analyse the evolution over time of the gross intergenerational correlation of homeownership, we estimate the following regression:

$$HO_{it} = \alpha_0 + \beta_{1960} PHO_i + \sum_{year=1961}^{2015} \beta_{year} PHO_i * \ year_t + \gamma age_{it} + \alpha_t + \epsilon_{it} \qquad (1)$$

HO_{it} is a dummy variable which takes value 1 when the household i owns its main residence in time t; and 0, if the household rents it[21]. PHO_i refers to the main residence status of the parents of the reference person of the household i when she was 14 years old. It takes value 1 if they were homeowners during the childhood. This variable is interacted with year dummies ($year_t$). It allows us to estimate time-varying intergenerational correlations of homeownership status. Hence, β is an indicator of the gross intergenerational correlation of homeownership, and more generally, wealth. The regression includes age dummies (age_{it}) to control for life cycle effects and time fixed effects (α_t) to account for time-variation in the aggregate homeownership rate[22]. We estimate the model using a standard panel linear estimator[23]. As in general literature of intergenerational mobility, we are only interested in "gross" intergenerational correlation and its evolution over time. Hence, we do not want to get rid of any particular driver of homeownership (such as education, the receipt of a gift or an inheritance before the purchase, etc), but we want the parental indicator to capture all the channels beyond. This can be interpreted as a classic elasticity measure. For this purpose, we do not include any additional explanatory variable nor individuals fixed effects which would capture some of these time-invariant factors driving intergenerational wealth associations.

[20] In this case we disentangle the group of "wealthy" households into two further groups: "some wealth" and "rich".

[21] Thus, it takes value 0 before the housing purchase, and 1 from the purchase year on. We chose this structure in an attempt to represent the fact that individuals have low wealth before the housing purchase (so they belong to the "poor" category), and they start accumulating substantial capital compared to their peers from the year of the transaction on (so they enter into the "wealthy" category).

[22] In France, the overall homeownership rate increases from 35% in 1955, 51.2% in 1984 to 57.8% in 2015 according to the Insee. See the data appendix ii for an illustration of homeownership rates in our synthetic panel.

[23] We use random effect linear models instead of logit for simplicity on calculations. The predicted values of the dependent variable lie between 0 and 1 for 95% of the distribution. See Pohlmann et al (2003) for a detailed discussion on the validity of these models with binary outcomes.

The particular structure of our data results in an unbalanced panel where missing observations are not at random. Alternatively, estimations with individual fixed effects (α_i) are proposed throughout this exercise to prove the robustness of the estimates to the selection problem. See the data appendix iii for further explanation.

Disparities in homeownership by parental housing status are confirmed when computing the average intergenerational association in homeownership for the full 20-50 years old population (purged from age and time effects) [24]. The gross intergenerational correlation in homeownership status is significant and amounts to 0.077 in average over our sample period. It means that children of homeowners are in average around 7.7 percentage points more likely to own their main residence than children of non-homeowners in France. This figure represents an advantage of 29% more probabilities of reaching homeownership, given the mean homeownership rate of the reference group. For households aged 20-39, having wealthy parents increases their probabilities of being homeowners themselves on 38% on average for the period 1960-2015 (which is equivalent to 6.6 percentage points). The impact of parental wealth after 40 is higher than for younger households on percentage points, but lower in relative terms. Nevertheless, the intergenerational persistence of wealth is still very significant and substantially important (24% or 11 percentage points). This result is not surprising. Households under 39 years old are often first buyers and they have lower capital accumulation. This makes them substantially dependent of factors such as house prices levels, financial conditions and parental support. On the other hand, older households had more time to build up their wealth and they are often second time buyers such that they count on their previous wealth to start the new project. This makes them less reliant on other factors.

Our estimates of the intergenerational correlation in homeownership (β) from equation (1) are displayed in figure 5a for the full population (reference person aged between 20 and 50 years old). We also provide estimates for the subsample of younger individuals (aged between 20 and 39) and for the older ones (between 40 and 50) in figure 5b[25]. The grey area represents confidence intervals at 95%. The blue line refers to the same estimation results, transformed into percentage instead of percentage points. It is computed over the mean homeownership rate of the reference group (children of non-owner-occupiers) at each year for each age group. It gives us an idea of the relative advantage given the proportion of main residence owners and the changes in homeownership rates.

[INSERT FIGURE 5a]

[INSERT FIGURE 5b]

[24] See table 1 in appendix B.

[25] Respective models in fixed effects are represented in figures 1a and 1b of the appendix B.

We find a sharp increase in the correlation between parents and children homeownership in France over the period 1960-2015. The intergenerational correlation was closed to zero in 1960 and increases to 0.25 in 2015. First, there is a smooth increasing trend between 1960 and 1992, leading to an association in the early 90s around 0.08. Then, it is followed by a substantial and marked rise starting at the beginning of the 90's. It results in around three times the intergenerational homeownership relationship in 2015, compared to 1992. As it turns out, while having homeowner parents increased the probability of purchasing one's main residence by 8 percentage points (or 22%) in the 1992, it increases it by 25 percentage points (or 50%) in 2015. Results found at the beginning of the period may be partially biased[26], but the evidence of a low intergenerational link is expected and not surprising. During the 60s, inheritance flows were the lowest in French history (see Piketty, 2011). The destruction of capital due to the war has not yet been restored at this time, which justifies the near-zero intergenerational correlation coefficient we observe. The substantial rise on homeownership persistence is consistent with the rise of wealth inequality in France. We expect that the more the concentration of wealth on the top of the distribution, the higher the transmission to next generation.

This increase in intergenerational correlation is concentrated among people aged between 20 and 39 years old, a life-cycle period where individuals are often first-time buyers. In 1960, the intergenerational correlation in homeownership status for the 20-39 age group was not significantly different from zero and it reaches 0.33 (or 100%) in 2015. For older people, the intergenerational correlation was higher in 1960 (0.10), but it has moderately increased over time (0.15 in 2015). In terms of relative advantage (percentage), we observe a decrease for the older group between 1960 and 1975. This is due to the particularly low rate of homeowners at the beginning of the period in our sample, explained by the structure of our panelized data[27]. Nevertheless this fall is not significant. The intergenerational correlation seems to converge for the two age groups during the 90s around 0.11. The sharpest increase in the intergenerational correlation for the young age group started in 2000. This whole evidence may suggest that the economic changes taking place during the period were particularly discriminant for young adults whose parents were not homeowners[28].Young households faced important economic changes in terms of working conditions during last decades. They are more and more exposed to the precarisation of the job market; youth unemployment in France is one of the highest in the OECD; and temporary contracts went from 13% of total young adults contracts in 1983 to 60% in 2015 in France[29]. The growing instability of labor conditions make young adults particularly vulnerable in times of housing booms. In periods in which house prices growth is substantially higher than earnings evolution, wealth formation through housing access may be compromised, particularly for those stuck in the housing ladder.

[26] See further evidence with a correction of the bias in the robustness section: 1986-2015.
[27] See more explanation in the robustness section: 1986-2015.
[28] This findings are robust if we use fixed effect estimates instead of random effects (see Graphs 1a and 1b of appendix B)
[29] According to the OECD.

In order to explore disparities across wealth groups, we propose to substitute the parental indicator PHO_i by PRE_i in equation (1) as follows:

$$HO_{it} = \alpha_0 + \beta_{1960} PRE_i + \sum_{year=1961}^{2015} \beta_{year} PRE_i * year_t + \gamma\, age_{it} + \alpha_t + \varepsilon_{it} \quad (2)$$

The same intuition as previously lies behind this model. In addition, PRE_i allows the comparison of intergenerational persistence for different levels of parental wealth: families "with some wealth" (main residence or other housing ownership), vs "rich" families (who own both their main residence and other housing assets). Results for the full sample are presented in figure 6[30]. As well as from (1), we observe a general increasing trend, regardless of the group of wealth background. No disparities are observed at the beginning of the period, where having more advantageous wealth origins has no significant further positive influence on children homeownership relative to families with "some wealth". However, an important divergence starts taking place in the mid 80's, which gets accentuated during the period of study. In 2015, having parents in the higher level of real estate ownership ("own both their main residence and other housing assets") gives you almost 70% higher chances of being homeowner; while children of parents in the middle real estate ownership category ("main residence or other housing ownership") have 45% more. Both wealth groups present a significant and substantial advantage compared to children of families with no housing wealth, which confirms the role of family background as crucial marker of wealth position. Moreover, we observe a divergence across wealth groups. The intergenerational persistence of wealth increased during recent decades, particularly for the group of higher wealth. This evidence stands out notable levels of wealth position immobilism at the top across generations in France. This is in line with the findings of Hansen (2014), who showed that the presence of wealthy origins among the wealthy individuals has substantially increased during the period in Norway, especially at the top 0.1% to the wealth distribution.

[INSERT FIGURE 6]

Robustness test: False negatives

An important issue of our data is the impossibility to observe housing status previous to the main residence at survey. In other words, it may be that a household already owned their main residence before moving to the current one, such that they are second time homeowners. This limit of the data may be problematic as we move far from the last survey (1986) because all the information relies on households surveyed at older ages, which are more prone to be second owner-occupiers. As a result, we are missing an important part of homeowners at the beginning of the period and the overall homeownership rates from our data are potentially underestimated, particularly before 1986. Due to the

[30] Estimations from fixed effects model are presented in figure 2 of appendix B. Results for the group 20-39 and 40-50 are presented in the same appendix (figure 3a and 3b)

existence of false negatives (households considered non-homeowners which actually were), we may expect our results to be biased, particularly between 1960-1986.

In order to identify the direction of the bias in our results, we proceed to estimate our model using the most robust sample period we have in our data. We concentrate on the period of time 1986-2015 for households between 20 and 50 years old. During this period of time, the panel data relies on ancient and recent retrospective information since it overlaps older and new entries at each survey. Thus, we expect the bias of false negatives to be attenuated by new entries, compared to the period before 1986 (which fully relies on ancient retrospective information). Moreover, we use a set of own constructed households' weights, which aim at being first and foremost representative of age, homeownership rate and parental homeownership during the period. This will allow us to correct the population representativeness at each year under the presence of false negatives[31].

Consistent results for equation (1) are presented in figure 7. As in figure 5a, we find a substantial increasing trend on homeownership persistence across generations. Having homeowner origins is related with a 16% higher probability of being homeowner in 1986, compared to 60% in 2015[32]. As expected, results suggest that the benchmark model of the previous section overestimates the intergenerational correlation for most of the period. This is explained by two factors. First, there is a general underestimation of homeownership rates during most of the period due to the existence of false negatives. The opposite case comes into place after 2005, where the last surveys overestimate homeownership rates in the benchmark setting due to the oversampling of rich households in last years. Second, the upward bias of the results is also explained by the higher presence of false negatives among children of non-homeowners, which accentuates the parental role in the benchmark setting, increasing the intergenerational correlation of homeownership[33]. This means that children of homeowners stay longer in their first purchased main residence than children of non-owner-occupiers. Factors explaining this evidence may be the capability of richer households to acquire a more appropriate dwelling for the long term (bigger surface, location, etc) in their first purchase. While poorer families may buy less appropriate housing and need to change later on according to the family financial means and needs. The analysis of these factors is not under the scope of this paper.

[INSERT FIGURE 7]

Robustness test: 20-70 years old households

The aim of studying a long period of time requires the restriction of the sample into 20-50 years old households. However, there are important demographic changes taking place during the period around

[31] See data appendix iv, for a detailed explanation of the construction of weights.
[32] In the benchmark model, we find 25% and 50% more probabilities of owner-occupation in 1986 and 2015, respectively.
[33] See appendix v for a developed analysis of the source of bias between the benchmark and the robust estimation.

the age of 50, which may be taken into account. In 1960, the mean age at inheritance in France was 40 years old, while in 2015 it reached 50 years old on average (Piketty, 2011). Unsurprisingly, it is mainly explained by the delay on life expectancy during last decades. One of the main mechanisms claimed by the literature of intergenerational transmission is the bequest at death. Thus, restricting the sample to younger or equal to 50 years old individuals may have important consequences in our results. Excluding families around 50 means losing part of the persistence channel of the older group in recent decades. For this reason, we propose the following robustness test: we keep the consistent framework of previous section, and we enlarge the age restriction into 20-70 years old households.

The results from equation (1) by age group are presented in figure 8. As previously, we observe a rising intergenerational persistence of homeownership over the period concentrated among young households. Including individuals between 50 and 70 years old does not change the results concerning the group of older households. Households between 40 and 70 years old present an equivalent significant parental role with no significant change over the period. This is consistent with the evidence found previously.

[INSERT FIGURE 8]

Wealth persistence and house prices

As it has been documented previously, housing assets represent most of the total wealth of households. Since housing assets are obviously exposed to changes on asset prices, we expect capital accumulation to be particularly dependent on house prices evolution. This is what we observe in figure 1. The mean total wealth of housing assets holders has substantially increased during last decades, particularly during the housing boom. This led to an important divergence on total wealth between those holding housing assets and their peers. Under this evidence, one may draw attention to geographical disparities in terms of house prices which may drive our results of intergenerational association.

Unfortunately, we do not have sufficiently disaggregated information on households' location to proceed. In contrast, we propose a simple comparison of intergenerational wealth persistence trends between Paris area (so called "Agglomeration Parisienne") and different urban size groups, to bring light to this question. Hence, we estimate equation (1) for Paris and different definitions of urban area (rural areas, areas between 5.000 and 100.000 inhabitants and areas with a population of more than 100.000)[34]. Results are presented in figure 9.

[INSERT FIGURE 9]

[34] We keep the robust setting: individuals between 20 and 50 years old, period between 1986 and 2015, random effects model with weights.

From figure 9, we highlight that homeownership persistence was not significantly different across groups at the beginning of the period. Children from the wealthiest origins had around 20% higher probabilities (around 5pp) of homeownership in 1986. This situation persists until the end of the 90's with very little changes on intergenerational correlation. Then, we observe an important divergence, which becomes significant from the beginning of the 2000's. From this point onwards, we notice that the larger the urban area, the higher the intergenerational association of homeownership. This pattern coincides with the housing boom period which took place in France between 2000 and 2007, as we can see in figure 10. It suggests that the rise of house prices may be a major factor explaining the general increase of wealth persistence during the period. In periods and areas of housing access hardening (lower affordability), parental support may be a more important determinant to get into the housing ladder. Moreover, we can expect parental wealth to grow and concentrate among the wealthiest. This would explain a positive relationship between intergenerational wealth association and house prices and the rise of social determinism in last decades.

[INSERT FIGURE 10]

This evidence is also in line with house prices dynamics disparities between geographic areas. We expect house prices to be higher in larger urban areas on average (as we can see in figure 10). To the contrary, rural areas, with expected lower house prices and lower growth, require lower parental dependency to access housing, and then, present lower intergenerational links. Moreover, rural areas present a constant evolution on wealth persistence with no significant change during the period, which may relates to the higher concentration of house prices rise in larger cities. Corroborating previous intuition, we clearly observe an important drop on intergenerational wealth persistence during the financial crisis, with a subsequent recovering after 2011. This particularly reminds the trend of house prices, which suffered a substantial drop in France during the crisis, before getting back to a growing path.

Cohort analysis

In order to provide further evidence comparable to existent literature, we proceed to assess cohort differences in a cross section setting[35]. For this purpose, we pool all surveys and we restrict our sample following the same criteria as in the panel setting[36]. First, we estimate the following model for households where the reference person is 42 years old:

$$HO_i = \alpha_0 + \beta_1 PHO_i + \beta_c PHO_i * cohort_i + \alpha_c + u_i \quad (3)$$

[35] In other words, we assess original cross section sources from each survey. We append them together, and we proceed to a classical cross section analysis.
[36] That is to say, 20-50 years old households, non-immigrant.

Where HO_i is a dummy variable which takes value 1 if the household i owns its main residence at the time of the survey. As previously, PHO_i refers to the main residence status of the parents of the reference person of the household i when she was 14 years old. It takes value 1 if they were homeowners during the childhood. This variable is interacted with the cohort of birth of the child ($cohort_i$). It allows us to estimate differences in intergenerational correlations of homeownership status across cohorts. As in the panel setting, β represents the gross intergenerational correlation of homeownership. The regression includes cohort fixed effects (α_c) to account for disparities across cohorts in the aggregate homeownership rate. Since we restrict the sample to 42 years old households, cohort effects collapse to survey effects. We estimate the model using a logit estimator.

In table 3, we present the output for equation (3). Column 1 presents the estimation for children homeownership[37], while column 2 studies children position on the gross wealth distribution at survey. Wealth deciles are computed within survey. As in previous literature, we find a significant correlation of homeownership between generations whether we look at homeownership or children wealth position on the distribution. The magnitude of the relationship is similar to the one found by Blanden and Machin (2017). This corroborates the general evidence on the role of parental background in explaining children outcomes. The intergenerational association is stronger explaining wealth distribution rather than homeownership. Contrarily to Blanden and Machin (2017) for similar cohorts in the UK, we find no significant change on intergenerational persistence, regardless of the outcome of study. This may be explained by the limited size of our sample at 42 years old by survey. While they have enough observations to estimate different models for each cohort, we merely have 200 observations by group. This could affect our capability to identify differences across cohorts.

[INSERT TABLE 3]

In order to provide more consistent evidence, we secondly estimate an extended model on the relationship between parental housing wealth and children wealth decile in the distribution.

$$Wealth_i = \alpha_0 + \beta_1 PHO_i + \beta_s PHO_i * survey_i + \gamma\, sage_i + \alpha_s + v_i \quad (4)$$

This model can also be considered as a robustness test to the structure of the data in the benchmark model. Some may argue that keeping the same individual in our sample after the homeownership purchase may lead to any sort of cumulative effect on the data, which may explain the increasing trend found in our results. Here, we only observe individuals once, at the year of the survey. We keep households between 20 and 50 years old, and we add age dummies ($sage_i$) to control for age differences on wealth position. In this case, the interaction term refers specifically to the year at which households

[37] This model is equivalent to unconditional specification (4) of table 2 in Blanden and Machin (2017).

were interviewed ($survey_i$). Results using parental housing status are presented in table 4, and those using parental real estate ownership are presented in table 5.

[INSERT TABLE 4]

[INSERT TABLE 5]

Results confirm that children from wealthier origins have higher probabilities of being at the top of the wealth distribution than children from the most modest families regardless of the parental indicator of wealth we use. As in the panel specifications, the intergenerational persistence has significantly increased till 2010 compared to 1986 for the benchmark population. In 2015, there is still a higher intergenerational link compared to the reference year, but lower than in 2010. The fall after 2010 is also in line with the pattern we find in the panel setting. Moreover, we observe a substantial divergence on the gap between groups across surveys. This means that the advantage of having wealthy parents is the more and more concentrated among the richest origins. Finally, like in the panel section, we observe that this pattern is driven by young adults' households, where the rise of intergenerational relationship is concentrated.

This finding coincides with the conclusion of Hansen (2014) for Norway in an equivalent analysis[38]. Similarly to us, he finds a strong effect of having parents among the 10% wealthiest origins on the probability of children to reach the top of the wealth distribution. Moreover, he also concludes that this effect has substantially increased during last years, particularly for parents in the wealthiest categories.

3. **Channels of intergenerational transmission**

The association of wealth between generations may happen through several channels. The most accepted and explored in the literature are direct bequest and inter-vivo transfers, and investment in children' human capital (Guiso and Jappelli. 2002; Helderman and Mulder, 2007; Spilerman and Wolff, 2012; Angelini et al, 2013, Arrondel et al, 2014). Other mechanisms have been also explored, such as the transmission of preferences and propensity to save across generations (Boehm and Schlottmann, 2001; Charles and Hurst, 2003; Lersch and Luijkx, 2015). These paths are often much harder to be tested.

Wealthier families may invest more on their children education because they directly have the means to afford it or they have lower borrowing constraints to invest on children human capital. As a result, children of wealthier families are more likely to achieve higher education. We observe that probabilities of being high educated increase in parental wealth category, while "no diploma" and "low educated"

[38] Results from table 5 can be similarly interpreted than in model 3 of table 3 in Hansen (2014).

families are more often issue of households with no housing wealth (figure B.5). The educational attainment has important consequences on subsequent wealth outcomes since education is a major determinant of income, and higher earnings over the life cycle allow easier capital accumulation. Moreover, education is a major determinant of employment stability or type of contract, both extremely important to access credit. High educated households are more often in the top 10 income decile, and families with no diploma are highly represented in the bottom of the income distribution (see figure B.6). More than 50% of households in the highest income decile are high educated. Unsurprisingly, there are important disparities across education levels when we look at real estate ownership distribution (figure B.7). More than 20% of high educated households own both their main residence and other housing assets, compared to only 9% of households with no diploma. 46% of the latter group present no housing wealth, while only 32% of high educated does. As a result, this mechanism may create a positive strong correlation between the wealth of the two generations through education and subsequent earnings.

Furthermore, parental educational attainment may also reinforce the intergenerational association of wealth through other paths. Parents own educational choices may influence children educational decisions. Parents with higher education may understand better the education returns and may put more pressure on their children to reach a certain level of human capital, or they simply provide them with this information. More educated parents are more aware of quality differences in primary and secondary schools and may take it into account to choose schools, or even in order to choose the area to live in.

On the other hand, wealth can be easily transfer from one generation to the next. At death, parents leave their wealth in form of bequest to their heirs. Also, wealthy families may give to their children more frequent and higher financial gifts and financial support during their life. More than 30% of households from wealthiest origins have received a financial gift before the time of the survey (regardless on the age), while only 8.5% of households with the poorest origins did (see table 6). Inheritance seems to be a more common form of financial transmission within groups, but still, 50% times more frequent for those with high wealth background compared to those from families with no housing wealth.

[INSERT TABLE 6]

Direct transfers raise immediate wealth and provide children with lower credit constraints and higher insurance, an advantageous position in the short run. Almost 50% of households in the top 10% of the wealth distribution received an inheritance in the past, compared to only 10% of families in the lowest decile of the distribution (figure 8 in appendix B). As you observed, the probabilities of having received a financial transfer increases in wealth, both for inheritance and donations. In countries as Sweden or the US, intergenerational transfers account for at least 50-60% of household wealth (de Nardi, 2004). Receiving an important amount of wealth can make an important difference in entering the housing market. Households may be more likely to undertake long term credit engagements and shorten the

timing to homeownership. Financial transfers may enable a larger down payment, or allow households to access to a residence of greater value (Guiso and Jappelli. 2002; Spilerman and Wolff, 2012; Angelini et al, 2013). This has obvious positive consequences on tenure choice. As it is noted in table 6, 32% of households that own both their main residence and other housing assets have received a donation at some point in time. The same is true for only 6% of those with no housing wealth. 40% of donations took place at the year of the main residence purchase or in the immediate previous years (figures B.9a and B.9b). A similar statement can be done for inheritance. It is not surprising to find a less immediate relationship on the timing between inheritance and housing purchase due to the exogenous character of bequests. The relationship between tenure choice and donations may work in two directions. Receiving financial help may trigger the main residence purchase, or the other way around, once the decision is made, parents decide to provide financial support to children. In any case, it creates an important association between the wealth of both generations.

Wealthy families, being more often owner occupiers, are considered as less residentially mobile. This is related with social capital formation through the involvement of homeowners in local government (Glaeser and Sacerdote, 2000). Moreover, wealth is a natural insurance against exogenous shocks as unemployment risk. These factors may help for the creation of a more stable development environment for children. Existing research evidences that children of homeowners present better cognitive abilities, lower probabilities of school failure and fewer behavioral problems at young ages (Hauri et al, 2000; Green and White, 1997). Besides that wealthy families have better connections and use them to get better job perspectives to their children. As a result, children of homeowners are expected to present higher educational achievements, higher employment rates and greater future earnings in adulthood (Boehm and Schlottmann, 2001; Kulkarni and Malmendier, 2015).

Finally, some authors support the existence of an additional important channel: parents may pass on similar savings propensities, preferences and other non-genetic skills to their children (Boehm and Schlottmann, 2001; Charles and Hurst, 2003). Lersch and Luijkx (2015) tested this hypothesis and found that homeownership substantially increases by each additional year spent living in an owner-occupied house during childhood. One of the arguments in this regard is the role of homeownership as indicator of social status (Dietz and Haurin, 2003). Hence, intergenerational correlations of homeownership make part of a complex system of advantage and wealth transmission which may be crucial in explaining social mobility and social determinism.

Human capital and wealth direct transmission

Assessing the impact of several factors on the probability of becoming homeowner is an exercise that assumes a short term relationship between elements. Thus, previous empirical strategies are no longer valid in this context due to its lasting character. In order to assess the underlying mechanisms and the

effect of the main factors on tenure choice, a discrete time proportional hazard model is proposed. This model is conceived to explain transitions from one state to another (non-homeowner to owner-occupier), allowing to estimate the coefficient of time-invariant variables, such as human capital. Fixed effects models would not allow either of the latter features. Hazard models are also interesting because they deal with right censoring due to attrition or other reasons. Hence, we consider hazard model the most convenient one to answer the question of interest accounting for data structure specificities. We estimate the following equation:

$$HO_{it} = \alpha_0 + \beta_1 PHO_i + \delta_1 HC_i + \delta_2 Trans_{it} + \gamma Controls_{it} + \alpha_t + \epsilon_{it} \quad (4)$$

HO is a dummy variable which takes value 0 before the housing purchase, and 1 at the moment of the event takes place (the year of the acquisition). Once the transition into homeownership occurs, we no longer consider individual posterior states[39]. PHO refers to the parental housing status as in previous equations[40]. The main variables of interest are human capital[41] (HC) and a set of explanatory variables representing wealth transfers ($Trans$): inheritance and donations. A set of parental and children control variables is also incorporated. The latter includes: father occupation during childhood, children occupation at survey, number of siblings, household income decile at survey, employment situation, family structure, number of children, age and time fixed effects. Coefficients are interpreted as odd ratios.

In table 7, we explore the effect of financial transmissions across generations on the odds of becoming homeowner. We propose different definitions of financial transfers to explore their impact. Each column refers to one definition. First, a 1 year temporal shock in which the inheritance/donation variable takes value 1 at the year of the transmission, and 0 otherwise. Here, we assume that the wealth shock is absorbed right after. For example, households spend it immediately during the year. Then, we propose more enduring shocks which allow for a longer transition back to the initial wealth state, such as 3, 5 and 7 years. In these cases, we assume that the received wealth lasts for a greater period on households' total wealth, and the spending is slower. Finally, we test the effect of wealth transfers as a permanent shock on households' total wealth. We consider a wealth entry that remains as part of total resources during the entire life, or it is transformed into other kind of asset which provides households with additional revenues (for instance, professional assets).

[INSERT TABLE 7]

We find that the longer the assumption of length of the positive wealth shock, the lower the mean effect of financial transfers. This suggests that there exists a primary immediate wealth effect of

[39] In practice, it means values are treated as missing after the year of acquisition.
[40] It takes value 1 if they were homeowners during the childhood.
[41] Highest level of human capital in the household.

intergenerational transmission on households' tenure choice and this effect diminishes as time pass by. A consistent finding, regardless of the definition we use, is the predominant effect of donations over inheritance. This may be explained by the different characteristics between inheritance and donations. The latter is often transferred in form of liquid wealth, while inheritance is more heterogeneous and can contained illiquid assets such as housing. Illiquid assets may take some time to be sold and make agreements with the rest of heirs until being available. This would explain the higher impact of donations on tenure choice. Additionally, we know there is a reverse causality relationship between donations and homeownership decision, which may overstates the effect.

In order to provide further evidence about the length of financial transmission effects, we use a variable which takes value 1 at the year of the transmission, and adds 1 at each additional year. It starts over 1 at each new wealth transfer, and repeats the pattern. This setting allows us to identify the effect of wealth transfers at each year after transmission; such that $Inheritance_t$ is inheritance at the year of the transmission, and $Inheritance_{t+2}$ represents inheritance 2 years after. Results are presented in figure 11. As we expected, we find a strong significant effect of donations and inheritance in the year of the transmission over the probability of becoming homeowner. Households who received a donation are more than 5 times more likely to purchase their main residence this year than those who did not receive anything. This coefficient is probably biased due to the reverse causality endogeneity problem. Likewise, inheritance increases the probabilities of becoming owner-occupier the year of the transmission by 3. Moreover, receiving an inheritance from parents has a positive and strong effect on households' odds to buy their main residence during 5 years after the transmission. The impact of a wealth shock decreases over time and finally gets disappeared. The same is found for donations. This suggests that the positive wealth shock is absorbed in 6 years, after what receiving a financial transfer does not play any role in explaining tenure choice changes. There exist some disparities between age groups. The duration of the effect is only 3 years for households aged 40-50. This evidence is in line with previous section results. Older households already cumulated wealth during past years, or they may be second time housing buyers. In both cases, their capital accumulation makes them less dependent of their parents support.

[INSERT FIGURE 11]

In order to get rid of the endogeneity bias of our results on donations, we aim at developing an IV approach. Unfortunately, hazard models do not allow a simple instrumentation, and we rather are able to conclude that the estimated effect of donations over the tenure choice may be overestimated in our setting[42].

[42] See Arrondel et al (2014) for further analysis on the causal effect of donations. They use the fact that the probability of receiving a donation decreases with the number of siblings to show that the causal effect of the donation is higher than the effects previously identified.

From table 7, we can infer the direct effect of education on the transition to homeownership. We note that having some education increases the probabilities of becoming homeowner compared to households with no diploma. The estimated effect is partially cleared of the earnings channel since we control for employment situation changes, and occupation and income decile at survey. We know these are not rigorous indicators of income evolution, but they remain our best proxy. Thus, the education effect may represent other remaining factors such as type of job, information access or cultural and social habits. For example, one may think that high educated individuals are more prone to move due to working reasons, especially at the beginning of their career. As a consequence, they prefer not to restrict their job market area.

To further explore the human capital channel, we propose a naïve exercise in which we do not disentangle education and income, but we consider them a unique path. We estimate the equation (1) by education level and we obtain the figure 12[43]. The intergenerational association of wealth increases for all education levels, but there exists important disparities across groups. The intergenerational correlation of homeownership is higher for households with no diploma, and it decreases in education. Moreover, we observe an important divergence across groups over time. Overall, we find that parental wealth influence is partially explained by educational attainment, and human capital investment results an important substitute of parental aid. Educated households may cumulate greater savings and present stable jobs with higher economic resources. These are all desirable characteristics for credit lenders, and subsequent housing access. Contrarily, families with no education may be excluded from credit markets such that for them, parental assistance may be crucial for housing purchase. As a consequence, educated households are less dependent of parental support, and their wealth formation is less determined by the rest of intergenerational persistence channels.

[INSERT FIGURE 12]

After getting rid of major factors explaining homeownership, a significant effect is still observed on the parental side. This residual effect is often interpreted as the rest of mechanisms we cannot identify. In other words, it may be considered as the transmission of preferences and saving propensity from one generation to the next.

[43] Elsewise, this exercise may make sense because education is a permanent feature. It implies a kind of job and certain employment stability during the entire life. It may rather be difficult to think about education affecting instantaneous changes on tenure choice since it is a time invariant variable.

4. Conclusion

The increase in inequalities in developed countries (Alvaredo et al, 2017a; Piketty, 2014) has raised a strong concern that next generation's prospects may be more and more strongly determined by parental economic resources. This paper identifies the intergenerational persistence of homeownership as indicator of wealth mobility in France. Moreover, we provide evidence about the evolution of this link between 1960 and 2015.

We find a substantial and sharp increase in the homeownership persistence between parents and children in France over the last 50 years, which is concentrated among young households between 20 and 39 years old. This is a life-cycle period where individuals are often first-time buyers. This result suggests that economic and demographic changes taking place during the period were particularly discriminant for young adults who grew up in non-owner-occupancy (modest origins). Moreover, we observe higher wealth persistence in the wealthiest origins, suggesting an important concentration of wealth immobilism at the top. These results are robust to different tests.

Furthermore, we provide evidence about different sources of heterogeneity. On one hand, wealth persistence presents important disparities across education levels. We observe a substantial divergence across groups over time, highlighted by the substantially higher role of parental wealth for households with no diploma. This finding suggests a crucial role of human capital on wealth formation over the life cycle; and an important role of education to mitigate social determinism. On the other hand, the intergenerational association of homeownership seems to be related to house prices evolution and to be higher in larger urban areas, where we expect house prices to be higher. This suggests that the rise of house prices may be a major factor explaining intergenerational homeownership dynamics during the period. The analysis of these forces needs further research to attain rigorous conclusions. This may be the subject for future research.

Finally, we find a significant and strong effect of direct wealth transfers on the tenure choice. Receiving an inheritance increases the probabilities of becoming homeowner the year of the transmission by 3, compared to households who did not received any transmission. The positive and strong effect lasts 5 years, it decreases over time and finally gets disappeared. Similar results are found for donations.

The evidence presented in this paper coincides with patterns of wealth mobility found during recent decades in UK and Norway. Whether these results are unique or general to the rest of European countries remains a question to be investigated.

An important concern from these results is the intrinsic vulnerability of young adults to get in the housing ladder, and subsequent wealth accumulation. Children from modest origins may be obliged to access housing later in life compared to their peers, or directly be excluded from the housing market.

This would condemn them to modest savings and capital accumulation. Under a panorama of strong social persistence within wealthiest families and the inability of modest young households to accumulate wealth, we can expect wealth inequalities to continue growing.

The ability of a society to assure next generation wealth position obviously depends on several economic and demographic changes that have taken place during last decades in France. Studying how fiscal changes may impact social mobility remains an important question, which may be issue of future research. Equally, demographic factors may play an important role. The increase on life expectancy, the delay in the age of the first birth or the fall on fertility have obvious effects on donations and bequests (delay on the age of inheritance, decrease on the number of heirs, etc). Furthermore, changes in employment conditions, house prices and credit access may play a crucial role on parental support dependency. The purpose of this paper is not to disentangle these forces, but indeed, their understanding is a major question for further investigation.

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Table 1 : Total Gross Wealth at survey by Housing ownership status

	Ownership of Main Residence			Ownership of Real Estate			
	No	Yes	Ratio	None	Main Res or Other housing	Main Res and Other housing	Ratio
Mean	49.285	316.628	6,42	27.494	229.337	591.305	21,51
P50	11.455	206.631	18,04	9.247	171.991	388.279	41,99

Wealth is expressed in 2015 currency. Weighted figures. Households whose reference person is older than 19 years old. Ratio relates to extreme categories: yes/no; MR&OH/None. Source: Enquêtes Patrimoine 1986-2015

Table 2: Total Gross Wealth at survey by Parental Housing ownership status

	Parental ownership of Main Residence			Parental ownership of Real Estate			
	No	Yes	Ratio	None	Main Res/Other housing	Main Res & Other housing	Ratio
Mean	168.428	240.605	1,43	157.947	221.919	316.987	2,01
P50	89.697	140.646	1,57	85.231	134.005	168.527	1,98

Wealth is expressed in 2015 currency. Weighted figures. Households whose reference person is older than 19 years old. Parental information refers to housing status when the reference person was 14 years old. Ratio relates to extreme categories: yes/no; MR&OH/None. Source: Enquetes Patrimoine 1986-2015

Table 3: Parental Housing Status and Children outcomes at 42 years old, by cohort

	(1) Homeownership	(2) Wealth Decile
Parental Homeownership at 14 years old	2.326*	4.537***
	(1.08)	(1.85)
PHO × cohort 1944	Ref.	Ref.
	(.)	(.)
PHO × cohort 1950	.420	.432*
	(0.26)	(0.21)
PHO × cohort 1956	.980	.463
	(0.56)	(0.22)
PHO × cohort 1962	1.254	.726
	(0.76)	(0.40)
PHO × cohort 1968	1.003	.552
	(0.63)	(0.30)
PHO × cohort 1973	1.080	.789
	(0.66)	(0.42)
Controls	Yes	Yes
Observations	1102	1100

The model is estimated from a logit and ordered logit with survey interactions, weighted. Survey interactions are equivalent to cohort interactions, since we look at the situation at 42 years old. Controls include survey/cohort fixed effects to account for disparities in the aggregate homeownership rate across cohorts. Coefficients are interpreted as odd ratios. Wealth deciles are computed within survey. Source: Patrimoine 1986-2015.

Table 4: Parental Housing Status and Children Wealth decile by survey

	(1)	(2)	(3)
	20-50	20-39	40-50
Parental Homeownership at 14 years old	1.736***	1.704***	1.919***
	(0.12)	(0.15)	(0.23)
PHO × survey 1986	Ref.	Ref.	Ref.
	(.)	(.)	(.)
PHO × survey 1992	1.112	1.215	1.006
	(0.11)	(0.16)	(0.16)
PHO × survey 1998	1.153	1.184	1.062
	(0.10)	(0.14)	(0.15)
PHO × survey 2004	1.215**	1.326**	1.005
	(0.12)	(0.17)	(0.15)
PHO × survey 2010	1.495***	1.603***	1.256
	(0.15)	(0.23)	(0.19)
PHO × survey 2015	1.212*	1.231	1.080
	(0.13)	(0.17)	(0.17)
Controls	Yes	Yes	Yes
Observations	26261	13846	12415

The model is estimated from an ordered logit with survey interactions, weighted. Controls include age dummies to account for life cycle differences and survey fixed effects to account for disparities in the aggregate homeownership rate across surveys. Coefficients are interpreted as odd ratios. Wealth deciles are computed within survey. Source: Patrimoine 1986-2015.

Table 5: Parental Real Estate Status and Children Wealth decile by survey

	(1)	(2)	(3)
	20-50	20-39	40-50
Parental Real Estate - medium	1.681***	1.69146***	1.726436***
	(0.13)	(0.17)	(0.22)
PREM × survey=1986	Ref.	Ref.	Ref.
	(.)	(.)	(.)
PREM × survey=1992	1.103034	1.173611	1.085464
	(0.12)	(0.18)	(0.19)
PREM × survey=1998	1.1283	1.1468	1.091036
	(0.11)	(0.15)	(0.17)
PREM × survey=2004	1.200247*	1.289859*	1.047166
	(0.13)	(0.18)	(0.17)
PREM × survey=2010	1.465357***	1.572818***	1.264739
	(0.16)	(0.24)	(0.21)
PREM × survey=2015	1.329052**	1.315413*	1.282023
	(0.15)	(0.20)	(0.22)
Parental Real Estate - high	2.29689***	2.131721***	2.949282***
	(0.24)	(0.27)	(0.56)
PREH × survey=1986	Ref.	Ref.	Ref.
	(.)	(.)	(.)
PREH × survey=1992	1.103982	1.292575	.8534323
	(0.16)	(0.25)	(0.20)
PREH × survey=1998	1.433344***	1.538773**	1.263661
	(0.19)	(0.27)	(0.29)
PREH × survey=2004	1.805611***	1.760334***	1.771583**
	(0.26)	(0.32)	(0.44)
PREH × survey=2010	2.130882***	2.118904***	1.909435***
	(0.32)	(0.43)	(0.46)
PREH × survey=2015	1.573146***	1.775028***	1.156119
	(0.25)	(0.36)	(0.30)
Observations	26158	13791	12367

The model is estimated from an ordered logit with survey interactions, weighted. Controls include age dummies to account for life cycle differences and survey fixed effects to account for disparities in the aggregate homeownership rate across surveys. Coefficients are interpreted as odd ratios. The reference category is parents with no housing assets. Parental Real Estate medium (PREM) refers to parents who owned their main residence or other housing assets. Parental Real Estate high (PREH) refers to parents who owned both their main residence and other housing assets. Wealth deciles are computed within survey. Source: Patrimoine 1986-2015.

Table 6: % of households that received a financial transfer

	Inheritance		Donation	
	Parental ownership	Children ownership	Parental ownership	Children ownership
None	21,8%	13,9%	8,5%	6,1%
MR/OH	28,9%	30,0%	17,6%	18,4%
MR & OH	33,2%	49,0%	30,9%	32,1%

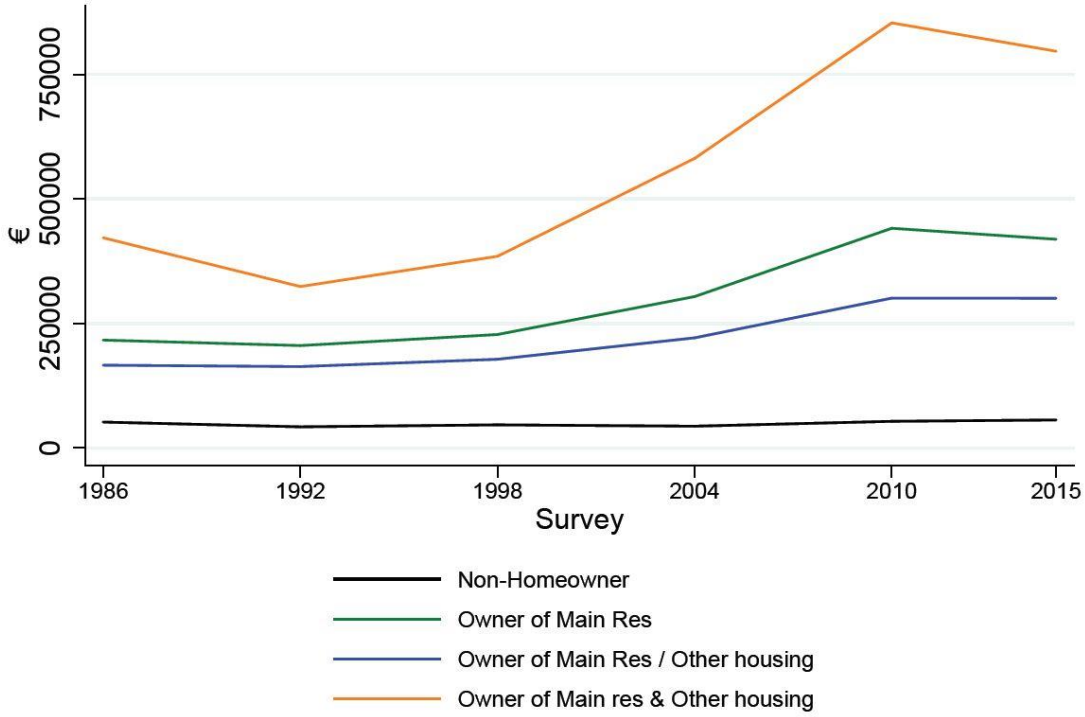
MH= Main Residence. OH= Other Housing. Weighted figures. Households where the reference person is older than 19 years old. Source: Enquête Patrimoine 1986-2015

Table 7: Impact of intergenerational wealth transfers to become homeowner, 1960-2015

	(1) 1y shock	(2) 3y shock	(3) 5y shock	(4) 7y shock	(5) Permanent
Parental HO	1.255***	1.241***	1.240***	1.241***	1.223***
Education:					
No diploma	Ref.	Ref.	Ref.	Ref.	Ref.
Lower than BAC	1.135***	1.132***	1.131***	1.130***	1.128***
BAC	1.069**	1.063**	1.063**	1.064**	1.062**
higher than BAC	1.0345	1.021	1.020	1.023	1.021
Inheritance	3.089***	2.084***	1.754***	1.591***	1.353***
Donation	5.301***	3.724***	2.939***	2.538***	2.151***
Observations	869240	869240	869240	869240	869240

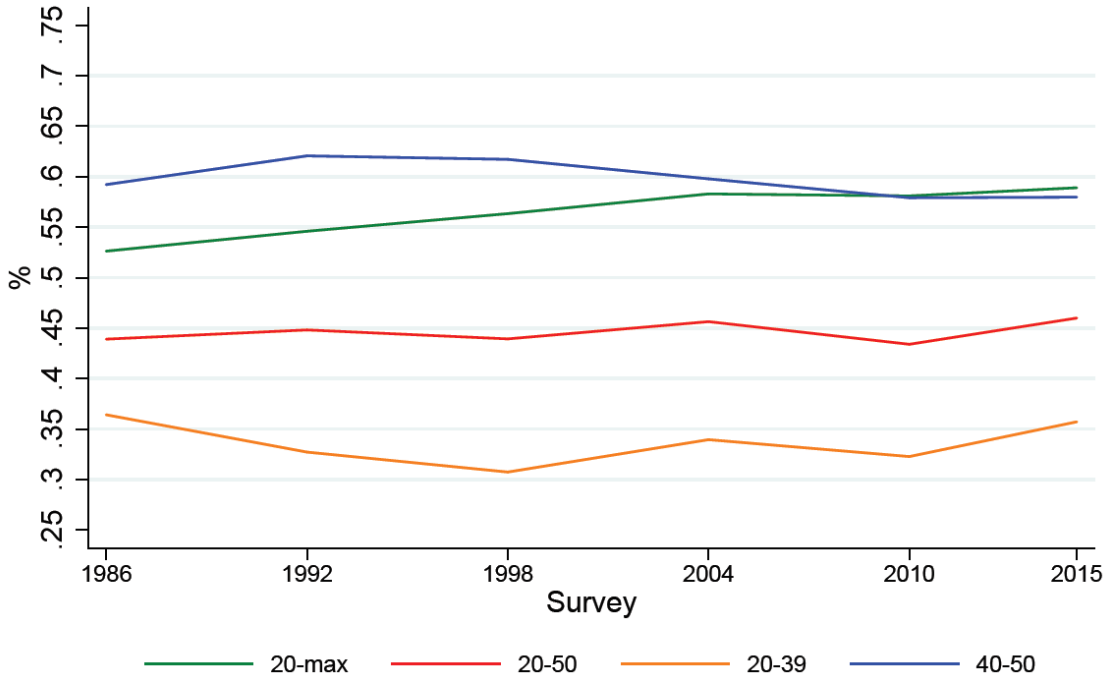
The model is estimated from a hazard, non weighted model. Controls include father occupation, children occupation at survey, number of siblings, household income decile at survey, employment situation, family structure, number of children, age, individual and time fixed effects. Households where the reference person is aged 20-50 years old. Source: Patrimoine 1986-2015.

Figure 1: Mean Total Gross Wealth by Real Estate ownership, >19 years old



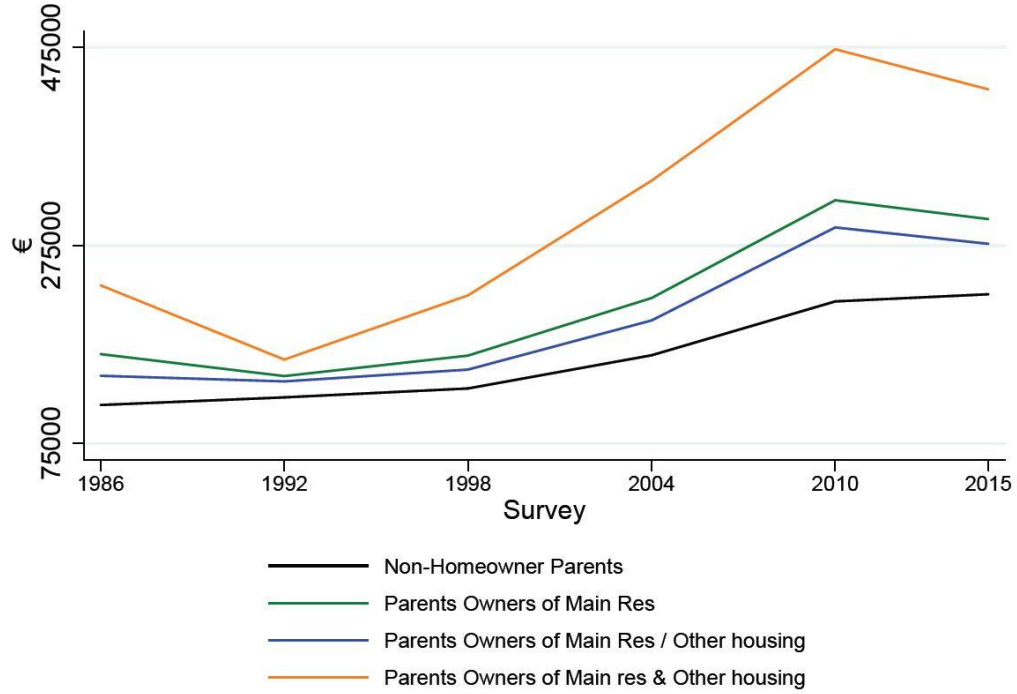
Amounts refer to 2015 currency (€). Weighted figures. Source: Enquete Patrimoine 1986-2015

Figure 2: Homeownership rate in France by age group



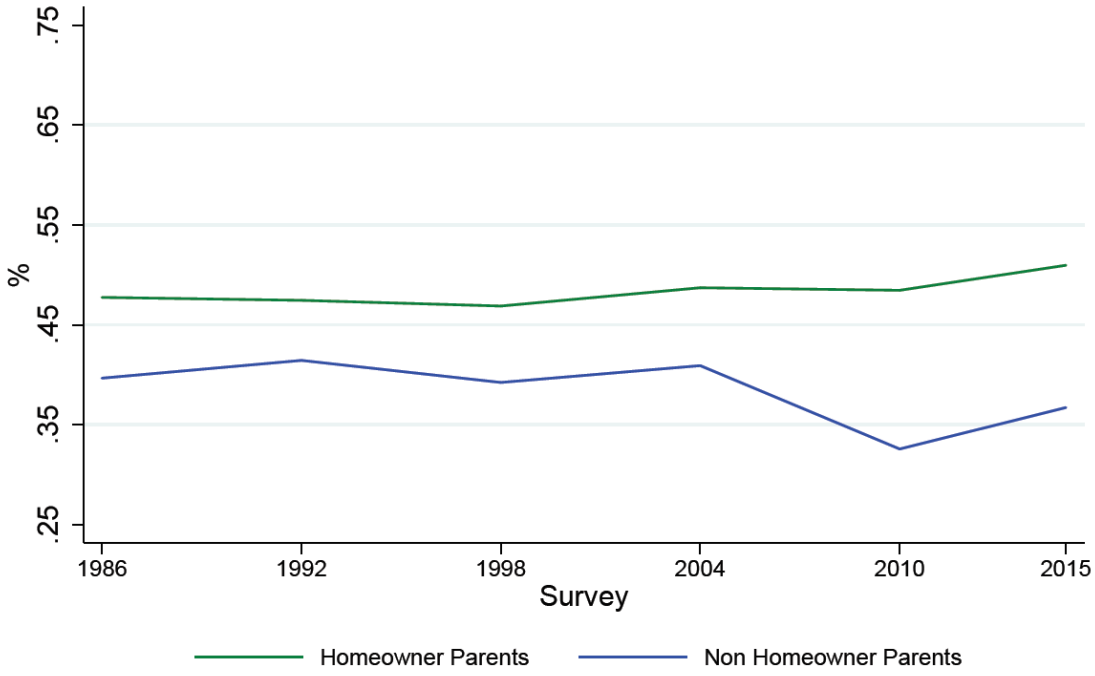
Weighted figures. Source: Enquete Patrimoine 1986-2015

Figure 3: Mean Total Gross Wealth by Parental Real Estate ownership, >19 years old



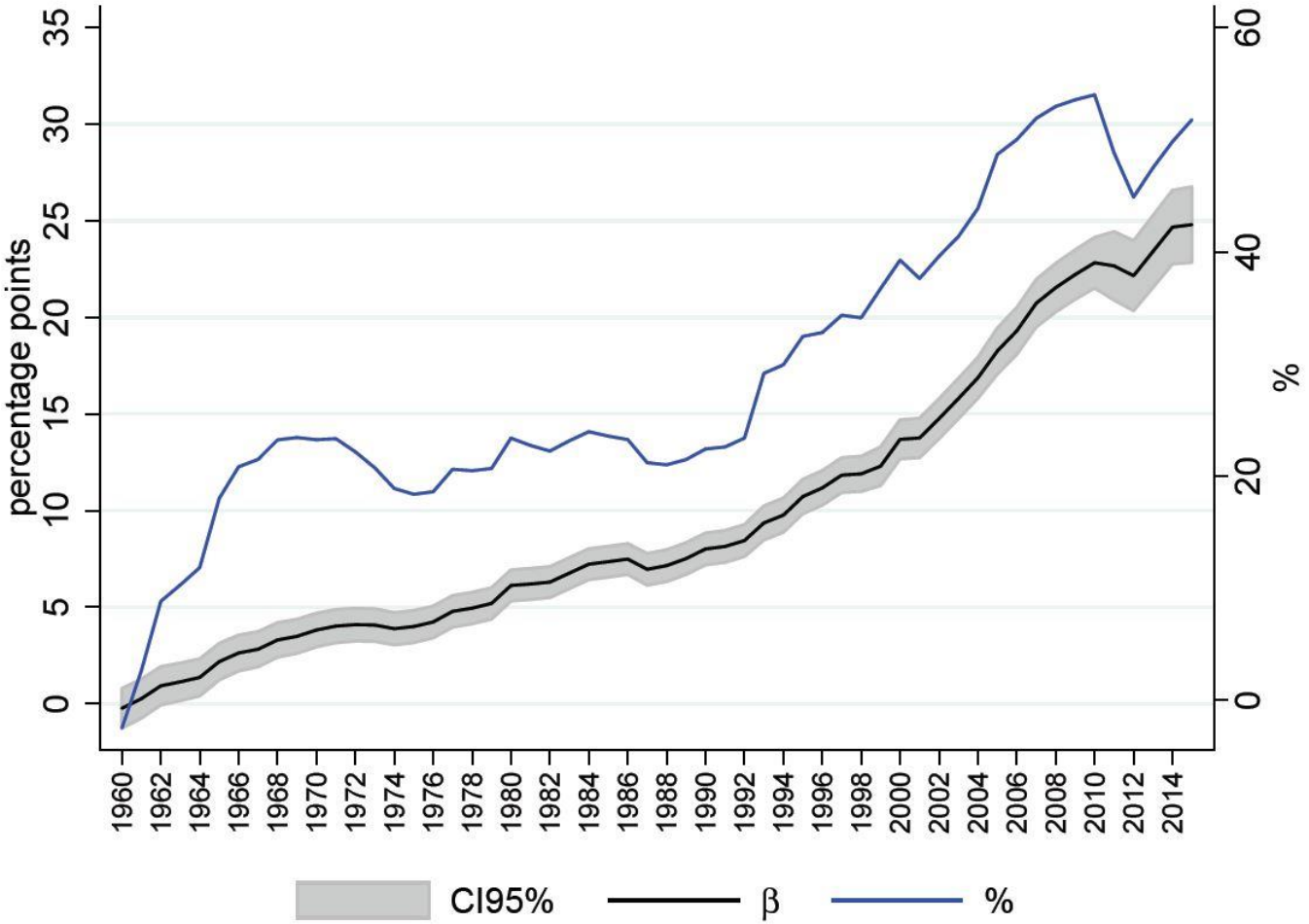
Amounts refer to 2015 currency (€). Weighted figures. Source: Enquete Patrimoine 1986-2015

Figure 4: Homeownership Rate by Parental Main Residence tenure, 20-50 years old



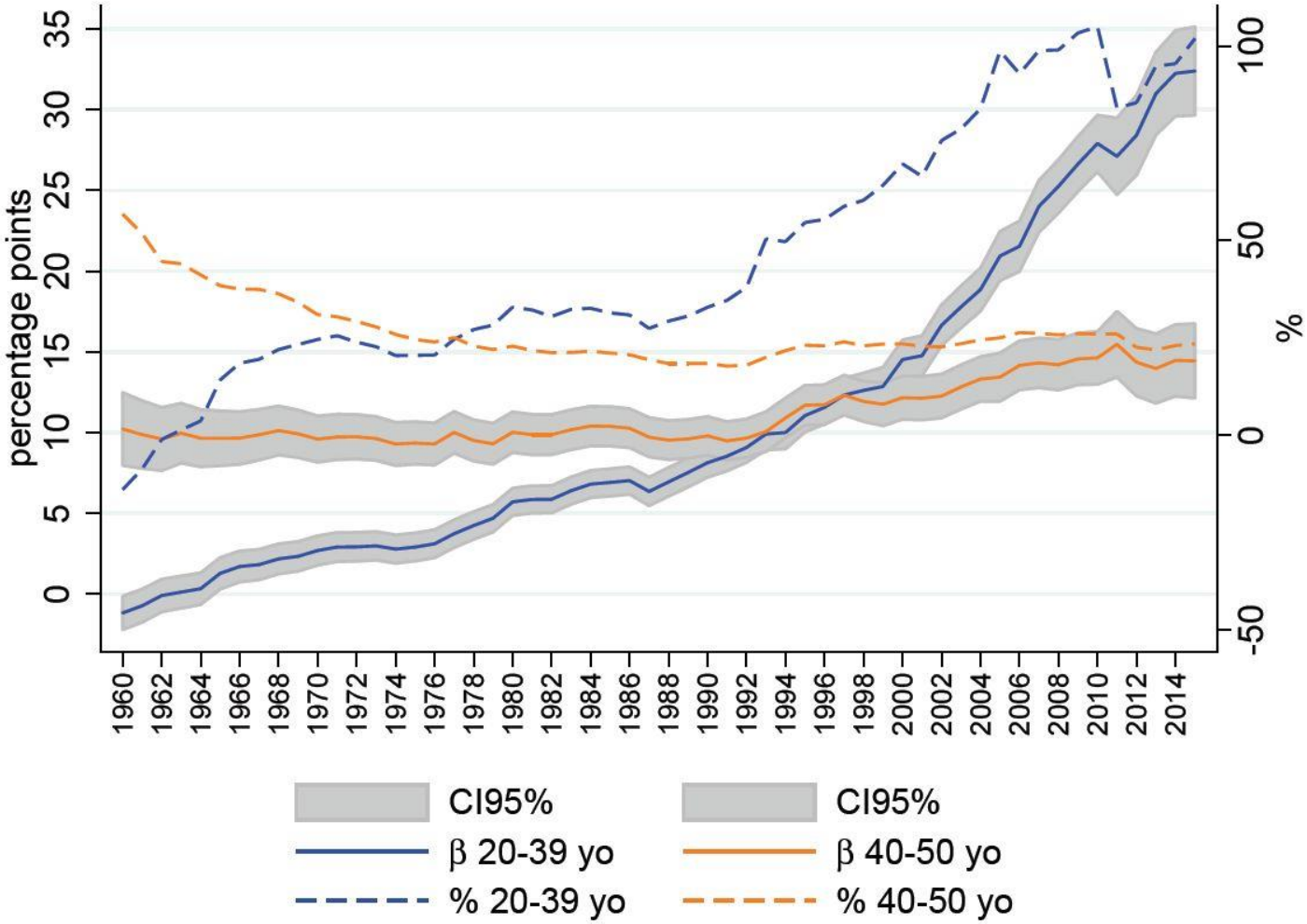
Weighted figures. Source: Enquete Patrimoine 1986-2015

Figure 5a: Intergenerational Homeownership correlation (β), 20-50 years old



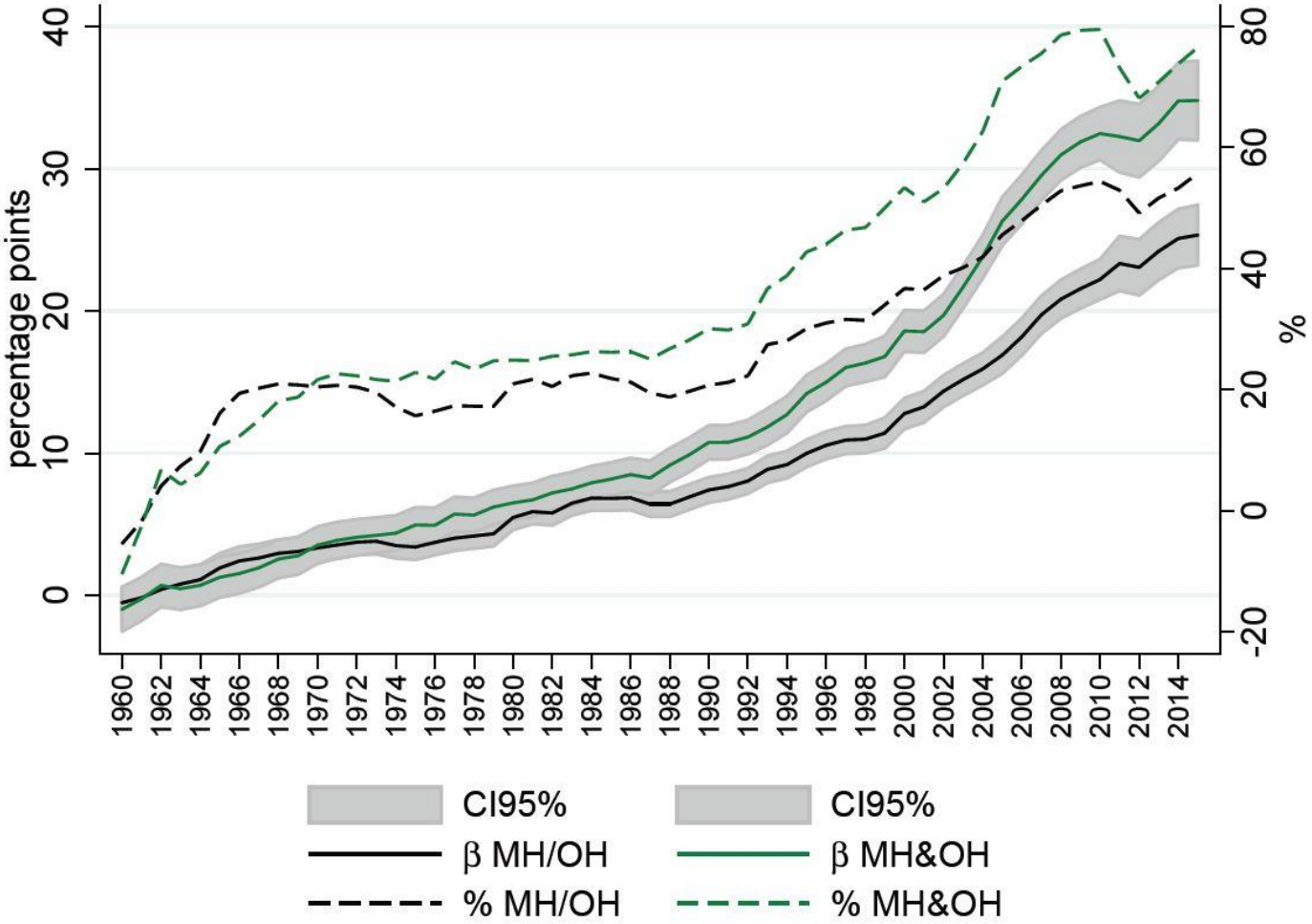
Gross correlation estimated from a GLS regression where the dependent variable is a dummy variable which takes value 1 when the household owns its main residence in time t; and 0, if the household rents it. Homeownership of the parents of the reference person is measured when she was 14 years old. Control variables: age of the reference person, time fixed effects.

Figure 5b: Intergenerational Homeownership correlation (β), 20-39 vs 40-50 years old



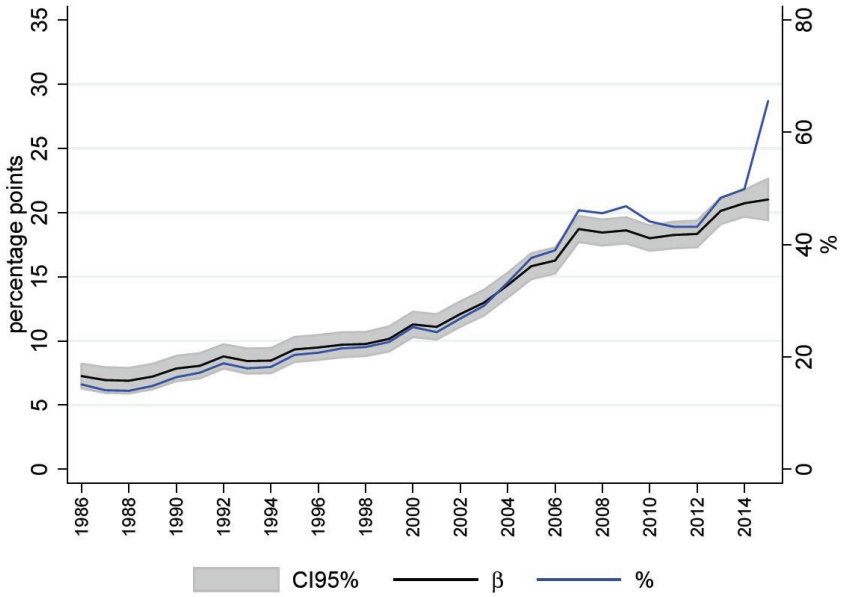
Gross correlation estimated from a GLS regression where the dependent variable is a dummy variable which takes value 1 when the household owns its main residence in time t; and 0, if the household rents it. Homeownership of the parents of the reference person is measured when she was 14 years old. Control variables: age of the reference person, time fixed effects.

Figure 6: Intergenerational Real Estate correlation (β), 20-50 years old



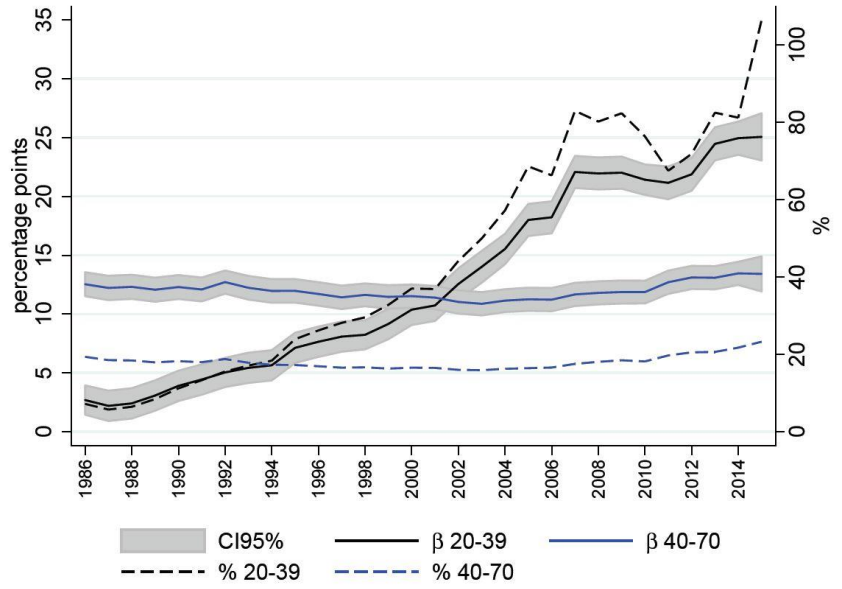
Gross correlation estimated from a GLS regression where the dependent variable is a dummy variable which takes value 1 when the household owns its main residence in time t; and 0, if the household rents it. Real estate ownership of the parents of the reference person is measured when she was 14 years old, and it is a categorical variable which takes value 1 if the parents hold their main residence or other housing assets (MH/OH), and 2 if they owned both types of housing assets (MH&OH). Control variables: age of the reference person, time fixed effects.

Figure 7: Intergenerational Homeownership correlation (β) between 1986-2015, 20-50 years old (weighted) – Robustness test



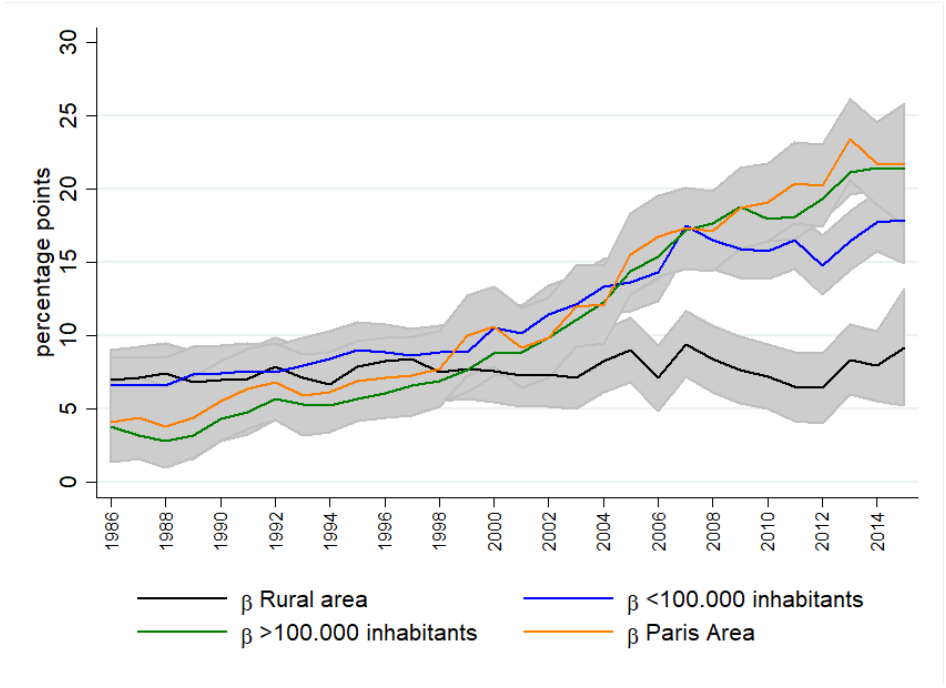
Gross correlation estimated from a weighted GLS regression where the dependent variable is a dummy variable which takes value 1 when the household owns its main residence in time t; and 0, if the household rents it. Homeownership of the parents of the reference person is measured when she was 14 years old. Control variables: age of the reference person, time fixed effects.

Figure 8: Intergenerational Homeownership correlation (β), 20-39 vs 40-70 years old (weighted) – Robustness test



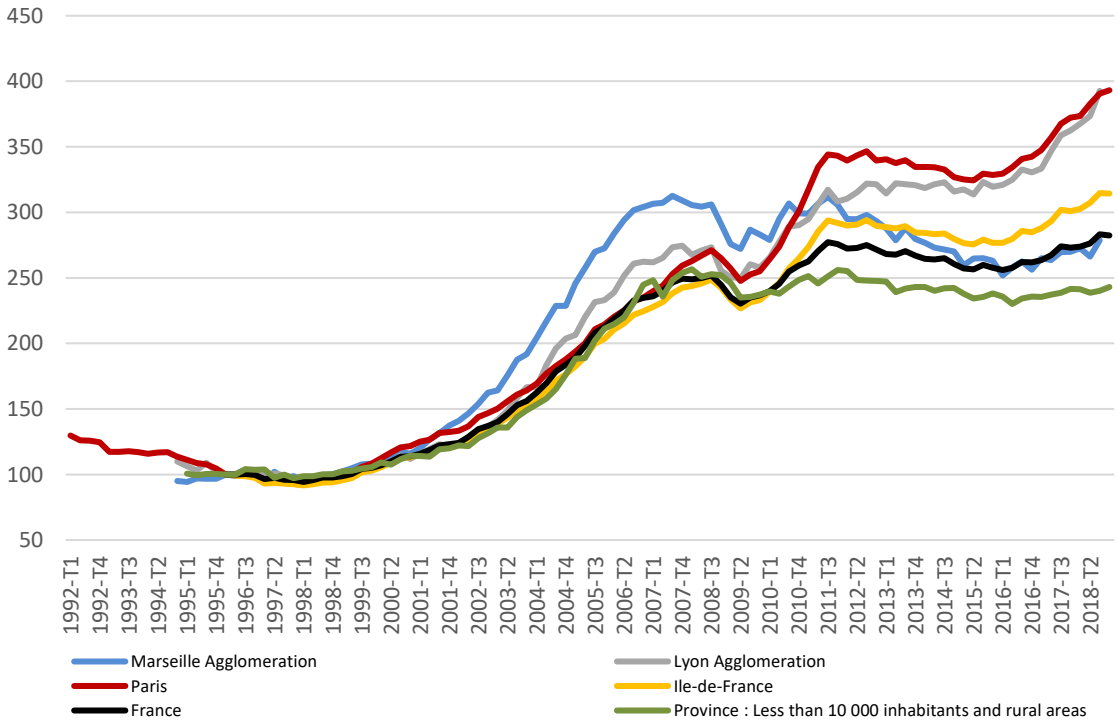
Gross correlation estimated from a weighted GLS regression where the dependent variable is a dummy variable which takes value 1 when the household owns its main residence in time t; and 0, if the household rents it. Homeownership of the parents of the reference person is measured when she was 14 years old. Control variables: age of the reference person, time fixed effects.

Figure 9: Intergenerational Homeownership correlation (β) by Urban Size



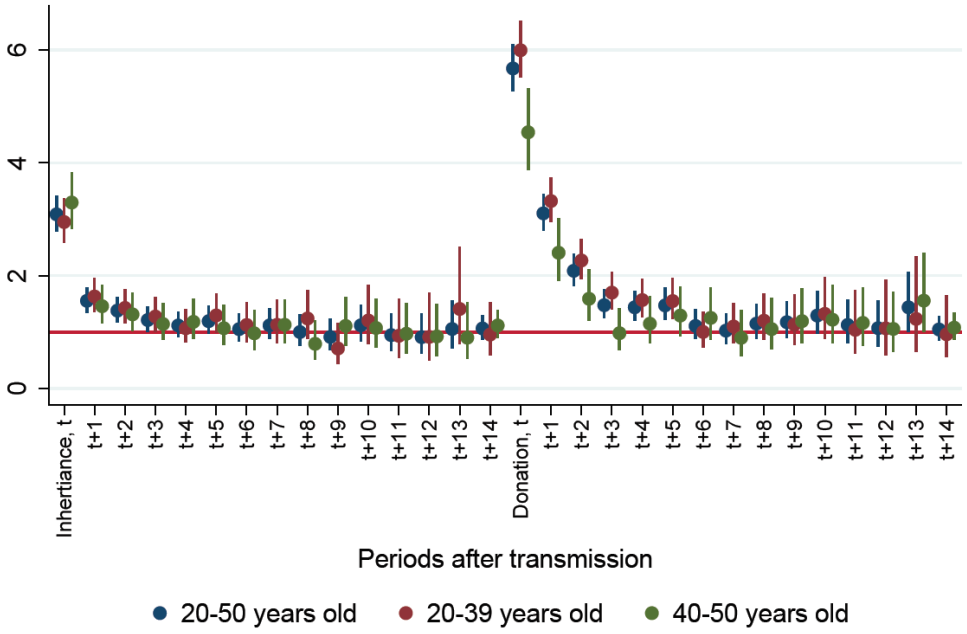
Gross correlation estimated from a weighted GLS regression where the dependent variable is a dummy variable which takes value 1 when the household owns its main residence in time t; and 0, if the household rents it. Homeownership of the parents of the reference person is measured when she was 14 years old. Curves are estimated separately for each urban size category and Paris area. Control variables: age of the reference person, time fixed effects.

Figure 10: House prices index evolution in France



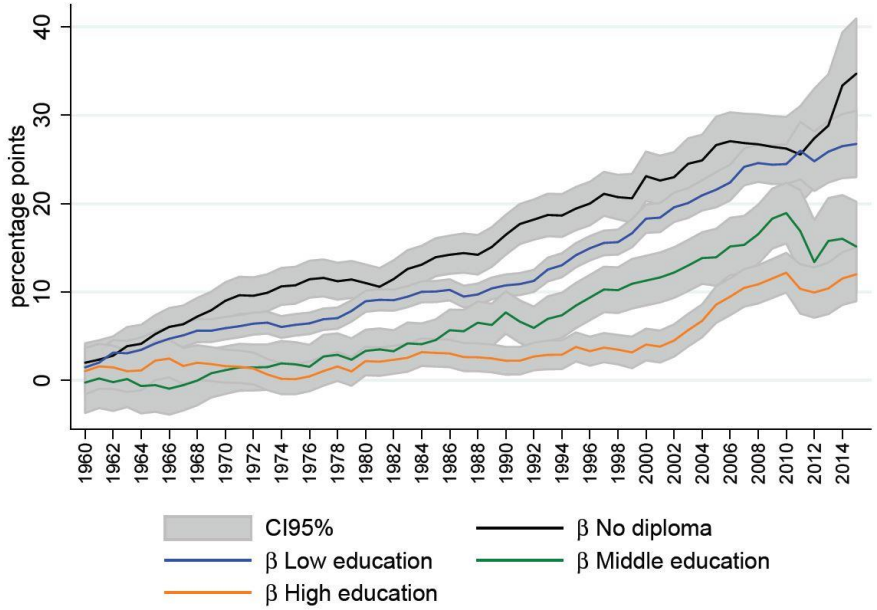
100=1996. House prices index of old dwellings (apartments). Source: Indices Notaires-Insee

Figure 11: Length of wealth transfers effect to become homeowner, 1960-2015



The model is estimated from a hazard non weighted model. Controls include father homeownership status, father occupation, children occupation at survey, household income decile at survey, education, employment situation, family structure, number of children, age, individual and time fixed effects. Coefficients are exponentiated. Source: Patrimoine 1986-2015.

Figure 12: Intergenerational Homeownership correlation (β) by educational attainment, 20-50 years old



Gross correlation estimated from a GLS regression where the dependent variable is a dummy variable which takes value 1 when the household owns its main residence in time t; and 0, if the household rents it. Homeownership of the parents of the reference person is measured when she was 14 years old. Control variables: age of the reference person, time fixed effects.

A. DATA APPENDIX:

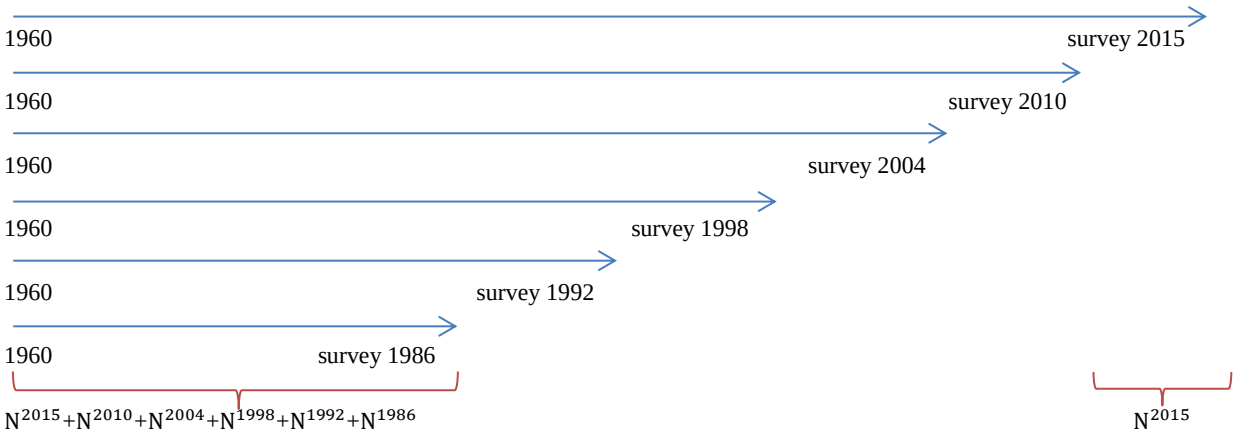
i. Panelization

In spite of the absence of a monitoring device in previous surveys, there exists substantial retrospective information concerning several aspects of households' life. For example: professional situation changes, wealth transfers or household formation among others. Using the year at which each event takes place, we are able to construct the socioeconomic history of households previous to the survey.

We follow the employment status of the reference person and his/her partner from the first entry to the job market. This variable tries to proxy the financial situation at each stage of life. It covers very heterogeneous statuses such as internships, first job seeker, national military service, unemployment, or self-employed among others. Intergenerational transmissions can be traced rigorously during the full period since we know the number of received transfers by the reference person and her couple and the year of the transaction. The information about the year of purchase of the current main residence favors the reproduction of household's housing status dynamics. We also reproduce the dynamics of marital status of the reference person, since we observe the year of end and beginning of two last main couples. The arrival of new children can be emulated based on children's year of birth. Using the cohort of the reference person we picture the age evolution.

Unfortunately, the rest of harmonized variables do not allow their panelization because they are simply static during most of the life cycle (cohort, sex, migrant status and education); or we do not have enough information to reproduce their dynamics (occupation, income or total wealth). Variables identifying parental situation during childhood are obviously static over time because they refer to a particular moment in time: when the child was 14 years old.

We restrict the sample to 20-50 years old households in order to preserve the longest (as possible) historical perspective. 1960 is the first year containing individuals from all ages between 20 and 50 years old. As a result, the panelized sample starts in 1960. Each household is "followed" between 20 years old or 1960, and the date of the survey. At each survey, a new set of individuals is overlapped with previous sample. Between 2010 and 2015, we only observe individuals surveyed in 2015 (N^{2015}). Before 2010, a new set of individuals overlaps (N^{2015} and N^{2010}); and so on and so forth.



You can find an example of the final structure of the synthetic panel data in the following table:

Before panelization							After panelization								
id	survey	Cohort	S_age	Educ	HO	HO year	id	survey	year	Cohort	S_age	Age	Educ	HO	HO year
1	1998	1964	34	2	0	.	1	1998	1984	1964	34	20	2	0	.
2	2010	1954	56	3	1	1985	1	1998	1985	1964	34	21	2	0	.
			…				1	1998	1986	1964	34	22	2	0	.
											…				
							1	1998	1996	1964	34	32	2	0	.
							1	1998	1997	1964	34	33	2	0	.
							1	1998	1998	1964	34	34	2	0	.
							2	2010	1974	1954	56	20	3	0	1985
							2	2010	1975	1954	56	21	3	0	1985
											…				
							2	2010	1984	1954	56	30	3	0	1985
							2	2010	1985	1954	56	31	3	1	1985
							2	2010	1986	1954	56	32	3	1	1985
											…				
							2	2010	2003	1954	56	49	3	1	1985
							2	2010	2004	1954	56	50	3	1	1985
											…				

HO refers to homeownership

The exclusivity of our data structure over a long term period represents one of the main contributions of the paper, since, to our knowledge, the harmonization and panelization of all French wealth surveys for such a purpose has never been done before (see Garbinti and Georges-Kot, 2017, for another application).

ii. Homeownership rate

An important issue of our data is the impossibility to observe housing status previous to the situation at survey. In other words, it may be that a household already owned their main residence before moving to the current one, such that they are second time homeowners. This limit of the data may be problematic as we move far from the last survey (1986) because all the information relies on households surveyed at older ages, which are more prone to be second owner-occupiers. As a result, we are missing an important part of homeowners at the beginning of the period and the overall homeownership rates from our data are potentially underestimated, particularly before 1986. The homeownership rate of our synthetic panel data is presented in **figure 4, appendix B**.

iii. Unbalanced panel

The synthetic panel data we construct for this study present right censored observations. We observe households between their 20 years old, or 1960, till the day of the survey. Right after the survey, households' information is completely missing. The fact that information is missing at some point depends on the year of the survey and age at survey. Then, missingness is not at random and can be explained by these two factors.

In the equation (A), we include the explanatory factors of missingness in our baseline equation (1):

$$HO_{it} = \alpha_0 + \beta_{1960} PHO_i + \sum_{year=1961}^{2015} \beta_{year} PHO_i * \ year_t + \gamma age_{it} + \alpha_t + \partial_1 Survey_i + \partial_2 AgeSurvey_i + \epsilon_{it} \qquad \text{(A)}$$

Such that $Survey_i$ and $AgeSurvey_i$ are time-invariant variables. Applying the within transformation in a classical GLS fixed effects model allows us to get rid of these factors and check the robustness of our results. We present respective fixed effects model in the appendix B.

iv. Constructed weights

Each household has a weight ($w^{1986}, w^{1992}, w^{1998}, w^{2004}, w^{2010}, w^{2015}$) which corresponds to their situation at survey. The weight at survey is computed to be national representative at the survey year (for example, 2015). Assuming that the weight of a household in the population should have been the same 5 years before (for example, in 2010) is not a reliable assumption. For instance, the representativeness of 20 years old people in 2010 relies on 25 years old individuals in 2015. The weight w^{2015} we gave them at 25 in the survey is not necessarily the same they should have in the society of 2010 at 20. As a result, we aim at creating new weights in order to get representative samples at each year. In what is to follow, we propose a methodology to adjust survey weights to our panel structure and get national-year representativeness. We follow several steps.

First, we get rid of extreme values by imputing the 1% tail value at each tail. Second, we correct weights according to the probabilities of each individual of being surveyed on other surveys of interest. The coefficient of correction L is computed according to their age and survey, for older than 17 individuals. For example, L takes the value 2 for a 20 years old individual surveyed in 2010 (25 years old in 2015), because the individual could have been selected in 2 of the treated surveys according to her age. Then, we apply the correction and compute the corrected w_i:

$$w'_i = \frac{w_i}{L_i(survey_i, age_i)}$$

Finally, we proceed to a calibration of the survey sampling weights to get population totals at each year. The marginals of the calibration (variables being calibrated to) are age, housing status and parental homeownership. Age is treated in four groups: 20-39, 40-50, 51-70 and more than 70. The targeted population totals used in the calibration are obtained from each survey totals since we know these figures are national representative at each survey. In order to make smooth transitions, we compute linear projections of totals between surveys. Thus, we obtain population totals for each year between 1986 and 2015. As a result, the resulting weights will allow us to obtain representative consistent results in the presence of false negatives for the restricted period 1986-2015.

Unfortunately, this process cannot be applied to the years previous to 1986, since we do not have enough information on the required totals for this period.

v. Benchmark vs Consistent model

We find a substantial increasing trend on homeownership persistence across generations both in the benchmark (B) and the consistent model (C) of section 2. However, results suggest that the benchmark model overestimates the intergenerational correlation β_t^i for most of the period compared to the consistent model, such that:

$$\beta_t^B > \beta_t^C, \ \forall\, t \geq 1986 \quad \text{(v.1)}$$

and

$$\begin{cases} \epsilon_t^B > \epsilon_t^C, & \forall\, t \in [1986,2012] \\ \epsilon_t^B < \epsilon_t^C, & \forall\, t > 2012 \end{cases} \quad \text{(v. 2)}$$

Given that,

$$\beta_t^i = \mathbb{E}^i(HO/PHO = 1, age, year_t) - \mathbb{E}^i(HO/PHO = 0, age, year_t) \quad \text{(v. 3)}$$

$$\epsilon_t^i = \frac{\beta_t^i}{\mathbb{E}^i(HO/PHO = 0, age, year_t)} \quad \text{(v. 4)}$$

$$\text{avec } i = \{B, C\}$$

we know that the bias of the intergenerational correlation β_t^i in the benchmark estimator (B) compared to the consistent one (C) depends on the following expression (v.7):

$$\mathbb{E}^B(HO/PHO = 1, age, year_t) - \mathbb{E}^B(HO/PHO = 0, age, year_t) \gtrless \mathbb{E}^C(HO/PHO = 1, age, year_t) - \mathbb{E}^C(HO/PHO = 0, age, year_t) \text{ (v. 5)}$$

$$\mathbb{E}^C(HO/PHO = 1, age, year_t) - \mathbb{E}^B(HO/PHO = 1, age, year_t) \gtrless \mathbb{E}^C(HO/PHO = 0, age, year_t) - \mathbb{E}^B(HO/PHO = 0, age, year_t) \text{ (v. 6)}$$

$$\Delta\mathbb{E}(HO/PHO = 1, age, year_t) \gtrless \Delta\mathbb{E}(HO/PHO = 0, age, year_t) \text{ (v. 7)}$$

and the direction of the error in the relative advantage ϵ_t^i comes from (v.9):

$$\frac{\beta_t^B}{\mathbb{E}^B(HO/PHO = 0, age, year_t)} \gtrless \frac{\beta_t^C}{\mathbb{E}^C(HO/PHO = 0, age, year_t)} \quad \text{(v. 8)}$$

$$\frac{\mathbb{E}^C(HO/PHO = 0, age, year_t)}{\mathbb{E}^B(HO/PHO = 0, age, year_t)} \gtrless \frac{\beta_t^C}{\beta_t^B} \quad \text{(v. 9)}$$

If the underestimation of homeownership rates is more important for children of homeowners in the benchmark setting, we then expect the benchmark model to give downward biased coefficients of the intergenerational correlation β_t^B (v.7). On the other hand, if false negatives are more concentrated among non-owner-occupier families (the underestimation of homeownership is more important for this group), then, the benchmark model upward-bias the results. This is the case for the entire period of study 1986-2015.

On the other hand, it is relevant to look at the relative advantage ϵ_t^i rather than only absolute terms. From (v.9), if the correction of the homeownership rate for the reference category is more important than the error in the coefficient of intergenerational correlation β_t^i, then, the relative advantage ϵ_t^i in the benchmark model is overestimated. This is the case between 1986 and 2012. We find the opposite case later on.

From this evidence, we conclude that there is a general underestimation of homeownership rates for periods in which surveys overlap. After 2012, homeownership rates are overestimated due to the oversampling of wealthy households, which are often homeowners; and the lack of overlapping between surveys. Moreover, the presence of false negatives distorts substantially more the homeownership rate for children of non-owner-occupier families. The factors explaining the latter evidence may be the capability of richer households to acquire a more appropriate dwelling for the long term (bigger surface,

location, etc). While poorer families may buy constrained housing and need to change later on according to the family financial means and needs. The analysis of these factors is not under the scope of this paper.

Depending on whether we expect false negatives to be concentrated among the poorest or the richest origins before 1986, we expect the coefficient of the intergenerational correlation of homeownership (β) to be up or downward biased, respectively. The bias of the relative advantage ϵ (percentage instead of percentage points) results from the relationship in (v.9). Unfortunately, there is no way to test it with the available information in our data set, and giving some directions would be purely speculative.

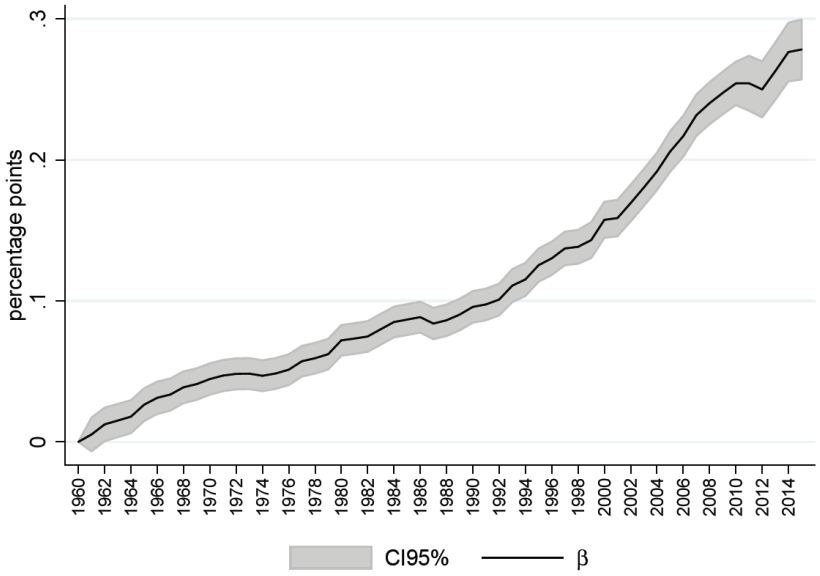
B. APPENDIX: ADDITIONAL RESULTS

Table B.1: Mean Homeownership Correlation, 1960-2015

	(1)	(2)	(3)
	20-50	20-39	40-50
Parental Homeownership at 14 years old	.077***	.066***	.11***
	(0.00)	(0.00)	(0.00)
Controls	Yes	Yes	Yes
Baseline	26%	17%	45%
Observations	1233294	847262	386032

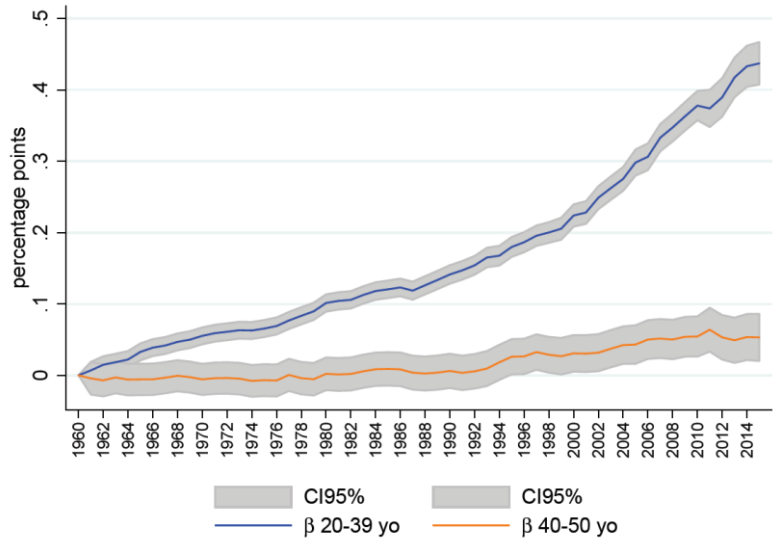
The model is estimated from a GLS random effects, non weighted. Controls include age dummies to account for life cycle effects and time fixed effects to account for time-variation in the aggregate homeownership rate. Source: Patrimoine 1986-2015.

Figure B.1a: Intergenerational Homeownership correlation – Fixed effects, 20-50 years old



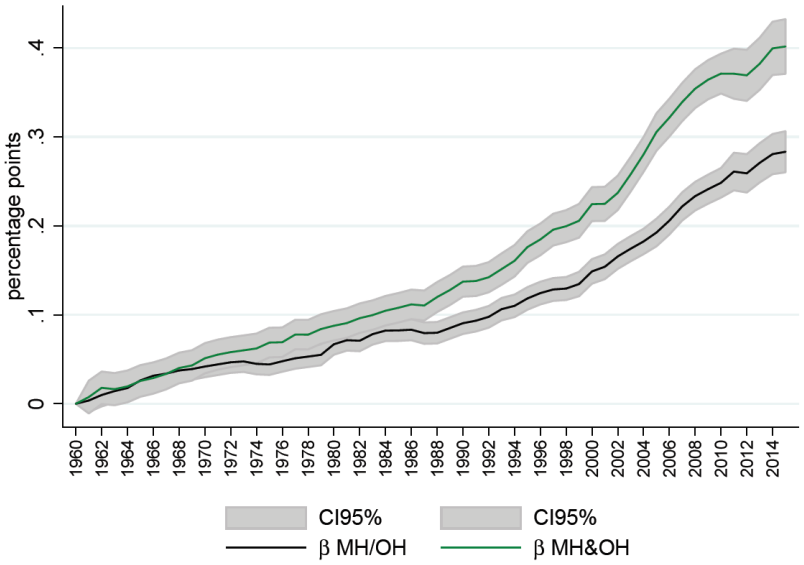
Gross correlation estimated from a GLS regression where the dependent variable is a dummy variable which takes value 1 when the household owns its main residence in time t; and 0, if the household rents it. Homeownership of the parents of the reference person is measured when she was 14 years old. Control variables: age of the reference person, time fixed effects and individual fixed effects.

Figure B.1b: Intergenerational Homeownership correlation – Fixed effects, 20-39 vs 40-50 years old



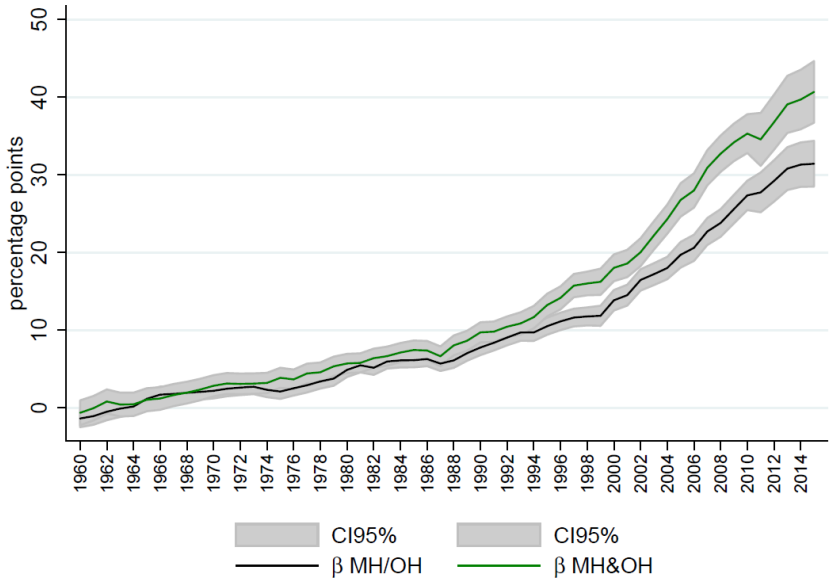
Gross correlation estimated from a GLS regression where the dependent variable is a dummy variable which takes value 1 when the household owns its main residence in time t; and 0, if the household rents it. Homeownership of the parents of the reference person is measured when she was 14 years old. Control variables: age of the reference person, time fixed effects and individual fixed effects.

Figure B.2: Intergenerational Real Estate correlation – Fixed Effects, 20-50 years old



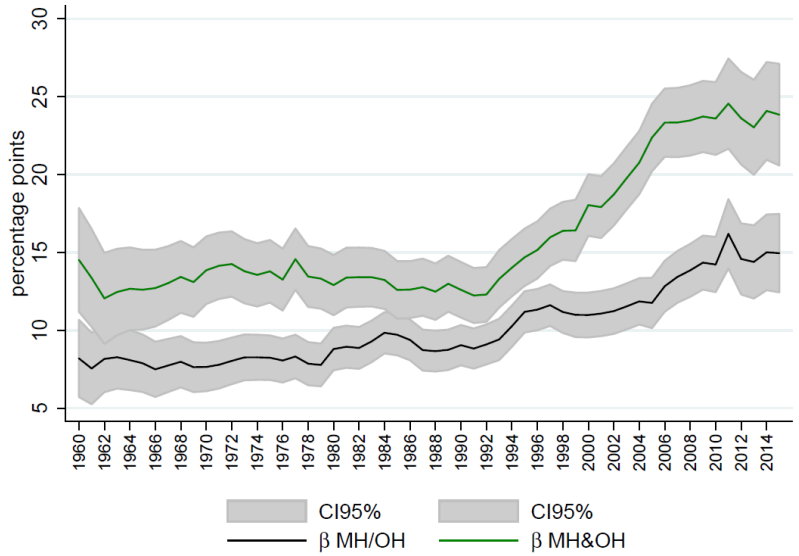
Gross correlation estimated from a GLS regression where the dependent variable is a dummy variable which takes value 1 when the household owns its main residence in time t; and 0, if the household rents it. Homeownership of the parents of the reference person is measured when she was 14 years old, and it is a categorical variable which takes value 1 if the parents hold their main residence or other housing assets (MH/OH), and 2 if they owned both types of housing assets (MH&OH). Control variables: age of the reference person, time fixed effects and individual fixed effects.

Figure B.3a: Intergenerational Real Estate correlation (β), 20-39 years old



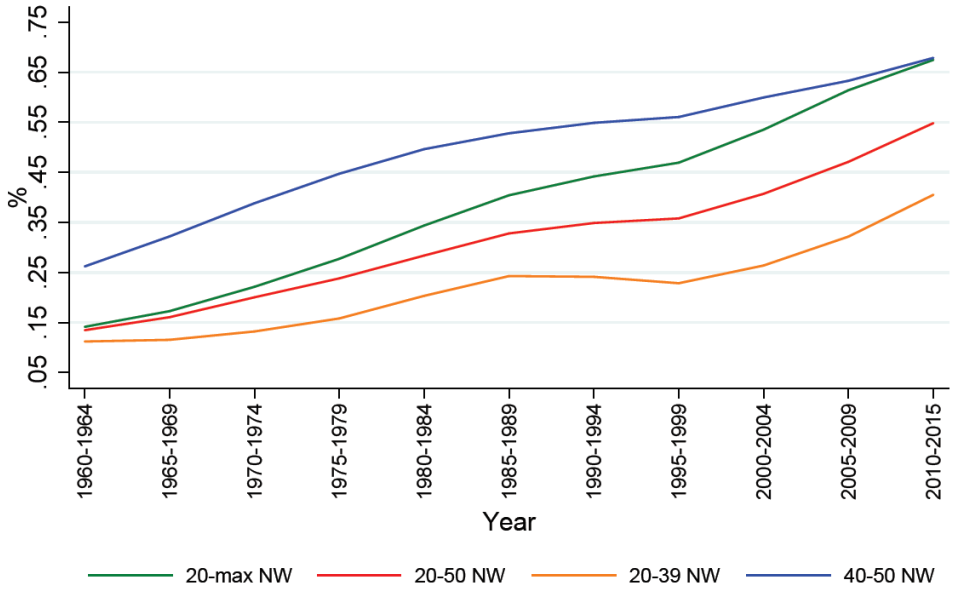
Gross correlation estimated from a GLS regression where the dependent variable is a dummy variable which takes value 1 when the household owns its main residence in time t; and 0, if the household rents it. Real estate ownership of the parents of the reference person is measured when she was 14 years old, and it is a categorical variable which takes value 1 if the parents hold their main residence or other housing assets (MH/OH), and 2 if they owned both types of housing assets (MH&OH). Control variables: age of the reference person, time fixed effects.

Figure B.3b: Intergenerational Real Estate correlation (β), 40-50 years old



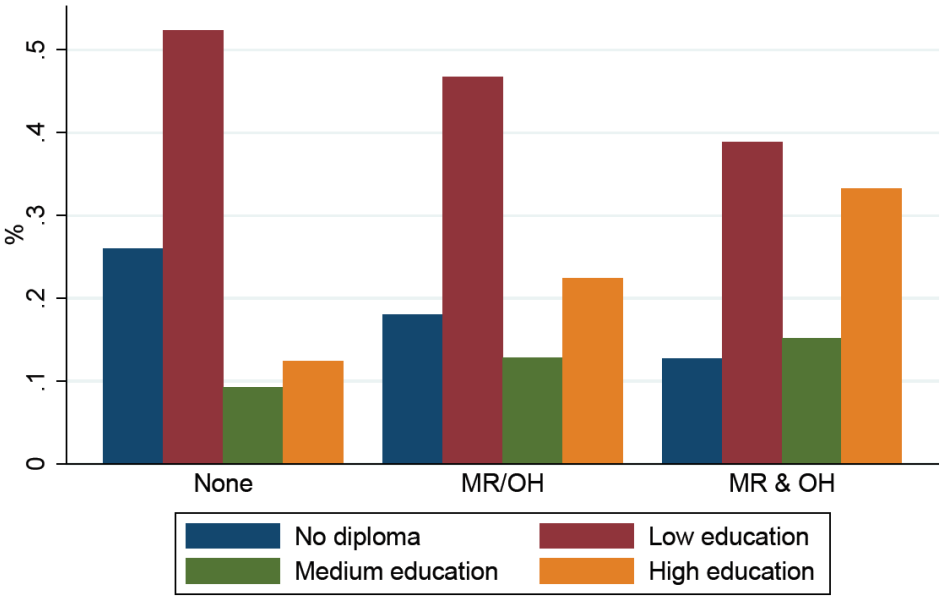
Gross correlation estimated from a GLS regression where the dependent variable is a dummy variable which takes value 1 when the household owns its main residence in time t; and 0, if the household rents it. Real estate ownership of the parents of the reference person is measured when she was 14 years old, and it is a categorical variable which takes value 1 if the parents hold their main residence or other housing assets (MH/OH), and 2 if they owned both types of housing assets (MH&OH). Control variables: age of the reference person, time fixed effects.

Figure B.4: Homeownership Rate synthetic panel, 1960-2015



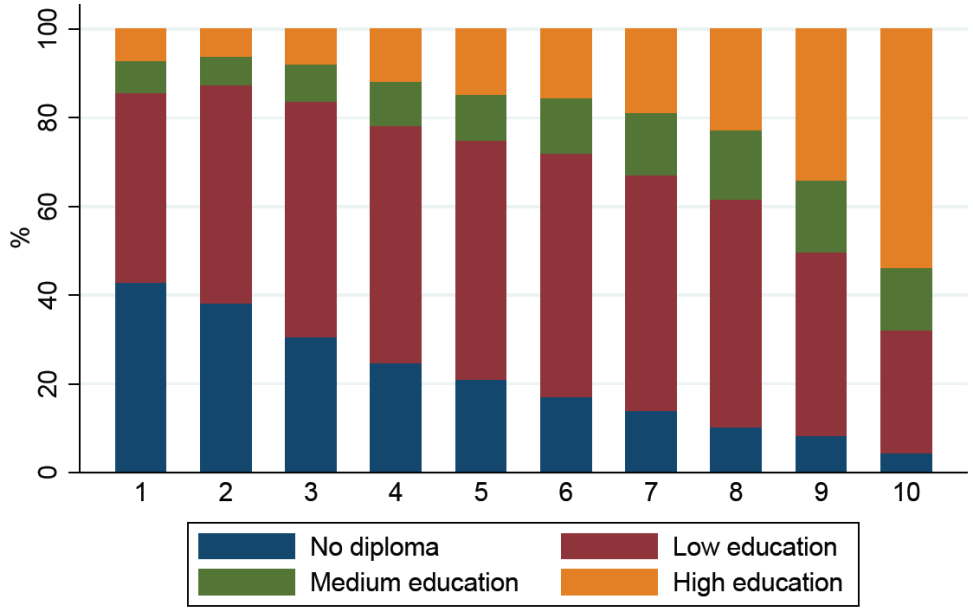
Computed by group of years. Source: Enquete Patrimoine 1986-2015

Figure B.5: Education distribution by Parental Real Estate ownership



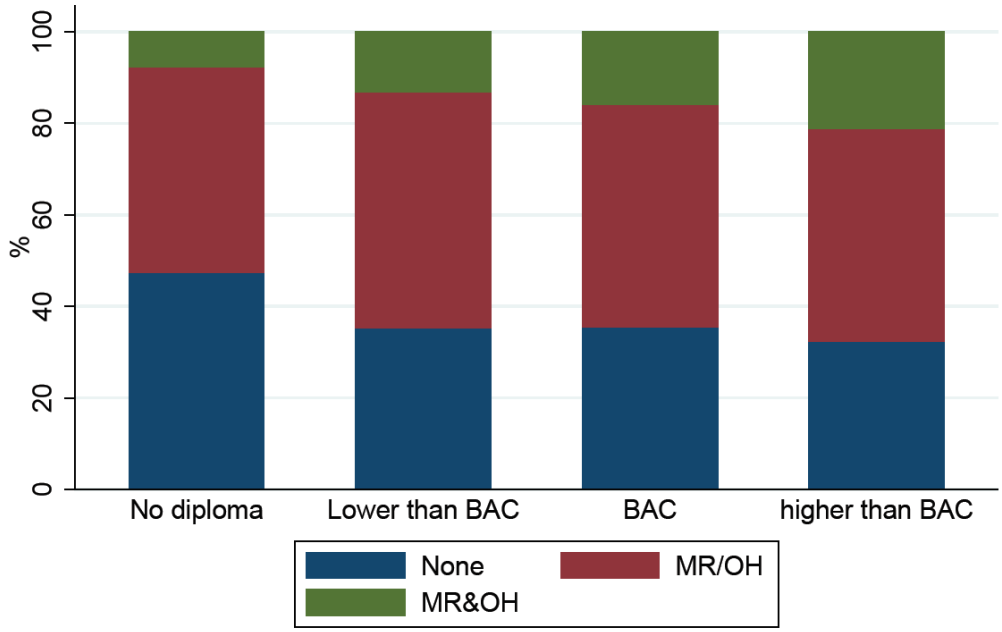
MR = Main Residence. OH = Other Housing. Weighted figures. Households where the reference person is older than 19 years old. Source: Enquête Patrimoine 1986-2015

Figure B.6: Education distribution by Income Decile



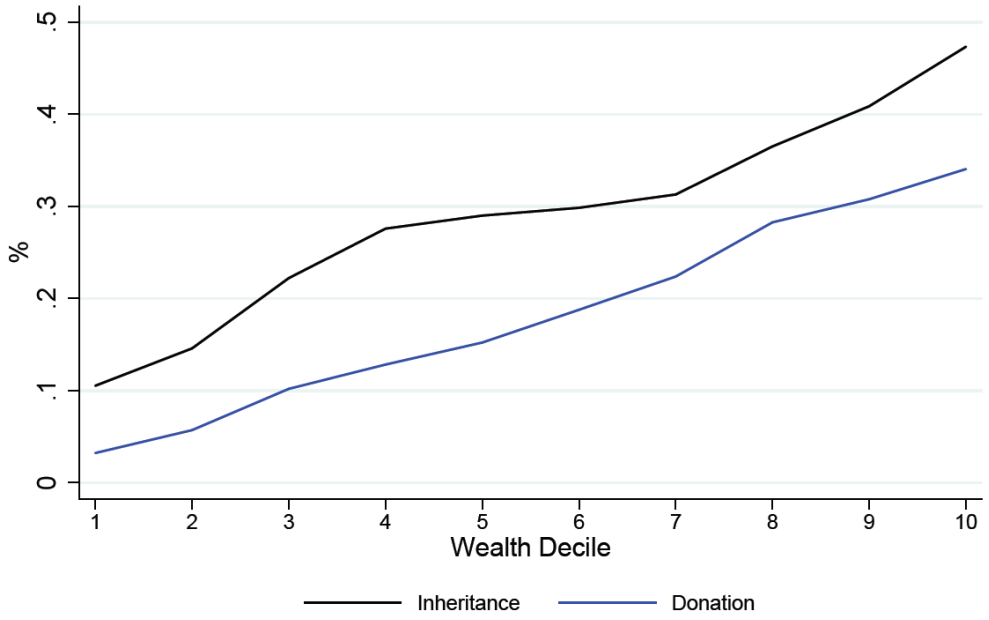
Weighted figures. Households where the reference person is older than 19 years old. Source: Enquête Patrimoine 1986-2015

Figure B.7: Real Estate ownership by Educational attainment



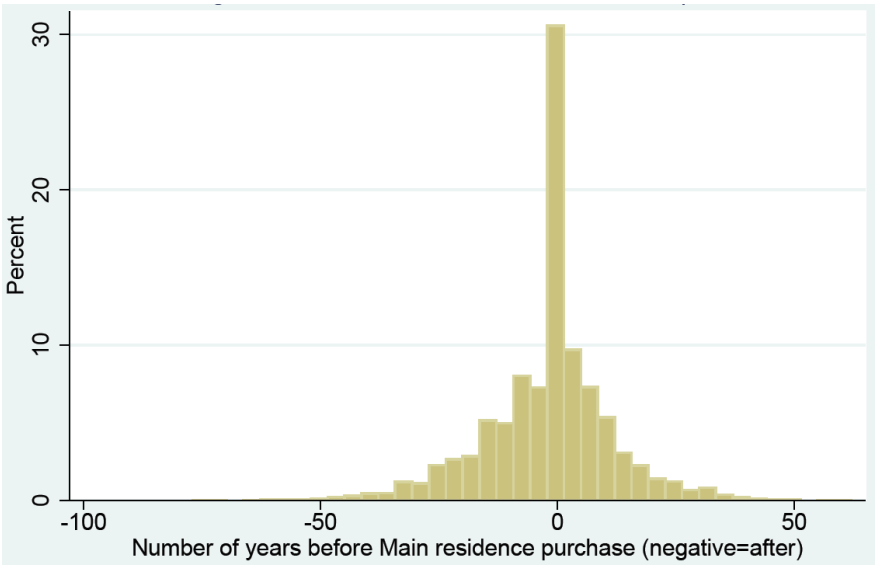
Weighted figures. Households where the reference person is older than 19 years old. Source: Enquête Patrimoine 1986-2015

Figure B.8: % of households that received a financial transfer at survey by Wealth decile



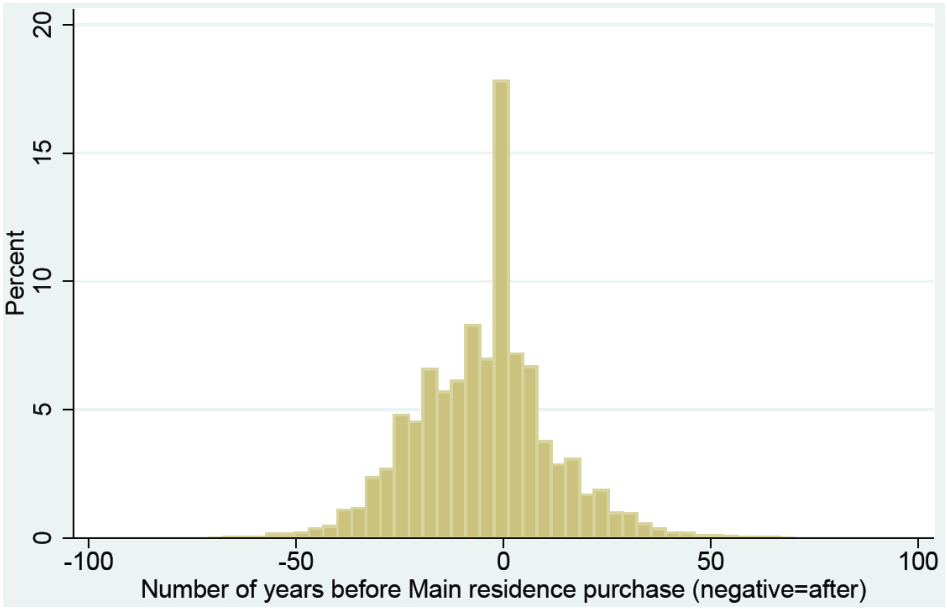
Deciles are computed within survey. Weighted figures. Households where the reference person is older than 19 years old. Source: Enquête Patrimoine 1986-2015

Figure B.9a: Timing between the last donation and main residence purchase



Non-weighted figures. Households where the reference person is older than 19 years old. Source: Enquête Patrimoine 1986-2015

Figure B.9b: Timing between the last inheritance and main residence purchase



Non-weighted figures. Households where the reference person is older than 19 years old. Source: Enquête Patrimoine 1986-2015