The Financial Consequences of Divorce: Implications for Retirement Planning

Rob Alessie
Max Groneck
Raun van Ooijen
Ugne Sliciute
Jeroen van der Vaart

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Design Maan
Lay-out Bladvulling
Editor Frans Kooymans

Table of contents

Affiliations

Rob Alessie – University of Groningen,

Max Groneck – University of Groningen, AJSPH

Raun van Ooijen – University of Groningen, University Medical Center Groningen, AJSPH

Ugne Sliciute – University of Groningen

Jeroen van der Vaart – University of Groningen

Abstract

Divorce has significant economic consequences, particularly for long-term financial stability and retirement readiness. Using administrative data from Statistics Netherlands covering 5 million individuals, this study examines the impact of divorce on household savings, pension wealth, and portfolio composition. Using an event study design and matching methodology, we compare individuals who get divorced with those who remain married but have similar probabilities of divorce . Our results reveal persistent financial impacts, including reductions in homeownership, stock market participation, and savings, with more pronounced effects among women and older individuals. As policy reforms increasingly shift responsibility for retirement planning to individuals, these findings underscore the risks that divorce presents to financial stability and retirement security.

Samenvatting

Dit onderzoek kwantificeert de langetermijngevolgen van echtscheiding voor het huishoudvermogen, de pensioenopbouw en de portefeuille-samenstelling in Nederland, met duidelijke implicaties voor pensioenbeleid en deelnemersvoorlichting. Met administratieve data van het CBS over 5 miljoen personen en robuuste event-study- en matchingmethoden, analyseren wij de causale effecten van een eerste echtscheiding tot zes jaar erna. Wij vinden:

- **Grote en blijvende vermogensverliezen**: In het jaar van scheiding is het totale vermogen van vrouwen gemiddeld 111,600 Euro lager (circa 49% daling) dan bij vergelijkbare getrouwde vrouwen; bij mannen is dit 60,500 Euro (27% daling). De kloof wordt groter in de tijd, vooral voor wie single blijft.
- **Daling pensioenopbouw**: Drie jaar na scheiding daalt bij mannen het jaarlijks opgebouwde pensioen met circa 1,122 Euro (12%), vergelijkbaar met bijna twee jaar eerder met pensioen gaan. Bij vrouwen is het effect verwaarloosbaar door verdelingsregels en databeperkingen.
- **Sterke daling kernbezittingen**: Het eigenwoningbezit daalt met 36 procentpunt voor vrouwen en 16 voor mannen; aandelen- en obligatiebezit daalt met respectievelijk 10 en 6 punten. Ook andere activa nemen af, wat diversificatie en langetermijnrendement kan verminderen.
- **Verschillen naar geslacht en leeftijd**: Effecten zijn groter voor vrouwen en voor scheidingen op latere leeftijd, wanneer het vermogen groter is en de hersteltijd korter.

Deze resultaten tonen dat echtscheiding een cruciale levensgebeurtenis is voor pensioenvoorbereiding, zeker in een stelsel dat overgaat van uitkerings- naar premieregelingen. Blijvende verschillen in vermogen en bezit na scheiding betekenen dat velen — vooral vrouwen en oudere gescheidenen — onvoldoende buffers en lagere pensioenuitkomsten kunnen hebben.

Voor pensioenfondsen kan het meenemen van scheidingsrisico in financieel advies, communicatie en segmentatie de pensioenvoorbereiding verbeteren. Inzicht in deze patronen kan ook helpen bij het afstemmen van beleggingsprofielen onder de nieuwe pensioenwet op de werkelijke financiële draagkracht na scheiding.

Dit onderzoek ligt mede ten grondslag aan de *Pensioenvergelijkingstool* (pilot: https://pensioen.displaymagic.info/), ontwikkeld om proactief pensioengedrag te stimuleren. De tool laat gebruikers hun pensioen en vermogen vergelijken met dat van leeftijdsgenoten en de effecten zien van levensgebeurtenissen zoals scheiding. Zulke toepassingen helpen fondsen bij het geven van gepersonaliseerd, gedragsgericht advies en het beperken van langetermijnpensioenrisico's. Wij zoeken partners om de tool uit te breiden tot een volwaardige versie; Netsparpartners worden uitgenodigd voor samenwerking.

Executive Summary

This study quantifies the long-term financial impact of divorce on household wealth, pension accrual, and portfolio composition in the Netherlands, with clear implications for pension policy and participant guidance. Using administrative data from Statistics Netherlands on 5 million individuals and applying robust event study and matching methods, the analysis isolates the causal effects of first-time divorce up to six years after the event. We find

- **Large and persistent wealth losses**: In the year of divorce, women's total net worth is on average 111,600 Euro lower (about 49% drop) than comparable married women; men's is 60,500 Euro lower (27% drop). The gap widens over time, especially for those remaining single.
- **Pension accrual reductions**: Three years post-divorce, men's annual accrued pension rights fall by about 1,122 Euro (12%), equivalent to claiming nearly two years before the statutory retirement age. For women, the measured effect is negligible due to pension division rules and data limits.
- **Sharp declines in key assets**: Homeownership drops by 36 percentage points for women and 16 for men; stock market participation falls by 10 and 6 points respectively. Losses in other assets reduce portfolio diversification and potential long-term returns.
- **Heterogeneity by gender and age**: Effects are more severe for women and for divorces later in life, when asset bases are larger and time to rebuild wealth is shorter.

These results underline divorce as a critical life event affecting retirement readiness, particularly in a system transitioning from defined benefit to defined contribution arrangements. Persistent post-divorce wealth and asset ownership gaps mean many—especially women and older divorcees—may face inadequate buffers and reduced pension outcomes.

For pension funds, incorporating divorce risk into financial planning advice, communication strategies, and participant segmentation could improve retirement preparedness. Understanding these patterns can also guide tailoring of investment risk profiles under the new pension law to participants' actual post-divorce financial capacity.

This research underpins the *Pension Comparison Tool* (pilot: https://pensioen.displaymagic.info/), developed to nudge proactive retirement planning. The tool lets users compare their pension and wealth to peers and explore the financial impacts of life events like divorce. Such applications can help pension funds provide personalised, behaviourally informed guidance to participants, mitigating long-term retirement risks. We are seeking partners to expand the tool into a full-scale version; Netspar partners are encouraged to contact us.

1 Introduction

The divorce rate in the Netherlands has remained persistently high over the past two decades, with approximately one in three marriages ending in divorce in 2023 (Statistics Netherlands).[1] While recent years have shown a slight decline in this trend, the average age at divorce has steadily risen, now standing at 48 for men and 45 for women. The economic consequences of divorce can be significant: immediate short-term expenses such as legal fees can amount to as much as €4,000 (Hubner & Kabatek, 2024), directly diminishing the couple's wealth. Divorce often requires the sale of the family home—typically the largest household asset—and the division of financial and retirement wealth between two newly formed households. These outcomes raise an important question: to what extent does divorce threatens retirement preparedness?

In this paper, we examine the causal impact of divorce on household savings, pension wealth, and portfolio composition. Using administrative data from Statistics Netherlands, which encompasses 5 million married individuals, we employ an event study design with two-way fixed effects. This approach compares individuals who get divorced with those who remain married but have a similar probability of divorce at event-time. Our findings highlight substantial financial consequences of divorce, which tend to be more pronounced for women and older individuals.

Our study addresses the broader question of how major life events influence retirement savings. Historically, people in the Netherlands, like those in many OECD countries, have relied on robust public pensions and social security systems. Recent policy reforms have, however, shifted greater responsibility for retirement planning to individuals. Notable changes include the transition from defined benefit (DB) to defined contribution (DC) pension schemes and increases in the statutory retirement age (Westerhout et al., 2021). Moreover, demographic trends such as longer life expectancy have increased the demand for longer-term retirement savings. The new Dutch pension system requires providers to tailor investment risk profiles to participants based on their risk-bearing capacity and preferences, directly influencing their pension outcomes. However, many individuals fail to adequately plan for the future (Benartzi & Thaler, 2013). Cognitive biases often lead people to underestimate the likelihood and consequences of significant life events such as divorce, disability, or even mortality, further contributing to insufficient retirement savings (Groneck et al., 2016). This lack of insight into the financial impacts of life events — and individuals' ability to manage such risks — represents a critical gap in understanding that this study aims to address regarding divorces.

We present evidence of both the immediate and medium-term consequences of divorce, extending up to six years post-divorce. Our analysis examines a range of outcomes, including homeownership, mortgage ownership, stock market participation, savings, net

1 See https://www.cbs.nl/en-gb/figures/detail/37425eng

worth, and pension wealth. To identify the causal effects of divorce on financial resources, we employ an event study design that controls for individual and time-fixed effects, accounting for both selection into divorce and time-specific factors that affect the value of marriage (e.g., economic recessions or policy reforms). We also use a matching technique to account for observable differences between individuals who divorce and those who remain married. By estimating divorce probabilities and pairing divorced individuals with married counterparts who have the same probabilities at the time of the event, we ensure a robust comparative framework.

Our findings highlight the substantial and enduring financial effects of divorce, particularly for women. The financial gap increases over time, affecting future wealth accumulation in housing, pensions, and other assets for those who remain single. In the year they divorce, women's total net worth is about 111,600 euros lower – roughly a 49 percent gap – than that of women who remain married. For men the difference is 60,500 euros, or 27 percent. Annual entitlements of pension wealth fall by less, accumulating to a 1,100 euro decline three years after divorce, or 12 percent, relative to those who stay married for men, while women experience virtually no change.

A divorce also affects the composition of the portfolio. Homeownership rates decline sharply, by 16 percentage points for men and 36 for women, one year after a divorce. Stock market participation declines significantly by 10 percentage points for women and 6 percentage points for men. Notably, most financial losses and declines in ownership, stay consistently lower after divorce and do not recover over time. This trend underscores the importance of making divorce part of pension planning, particularly for those divorcing later in life but before retirement age, which is a growing number.

Our study contributes to the literature on the economic consequences of divorce in three key ways. First, we employ advanced methodologies to identify causal effects, addressing the limitations of previous studies. Our framework is also applicable for studying other significant life events that affect retirement preparedness, including job loss and health issues. Second, our longitudinal dataset provides insights into longer-term outcomes and heterogeneity across gender and age. Third, we examine a comprehensive range of financial outcomes, including pension wealth.

The remainder of the paper is structured as follows: Section 2 describes related literature, section 3 the institutional context, section 4 the Data, section 5 the Methods, section 6 descriptive statistics, section 7 the results, and section 8 concludes the study.

2 Related Literature

Research on the financial consequences of divorce has three main findings: (1) significant effects on wealth, homeownership, pensions, and assets, both short and long-term; (2) disproportionate financial consequences for women; and (3) varying effects by age, although causal evidence on age-related consequences remains limited, particularly those related to retirement preparedness.

Divorce has well-documented impacts on both ex-partners and their children, ranging from psychosocial challenges (e.g., anxiety, loss of support systems) to changes in living conditions and economic circumstances, such as selling the family home, repartnering, and adjustments in labor supply (Amato, 2000; Leopold, 2018). The effects can persist in the long term, influencing household wealth accumulation, financial portfolios, and retirement security (Schmauk, 2024; Ulker, 2009).

Previous research suggests that divorce leads to substantial changes in wealth, income, homeownership, and asset portfolios. Goda and Streeter (2021) find an 83 percent long-run decline in wealth following a divorce compared to levels one to two years before divorce. Previous studies have documented a large variation in how divorce affects income, ranging from an increase of approximately 5 percent among Australian men six years after divorce to a decrease of 51 percent among black women in the United States in the year following divorce (De Vaus et al., 2017; Mortelmans, 2020; Smock, 1993). Homeownership tends to decrease drastically following a divorce, with Dewilde and Stier (2014) finding that experiencing divorce or separation is associated with a significantly lower likelihood of being a homeowner in later life. However, the consequences of divorce on household asset portfolio composition is less clear, with divorce being associated with a reduction in stock market participation rates among men but an increase among women (Christiansen et al., 2015).

A consistent finding in the literature is the pronounced gender gap in the financial consequences of divorce. Women are more likely to become poor and lose a larger proportion of their income and wealth relative to men after a divorce (Aassve et al. (2007), Goda and Streeter (2021), Sharma (2015), and Zagorsky (2005), among others). This pattern is observed in multiple countries and over a range of time periods.

There has been less focus on the financial effects of divorce at different ages, and existing studies frequently depend on observational comparisons rather than causal methods. A growing body of research examines 'gray divorce' (divorce later in life), with findings that sometimes contrast with those of studies that do not take age differences into account. For example, Zilincikova and Schnor (2021) use Belgian register data to show that older women are more likely than their ex-partners to retain the marital home after divorce, a finding that contrasts with other studies suggesting that women, on average, face greater reductions in homeownership (Feijten, 2005; Herbers et al., 2014).

There have been few studies on the impact of divorce on retirement readiness, generally finding negative financial consequences. Munnell et al. (2018) find that divorce reduces retirement preparedness by 7 percent, while Zissimopoulos et al. (2015) highlight Social Security as a mitigating factor for wealth disparities between married and divorced individuals in the United States. Interestingly, gender differences in the consequences of divorce on retirement preparedness seem to contrast with the financial consequences of divorce in general. For example, Yabiku (2000) finds a significant positive association between divorce and the odds of private pension receipt for women but a negative one for men. Similarly, Schmauk and Kridahl (2024) report that in Sweden, divorced and married women receive comparable pension benefits, whereas divorced men receive 26 percent less pension income than married men. In West Germany, divorced women even receive higher pensions than married women.

A key limitation of prior research is the reliance on mean comparisons between married and divorced individuals without accounting for pre-existing differences in wealth, homeownership, and demographics that influence both financial status and divorce risk (Killewald et al., 2023; Lafortune & Low, 2023; Lyngstad & Jalovaara, 2010). Our study enhances the literature by employing causal methods to address these biases and by providing a detailed understanding of the age-specific consequences of divorce on financial preparedness for retirement, which, to our knowledge, has not previously been examined.

3 The Institutional Context

The legal consequences of divorce in the Netherlands vary based on the the couple's legal status and their marital property regime. We consider two types of formal couples, who we refer to as "married" in this paper. The first type is marriage (*trouwen*), where the partners involved must say "yes" at the marriage ceremony and, in the event of divorce, court proceedings are required. The second type we examine is a civil partnership, (*geregistreerd partnerschap*) which was first introduced in 1998. In a civil partnership, the partners are not required to say "yes", and court proceedings for divorce are only deemed necessary if the divorcees have children under the age of 18 at the time of the divorce. In most other circumstances, marriages and civil partnerships are legally equivalent. This includes matters related to the division of marital property and parental authority over children. Both marriage and civil partnership are distinct from a cohabitation contract, which does not automatically establish rules on property division and legal rights and obligations upon its formation.

Marriages and civil partnerships are inherently governed by the same marital property regimes when the couple is formalized. Until 2018, couples were subject to a default arrangement of general community of property (*algemene gemeenschap van goederen*). Under this regime, all existing and future assets and debts are jointly owned by both partners. This also includes inheritances, inter-vivo transfers, and entrepreneurial assets or debt. Since 2018, the default regime has changed to a limited community of property (*beperkte gemeenschap van goederen*), where only the assets and debts that were obtained jointly before the union and future assets and debts are split 50%–50% upon divorce, excluding any inheritances and inter-vivo gifts. We observe marriages and civil partnerships under both regimes. If partners wish to choose a different property division regime, they must arrange a prenuptial agreement or partnership agreement with a notary (*huwelijkse voorwaarden of partnerschapsvoorwaarden*).

Pension wealth is by default divided upon divorce under the principle of equalization (*Wet verevening pensioenrechten bij scheiding*).[2] Under this regime, half of each individual's pension wealth accumulated throughout the marriage is allocated to their divorced partner. This also holds for the entirety of the capital-based survivor's pension.[3] This pension amount is only paid to the ex-partner when the individual retires or upon early death. If the ex-partner dies, the old-age pension wealth is added back to the individual's pension entitlements, and the survivor's pension is added back if permitted by the pension

2 From 2028 onward, conversion is expected to be the new default option for the division of pension wealth upon divorce.

3 The survivor's pension in a pension arrangement can be structured based on either a capital approach (*opbouwbasis*) or a risk-based approach (*risicobasis*). If the pension arrangement is risk-based, it expires upon divorce, meaning that the ex-partner does not receive any benefits after the death of their ex-spouse. Under the capital-based approach, pension wealth is built up which does not expire in the case of divorce. Since we focus on pension wealth in our analysis, we only consider survivors' pensions built up under the capital-based approach.

administrator's rules. An alternative to the default is to choose an uneven split or to opt for conversion. Under conversion, a portion of the individual's old-age pension and the survivor's pension accrued during marriage is converted into an independent old-age pension for the ex-partner, thus linking benefit claims to the ex-partner's retirement age. Any alternative arrangements, such as prenuptial agreements, must be reported to the pension administrator by the ex-partners within two years of the legal date of divorce; otherwise, the default in the pension administration is definitive.

4 Data

We use administrative data from several registers available from Statistics Netherlands (Centraal Bureau voor de Statistiek). The data include longitudinal information on household assets and income (2005-2021), provided by the tax authorities, and individual pension accruals (2016-2021) from the pension funds. Information regarding marital status, household composition, and demographic characteristics is derived from the population register (GBA), which is combined with the income and asset data.

We limit our study population to individuals born in the Netherlands between 1955 and 2000. They are left out of our study population once they reach the age of 65. Our analysis excludes all individuals who married before the age of 18. People who have ever migrated (i.e., who have had an address outside the Netherlands) are also removed, as their changes in marital status could not be observed while they lived abroad. We further limit our analysis to individuals who have exclusively married people of the opposite sex and were also born in the Netherlands. Lastly, we exclude a few individuals with missing household assets and income.[4]

4.1 Event data

Our data distinguish five marital statuses, which are assessed on a daily basis: marriage, registered partnership, being divorced, widowhood, or being single (without any prior marriage or registered partnership). We define a dummy variable, *is married*, to indicate that an individual is either in a marriage or registered partnership, which we combine due to their similar legal statuses. Unfortunately, the chosen marital property regime has not been reported. Divorce and widowhood occur after the legal end date of *being married*. A unique aspect of our marital status data is that these are available from birth onward, allowing us to distinguish between first-time divorce, second-time divorce, etc. Starting in 1995, the data also report whether a single, divorced, or widowed individual cohabits on a contractual basis. Due to its distinct legal status, we do not consider ending a cohabitation to be a divorce; instead we use cohabitation status as a covariate in our analyses.

The event we study is first-time divorce: a status change from having a partner for the first time to being divorced. We do not consider second or third divorces to be an event, as these involve a specific subpopulation of relatively older individuals who may remarry for particular (unobserved) reasons and then divorce again.

To examine the anticipatory and mid-run impact of the event on the outcome, we select a minimum time before divorce and a maximum time after divorce during which we observe the outcome. For asset outcomes, we choose an event time window spanning from four years prior to divorce to six years afterward. Those data are available from 2005 to 2021, meaning

4 Applying these filters reduces our sample by 28 percent. This was done to ensure that the entire asset and marital histories are visible for all individuals in our analysis.

that we include divorces between 2009 and 2015. While we could have sampled divorces after 2015, we chose not to do so to have a sample that is observed at each event time, i.e., the sample is balanced in event times. For pension wealth, we restrict the window from one year before up to three years after divorce, as these data are only available for the years 2016 to 2021. This means that for pension wealth, divorces in 2017 and 2018 are sampled. We observe 228,610 divorces from 2009-2015 and 68,110 divorces from 2017-2018.

We analyze how a divorcee's outcomes evolve differently from what they would have been in a counterfactual situation had they remained married. Since the counterfactual outcomes for divorcees (the treatment group) cannot be directly observed, we construct these outcomes using individuals who are married for the first time and remain so during the same period (the control group). For a specific year of divorce, such as 2009, we select individuals who were married that year and remained married until the end of the study, i.e., December 31, 2021. Following the same procedure for other divorce years, we have 14,801,756 observations of couples who remained married during the divorce years 2009–2015 for the asset analysis, and 5,053,281 observations who remained married during the divorce years 2017-2018 for the pension analysis. Note that the observation counts include individuals who may be counted multiple times, as they can meet the sample criteria in multiple years.

4.2 Outcomes

We have data on the end-of-year values of households' assets and debt items for the outcomes. The composite wealth measure we examine is net worth, which is defined as the total value of all assets minus the total value of all debts. Furthermore, we have data on the separate categories that each household's assets and debt consist of: the value of the owner-occupied house, other real estate, stocks and bonds, checking and savings accounts, entrepreneurial wealth, other assets such as cash-in-hand and loans to family members, a mortgage for the owner-occupied house, and other debt[5] such as a mortgage for a second house or consumption credit. We analyze both the ownership rate (extensive margin) and level outcome (which combines the extensive and intensive margins) for the asset categories.

We apply top-coding to asset values to prevent outliers (such as excessively wealthy individuals) from skewing the estimation results. For each asset category, we examine the distribution (including both those who get divorced and those who remain married) at the intensive margin and exclude individuals who fall into the top two percent of that category at least once during the event time window. To prevent a situation in which macroeconomic trends rather than divorce shocks explain our results, we deflate stocks and bonds using the end-of-year index of the Dutch Stock Exchange (AEX).[6] The values of the owner-occupied

5 Until 2011 this also included study debt.

6 We deflate both stocks and bonds using the AEX because we only know the total amount invested in securities and cannot identify the exact proportions invested in stocks or bonds. Consequently, the bonds cannot be deflated separately.

house and other real estate are deflated using a housing price index based on the trend in average house prices in the administrative data. All other types of assets and debts are adjusted for inflation using the Dutch consumer price index (reference year: 2023).

It is important to note that our measures of assets and debt are at the household level and we do not equivalize values. This enables us to capture the level effects resulting from asset division upon divorce or repartnering after divorce. It also means, however, that the effect of divorce is a mechanical effect resulting from the division of household assets between both partners after divorce.

Our final outcome pertains to the gross annual amount of the old-age second-pillar pension. We do not take into account survivors' pension entitlements. Our pension measure is the amount accrued at different funds on a reference date in each of the years 2016–2021 (as reported on *www.mijnpensioenoverzicht.nl*). We aggregate entitlements from different funds into a single benefit. The benefit is annuitized, representing an annual entitlement that has accrued up to the current year.

The raw data separately reports future claims for ex-partners and individual entitlements for most individuals. However, in many cases, accrued entitlements have already been adjusted for ex-partner claims, so we do not see the exact reduction separately. Therefore we cannot include this amount in the ex-partner's entitlements. Consequently, the accrued pension claims we analyze only account for the negative amounts deducted and transferred to the ex-partner, while the positive impact of receiving pension wealth from an ex-partner is not reflected in our outcome variable. As a result, our study focuses solely on the negative impact on pension wealth. Additionally, we apply top-coding to the pension wealth variables just as we do for the assets and debt categories.

The timing of the measurement requires special attention here. Unlike asset values, which are assessed at the year-end, the measurement date of pension wealth may occur prior to the divorce date within the year of divorce. As a result, the effects of divorce may not be fully reflected in the year of divorce but rather in the following year. Furthermore, individuals have up to two years to report the divorce to their pension fund, which means that the effects of divorce may not be immediately visible. Therefore, in the results, we focus on the change in pension wealth three years after divorce, when the effects of divorce have stabilized.

Lastly, for the analysis we will develop a prediction model for divorce using a range of covariates related to socio-demographics and socio-economic status. The list includes: gender, individual age, household average age, individual year of birth and the household's average year of birth, main sources of income for individuals and households, and the number of legal and cohabiting children.

5 Methods

We analyze how divorcees' outcomes (the treatment group) evolve differently from their counterfactual situation had they remained married (the control group). The main methodological challenge lies in the fact that divorce is not a random event. Therefore, a straightforward outcome regression with a divorce dummy cannot yield causal interpretations, as the dummy variable captures not only the effect of divorce but also any omitted determinants of divorce, such as socioeconomic status (SES).[7]

To address this issue, we employ a two-step, doubly robust method to ensure comparability between the treatment and control groups and identify the causal effect of divorce (see, e.g.: Sant'Anna and Zhao, 2020; Arkhangelsky and Imbens, 2022). In the first step, we match each treated individual with a control individual who has a similar probability of divorce based on baseline characteristics. In the second step, we estimate a two-way fixed effects (TWFE) model on the matched sample, allowing us to isolate the causal effect of divorce from any remaining individual and time-fixed effects.[8]

5.1 Propensity Score Matching

We analyze the evolution of assets from four years before ($j = -4$) to six years after divorce ($j = 6$), where j denotes the number of years relative to the divorce event. Assume a treated individual gets divorced in calendar year $\overline{t_i} = t$, where $t \in \{2009, ..., 2015\}$. This individual is matched one-to-one (with replacement) with a counterpart who remains married throughout the study period, indicating that $\overline{t_i} = \infty$ for the control individual. Matching is based on the ex-ante probability of divorcing in year t, conditioned on characteristics observed in $t - 4$. To estimate the divorce probability, we fit the following probit model:

$$\mathbb{P}(\mathbb{1}(\bar{t}_i = t) \mid \boldsymbol{x}_{i,t-4}) = \Phi(\mu + \alpha_t + \boldsymbol{x}'_{i,t-4}\boldsymbol{\beta}), \text{ with } t \in \{2009, ..., 2015\}, \text{ and } \bar{t}_i \in \{2009, ..., 2015, \infty\}, \quad (1)$$

where $\mathbb{1}(\bar{t}_i = t)$ indicates whether individual i belongs to the treatment or control group in year t. μ is the intercept. The term α_t reflects annual trends in divorce rates. The vector of lagged predictors $\boldsymbol{x}_{i,t-4}$ includes gender, marital and cohabitation status, marital duration, age and birth year of both the individual and their spouse, the presence and number of children, net worth and equivalized household income percentile (adjusted for age, year, and gender), primary income sources for the individual and household, the extensive margins of various asset types, and the municipality of residence. $\boldsymbol{\beta}$ signifies the impact of these predictors on the probability of divorce. The estimate $\hat{\boldsymbol{\beta}}$ is used to predict the probability of divorce for each sampled individual.

7 This aligns with prior research documenting significant correlations between individual characteristics and divorce risk. See, for example, Kalmijn and Poortman (2006), Killewald et al. (2023), Lafortune and Low (2023), and Lyngstad and Jalovaara (2010).

8 The model is termed doubly robust as the estimand has a causal interpretation if either the outcome model is correctly specified, or the matching model is correctly specified (or both).

We use a nearest-neighbor matching algorithm to pair each divorced individual with a married counterpart based on their propensity score $\hat{\mathbb{P}}(\mathbb{1}(\bar{t}_i = t) \mid \boldsymbol{x}_{i,t-4})$, i.e., the predicted probability of divorce. Successful matching requires a common support of propensity scores for the two groups, which we test in the next section. Exact matching is performed on net worth percentiles, divorce year, and gender categories, while allowing for differences in other covariates. Exact matching on net worth percentiles ensures that baseline outcomes $y_{i,t-4}$ are comparable between the two groups. Additionally, individual age is included as a precise predictor in heterogeneity analyses to ensure comparability across ages.

The procedure is repeated for pension wealth variables with slight modifications. In this case, the event window ranges from $j = -1$ to $j = 3$, with $t \in \{2017, 2018\}$ and $\bar{t}_i \in \{2017, 2018, \infty\}$. The divorce probability is predicted using a one-year lag in covariates, i.e., $\boldsymbol{x}_{i,t-1}$.

5.2 Model Specification

We are primarily interested in identifying the differences in outcomes for divorced individuals compared to their married counterparts, focusing on the gains or losses attributable to divorce. To illustrate, consider a two-period scenario in which individual D divorces in period 2, while individual M remains married. The realized outcome sequences for D and M are $\{y_1^{(D)}, y_2^{(D)}\}$ and $\{y_1^{(M)}, y_2^{(M)}\}$, respectively. The outcome change for D is $\Delta_D = y_2^{(D)} - y_1^{(D)}$, and for M, it is $\Delta_M = y_2^{(M)} - y_1^{(M)}$. The effect of divorce is given by $\gamma = \Delta_D - \Delta_M = \left(y_2^{(D)} - y_1^{(D)}\right) - \left(y_2^{(M)} - y_1^{(M)}\right)$, which accounts for Δ_M, the time difference irrespective of divorce. Alternatively, γ can be expressed as $\left(y_2^{(D)} - y_2^{(M)}\right) - \left(y_1^{(D)} - y_1^{(M)}\right)$, emphasizing the difference in outcomes due to divorce while adjusting for baseline differences $\left(y_1^{(D)} - y_1^{(M)}\right)$.

In a multi-period framework, the model is defined as a two-way fixed effects (TWFE) model:

$$y_{it} = \sum_{j \in \{-3,\ldots,6\}} \gamma_j \cdot \mathbb{1}(\bar{t}_i = t - j) + \alpha_i + \delta_t + \epsilon_{it}, \text{ with } t \in \{2005, ..., 2021\}, \text{ and } \bar{t}_i \in \{2009, ..., 2015, \infty\}$$

where α_i represents individual fixed effects, capturing selection into divorce, and δ_t accounts for time-fixed effects, reflecting factors such as economic conditions and policy changes. t has a wider range than in model (1) because we not only look at the year of divorce, but the whole surrounding period. The advantage of using t to account for calendar year-specific trends is that it effectively captures common factors affecting individuals in the same calendar year, irrespective of their proximity to divorce. The term $\mathbb{1}(\bar{t}_i = t - j)$ is a dummy variable that indicates whether the individual belongs to the treatment or control group in year $t - j$ and is j years from divorce. The coefficients γ_j measure the causal effect of divorce on the outcome in j years from divorce, with $j = -4$ serving as the reference period.

ϵ_{it} is an idiosyncratic error term.

This approach relies on several assumptions. First, divorced individuals and their married counterparts share a common time trend δ_t, whereas otherwise, time and event-time events cannot be separated. Therefore, the average outcomes of divorced individuals and their married counterparts should have been similar had there been no divorce. Second, there should be no expectation of the divorce, at least during the first period of the event window ($j = -4$ to $j = -3$). Hence, outcomes move in parallel until some $j > -4$, preferably $j = 0$, the point of legal divorce. However, there is likely anticipation in our setting, as couples can already live apart and divide property before the legal date. For most asset outcomes, we observe a parallel trend until $j = -3$, suggesting a causal interpretation. Third, the effects of the divorce should be the same regardless of the year in which divorce occurs (Callaway and Sant'Anna, 2021). This assumption is challenged by the change in default marital property for new marriages starting in 2018 (which is also our final year of divorce), but this is unlikely to significantly impact our results, as only the small number of individuals both marrying and divorcing in 2018 would create issues. The final assumption is that married individuals remain married after the end of the study in 2022.

Standard errors are computed parametrically using the formula for linear panel models with fixed effects, and they are clustered at the (pseudo-)individual level. Strictly speaking, standard errors must be bootstrapped to take the non-parametric matching from the first-step into account. However, we stick to parametric estimates, because large sample sizes lead to small standard errors anyway and large sample sizes lead to a very heavy computation burden in the case of bootstrapping.

We repeat the fixed effects regression for pension wealth ($j \in \{-1, ..., 3\}$, $\overline{t}_i \in \{2016, 2018, \infty\}$ and $t \in \{2016, .., 2021\}$). We construct the results separately for men and women. In a heterogeneity analysis we further condition the second-step TWFE results on age at baseline ($j = -1$ or $j = -4$): 25-29, 30-34, 35-39, 40-44, 45-49, and 50-54.

6 Descriptive Statistics

6.1 Prevalence of Divorce for the 1955 Cohort

Table 1 presents transition rates between marital states, focusing on a cohort born in 1955, for whom we can observe the full life cycle up to age 65.[9] It indicates that divorces are quantitatively important. The table shows that 89 percent of individuals in this cohort marry or enter a registered partnership by age 65, a status which we both define as *being married*. Among those who marry, 26 percent file for divorce by age 65, indicating that over a quarter experience divorce. Of those who get divorced, just over half remarry, while 43 percent remain single until the age of 65. While our analysis focuses on first divorces, it is noteworthy that even among those who enter a second time being married, a significant 31 percent experience a second divorce.[10] These figures highlight the substantial prevalence of divorce, even in this older cohort.

Table 1: Marital Transitions Cohort 1955

To:	Divorce	Married	Same State until 65	Widowhood	Death	Share
From:						
Single since birth	XX	0.89	0.09	XX	0.02	1.00
Married:						
First time	0.26	XX	0.62	0.07	0.05	0.88
Second time	0.31	XX	0.57	0.07	0.06	0.11
Third time	0.33	XX	0.55	0.05	0.07	0.01
Sum						1.00
Single after divorce						
First time	XX	0.52	0.43	XX	0.06	0.85
Second time	XX	0.40	0.52	XX	0.08	0.13
Third time	XX	0.35	0.56	XX	0.08	0.02
Sum						1.00
Observations						194,779

The 1955 cohort was observed until the age of 65, so we have 'complete' life histories. Share:= relative number of individuals with multiple spells.

The left panel of Figure 1 illustrates the prevalence of divorce across ages for the 1955 cohort. The age-specific divorce probabilities exhibit a bimodal distribution, with peaks at approximately the ages of 30 and 45. The figure notably shows a high prevalence of divorce, especially among individuals between the ages of 45 and 55. As discussed later, the financial consequences of divorce are considerably more pronounced for those aged 45 and older.

The right panel of Figure 1 displays the probability distribution of the duration of being married at the time of first divorce. The figure shows that half of married individuals divorce within 13 years, indicating a significant proportion (50 percent) who experience divorce after

9 In our effect analysis, we include all cohorts meeting the sample selection criteria outlined in Section 4.

10 This proportion remains similar for third divorces.

more than 13 years. Longer durations before divorce typically lead to greater joint asset accumulation, resulting in more significant financial consequences if a divorce occurs.

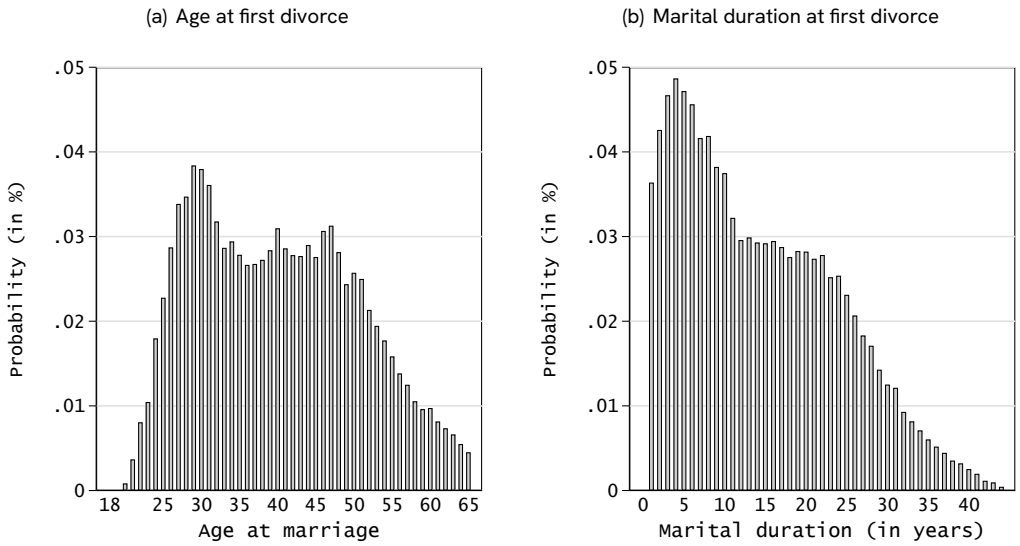


Figure 1: Distribution of the age and marital duration at first divorce, cohort born in 1955

6.2 Observable Characteristics for Married and Divorced Individuals

Table 2 provides descriptive statistics for key observable characteristics by marital status and gender for the whole sample. Comparing columns (1) and (2) for men and columns (4) and (5) for women reveals significant differences between divorced and married/partnered individuals. Divorced individuals typically have lower incomes and fewer assets than their married counterparts and are less likely to own a home. They are also somewhat younger, have fewer children, and on average have shorter marital durations than those who remain married.

6.3 Quality of the Matching Procedure

The substantial differences over marital status displayed in Table 2, particularly in financial resources, underscore the importance of our matching procedure. As detailed in Section 5, we employ a probit model to estimate the determinants of divorce; see Table A4 in the Appendix. The predicted probabilities of divorce serve as propensity scores for the matching procedure. Figure A1 in the Appendix shows that the common overlap assumption underlying the propensity score matching is met. The matching is highly effective based on observable characteristics, particularly due to our large sample sizes. Results are reported in Table A1 and A3 in the Appendix in demonstrates that, after matching, the averages of critical observable characteristics align closely between divorced and married individuals.

Table 2: Descriptive Statistics

	Men		Women	
	Divorces	Stays married	Divorces	Stays married
Marital status				
Unmarried = 1	0.04	0.05	0.04	0.05
Marriage = 1	0.86	0.85	0.87	0.86
Registered partnership = 1	0.03	0.02	0.03	0.01
Cohabiting = 1	0.07	0.08	0.07	0.08
Marital duration (cond.)	11.15	13.25	11.82	14.58
Has children = 1	0.78	0.77	0.80	0.79
Number of children (cond.)	2.01	2.13	2.03	2.16
Age				
16-24	0.04	0.03	0.08	0.06
25-29	0.10	0.09	0.12	0.10
30-34	0.15	0.14	0.17	0.14
35-39	0.23	0.19	0.23	0.19
40-44	0.25	0.24	0.22	0.22
45-49	0.19	0.24	0.15	0.22
50-54	0.04	0.08	0.03	0.07
Year of birth				
1955-1959	0.06	0.10	0.04	0.09
1960-1969	0.46	0.49	0.40	0.46
1970-1979	0.35	0.30	0.38	0.31
1980-1989	0.12	0.10	0.17	0.14
1990-1996	0.00	0.00	0.01	0.01
Equivalised household income (median, 000 euros)	31.15	33.29	31.02	33.59
Net worth (median, 000 euros)	167.21	254.25	171.11	268.03
Savings (median, 000 euros)	14.39	24.79	14.46	25.51
Asset ownership:				
Has own house = 1	0.82	0.86	0.81	0.86
Has stocks and bonds = 1	0.27	0.31	0.26	0.31
Has other debt = 1	0.25	0.23	0.26	0.23
Has mortgage = 1	0.80	0.83	0.78	0.82
Has entrepreneurial wealth = 1	0.16	0.17	0.17	0.16
Main source of personal income				
Employee = 1	0.80	0.81	0.73	0.72
Self-employed = 1	0.15	0.16	0.10	0.11
Social insurance = 1	0.03	0.02	0.06	0.04
Retiree = 1	0.00	0.00	0.00	0.00
Student = 1	0.01	0.01	0.03	0.03
No income = 1	0.00	0.00	0.07	0.10
Individuals	107,471	6,955,660	121,139	7,846,096

Descriptive statistics on gender, divorced and the unmatched married sample of divorces in 2009-2015. See Table A2 in the Appendix for the descriptive statistics for the divorces in 2017-2018. All statistics are computed at $t-4$, i.e. four years before the year of divorce. The number of children and marital duration are conditional upon having children and being married, respectively. Married counts include repeated observations because these individuals can serve as potential matches for distinct years of divorce.

7 Results

In this section, we present results regarding the impact of divorce on various outcome variables. The first part presents descriptive results for the prevalence of divorce and for key observable characteristics by marital status and gender, which serve as propensity scores for the matching procedure that we discuss in terms of quality. The second part presents results regarding the impact of divorce on several outcome variables. First, we examine the socio-demographic consequences, concentrating on patterns of repartnering after divorce and custody arrangements for children. Second, we assess the financial consequences of divorce, focusing on two key aggregate asset variables: total net worth and pension wealth. Finally, we evaluate the impact of divorce on asset portfolio diversification by analyzing ownership patterns across various asset types, including homeownership, stock market participation, other real estate, and business assets.

Our results are presented in two formats. First, we report pre- and post-divorce averages for divorced individuals, covering a period from four years before divorce to six years after. These averages are compared to those of matched individuals who remained married at event time $t = 0$. This comparison allows us to observe the profiles of the outcome variables over time before and after divorce. The differences in the trajectories of divorced and married individuals provide an initial approximation of the impact of divorce. Second, we present results from a two-way fixed effects model, which allows for causal interpretation. This approach highlights the differences between divorced individuals (the treated group) and their married counterparts (the control group) over time, both prior to and following divorce. By incorporating individual and time-fixed effects, this model estimates the causal effect of divorce while controlling for unobserved individual heterogeneity and time-specific factors.

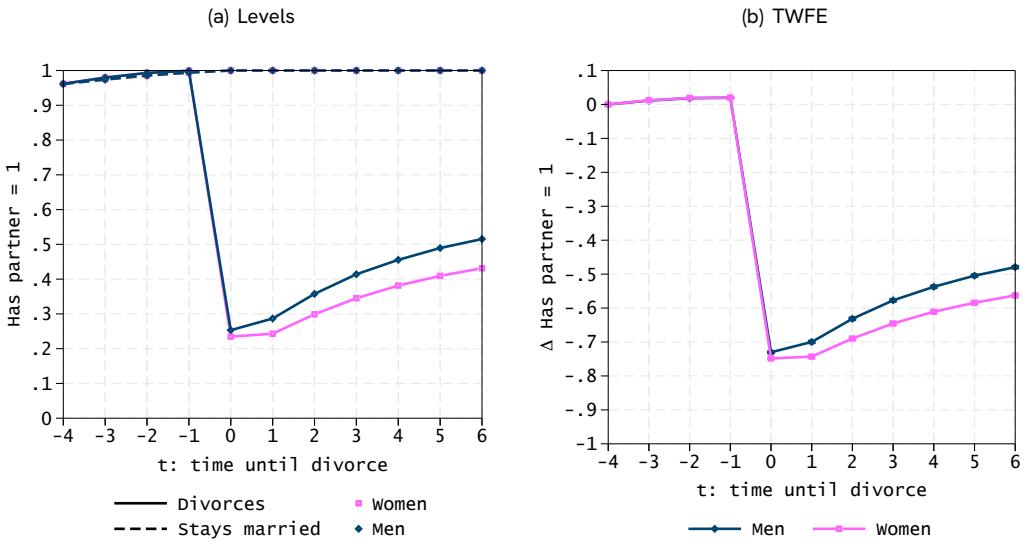
When interpreting the following results, two patterns are worth noting. First, the consequences of a divorce often begin a few periods (most often around in $t - 2$) before the actual divorce happens. This is evident in the diverging pattern of divorcees compared to married individuals even before event-time $t = 0$. This is not surprising, as a legal divorce often marks the conclusion of a process of separation that may have lasted several years. Second, the results from comparing the average age profiles (upper panels) and the differences depicted by the two-way fixed-effect model (lower panels) are remarkably similar. This suggests that matching based on observable characteristics from four periods preceding event time already controls for much of the heterogeneity between married and divorced individuals, whereas accounting for individual and time-fixed effects does not significantly alter the results.

7.1 Socio-Demographic Effects

Figure 2 shows the effect of a divorce on repartnering, indicating a strong drop at the time of divorce in the prevalence of having a partner. These numbers indicate that 23 percent of

women and 25 percent of men enter new partnerships within the same year as their divorce. The proportion of divorced individuals who enter new partnerships steadily increases thereafter. Six years after the divorce, approximately 51 percent of male divorcees and 43 percent of female divorcees are remarried or in a partnership.

Figure 2: Effect of a divorce on re-partnering

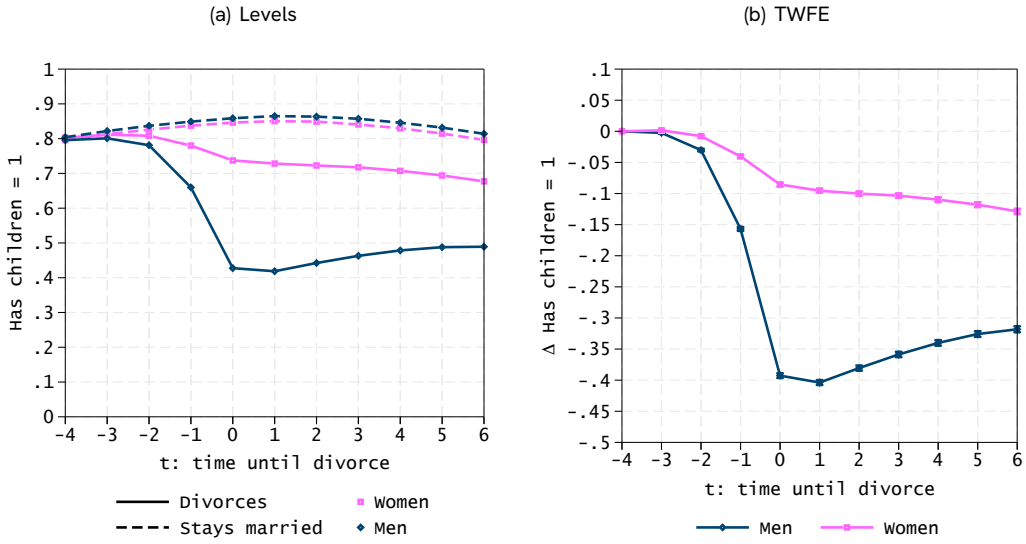


Notes: This figure shows the estimated effects of divorce on having a partner. Panel (a) contains the descriptive group means for the proportion of married and divorced men and women who have a partner. Panel (b) contains the TWFE estimates of the effect of divorce at $t = 0$ on having a partner for men and for women separately. Note that not everyone is partnered between $t = -4$ and $t = 0$ as some people may have only gotten married one to four years before $t = 0$.

Figure 3 shows the fraction of individuals having children living in their household before and after divorce. The figure shows that the proportion of households with a child at home decreases for both genders following a divorce. However, the decline is much larger for men – 40 percentage points – compared to 10 percentage points for women one year after the divorce. Diverse patterns related to gender emerge in the years following the divorce. While men increasingly live in households with children – a 10 percentage point increase six years after the divorce – we observe a slight decrease in the proportion of women who live in households with children after the divorce. This decreasing pattern could be related to the fact that children move in with their fathers or the tendency for children to become older and leave the house more quickly than in married households.

The age-specific (two-way fixed) effects of divorce are shown in Figure 4. The upper panels (a) and (b) show how young individuals are much more likely to repartner. Although the initial drop is around 70 percentage points, there is a recovery of around 30 to 40

Figure 3: Has Children living in Household



Notes: This figure shows the estimated effects of divorce on having children living in the household. Panel (a) contains the descriptive group means for the proportion of married and divorced men and women who have children living in their household. Panel (b) contains the TWFE estimates of the effect of divorce at $t = 0$ on having children living in the household for men and for women separately.

percentage points six years after the divorce. In the oldest age group that we studied, repartnering is much less common. For example, for women at the ages of 50-54, only around 25 percent are repartnered six years after the divorce. The lower panels (c) and (d) show the age and gender-specific profiles indicating whether the individual has a child living at home. Here, we observe the largest difference between young men and women (aged 25-29), while for older individuals, who are less likely to have children living at home, the gender difference is weaker.

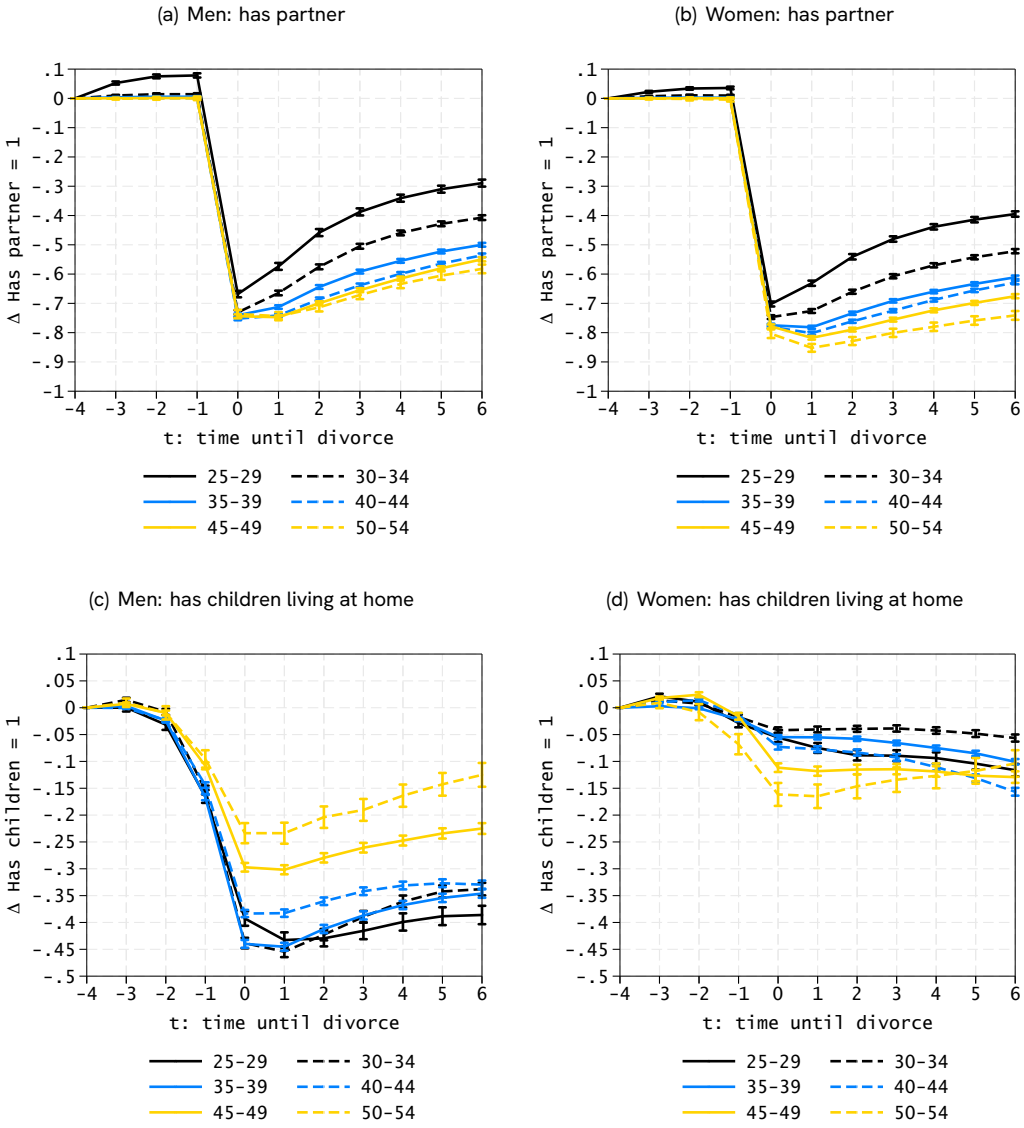
7.2 Net Worth and Accrued Pension Benefits

Figures 5 and 6 show the overall effect of a divorce on the amount of total net worth which has to be divided equally among divorced individuals by law. Figure 5 shows that one year after a divorce, total net worth is 111,000 euros lower for women compared to their married control group. For men, this effect is significantly smaller, amounting to around 60,000 euros.

To grasp the quantitative importance we compare these drops in assets due to divorce with the average level of net worth for the control group which stays married (depicted in Panel (a) of Figure 5, for example).[11]

11 The comparison of the coefficient of the TWFE model to the mean value of our control group is feasible due to the fact that the results from the TWFE model are very similar to the simple comparison of the means between divorced and married after our matching procedure.

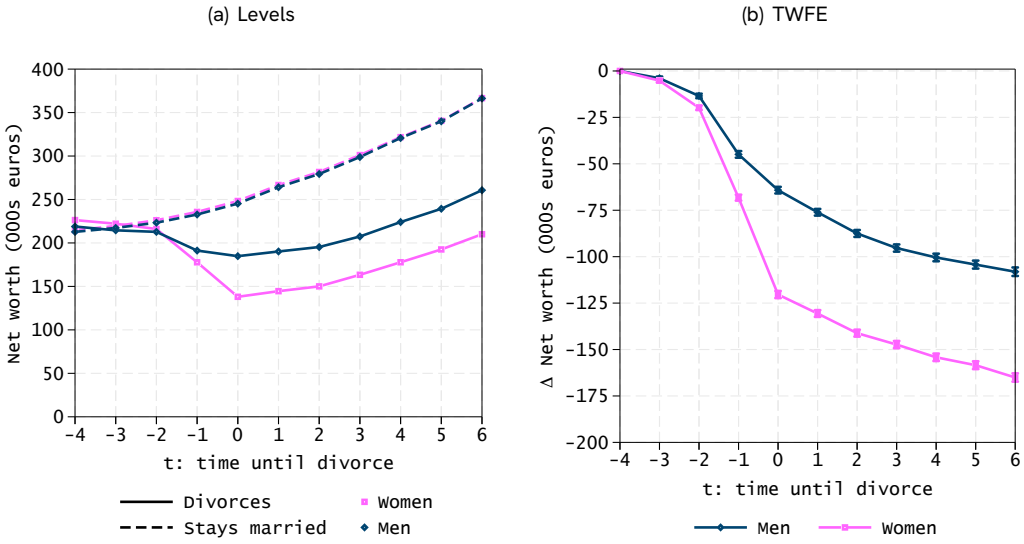
Figure 4: Socio-demographic Effects



Notes: The figure depicts results from the TWFE estimation for different age groups. Panels (a) and (b) contain the age-specific profiles of the effects of divorce at $t = 0$ on having a partner for men and women, respectively. Panels (c) and (d) contain the age-specific profiles of the effects of divorce at $t = 0$ on having children living at home for men and women, respectively.

Compared to a mean asset value of more than 260,000 euros in $t = 1$ for those who stayed married, this is a reduction by 50 percent for women and only around 30 percent for men. This reduction in net worth compared to the non-divorced is quite persistent and the absolute differences even aggravate over time, indicating that in addition to the immediate effect of the divorce, there is lower relative wealth accumulation. The decreasing line depicting the difference between divorced and married in the panel (b) showing the results of

Figure 5: Amount of Net Worth



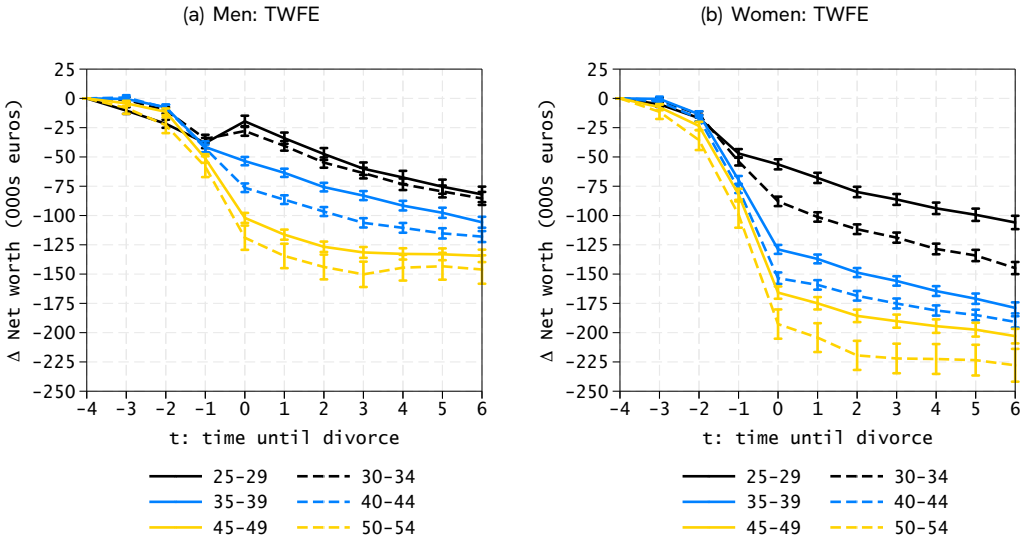
Notes: This figure shows the estimated effects of divorce on the amount of total net worth. Panel (a) contains the descriptive group means for the amount of total net worth of married and divorced men and women. Panel (b) contains the TWFE estimates of the effect of divorce at $t = 0$ on the amount of total net worth for men and for women separately.

the TWFE, implies an increasing gap of net worth between being divorced and staying married. Six years after the divorce, the difference in net worth compared to the control group, who stayed married, amounts to more than €156,000 for women and €105,000 for men. In relative terms this amounts to a reduction of net worth of more than 45 percent for women and over 30 percent for men. Note that this strong and persistent decline is despite the fact that divorced individuals re-partner, cf. Figure 2, which would likely imply a catch-up in terms of net worth, given that our variable is measured at the household level. The results suggest an even more substantial diverging effect in terms of future wealth accumulation for individuals who remain single.

Age-specific effects of the consequences of divorce on net worth, as shown in Figure 6, reveal a strong age pattern, where older individuals experience a larger reduction in wealth compared to younger individuals.[12] This is, however, explained by the fact of higher household asset holdings at older ages. To get an idea of the relative decrease in assets we again compare the coefficient of the TWFE model to the average net worth of those who stayed married six years after the divorce. This measure shows that the relative decline is comparable over age groups. For example, the relative difference six years after the divorce for individuals aged 25-29 is 31 percent for men and 40 percent for women. For older individuals aged 50-54 this difference is 31 percent for men and 49 for women.

12 Figure A7 in the Appendix shows the age-specific averages for married and divorced individuals.

Figure 6: Amount of Net Worth: Age Profiles



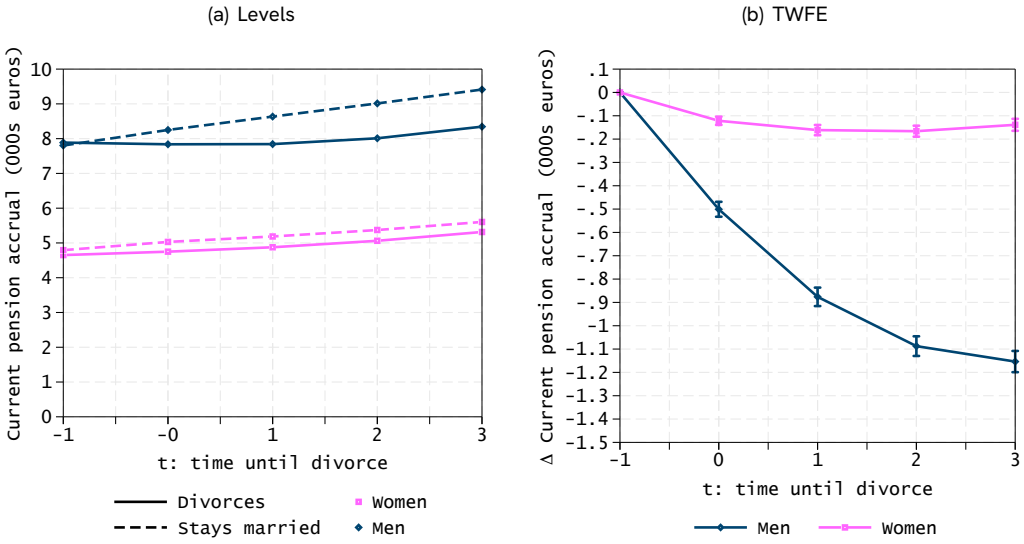
Notes: The figure depicts results from the TWFE estimation for different age groups. Panel (a) contains the age-specific profiles of the effects of divorce at $t = 0$ on the amount of total net worth for men. Panel (b) contains the age-specific profiles of the effects of divorce at $t = 0$ on the amount of total net worth for women.

Figures 7 and 8 show the effects of divorce on annualized accumulated pension wealth.[13] As explained earlier, for accrued pension wealth, there is often a delay of up to three months in reporting and administratively handling changes in pension wealth. We observe a substantial difference in terms of gender: for men, accrued pension wealth decreases by 1,122 euros, or 12 percent relative to the annual pension rights of those who stayed married, three years after the divorce. For women, the effects are minimal (only 117 euros). Please remember that our variable only captures the negative impact of the split in pension wealth, while any increases in pension entitlements are not measured. Again, we can compare the average differences between our matched married and divorced individuals. The relative difference in annual pension entitlements three years after the divorce is 12 percent for men and 2 percent for women. For men, this is a sizable effect. For example, claiming early retirement in the USA results in a 6.6 percent reduction in benefits if a claim is made one year before the statutory retirement age. Hence, the negative effect of a divorce for men is roughly equivalent to retiring just under two years earlier than the statutory retirement age in the USA.

Figure 8 illustrates an increasing age pattern, with men in their fifties experiencing a

13 This is the annuitized annual pension entitlements given the accrued pension wealth up to the current year. Recall that due to data limitations we can only analyze a four-year time window. Figure A8 in the Appendix shows the age-specific averages for married and divorced individuals.

Figure 7: Amount of Pension Wealth



Notes: This figure shows the estimated effects of divorce on annual entitlements of pension wealth. Panel (a) contains the descriptive group means for the amount of annual entitlements of pension wealth among married and divorced men and women. Panel (b) contains the TWFE estimates of the effect of divorce at $t = 0$ on annual entitlements of pension wealth for men and for women separately.

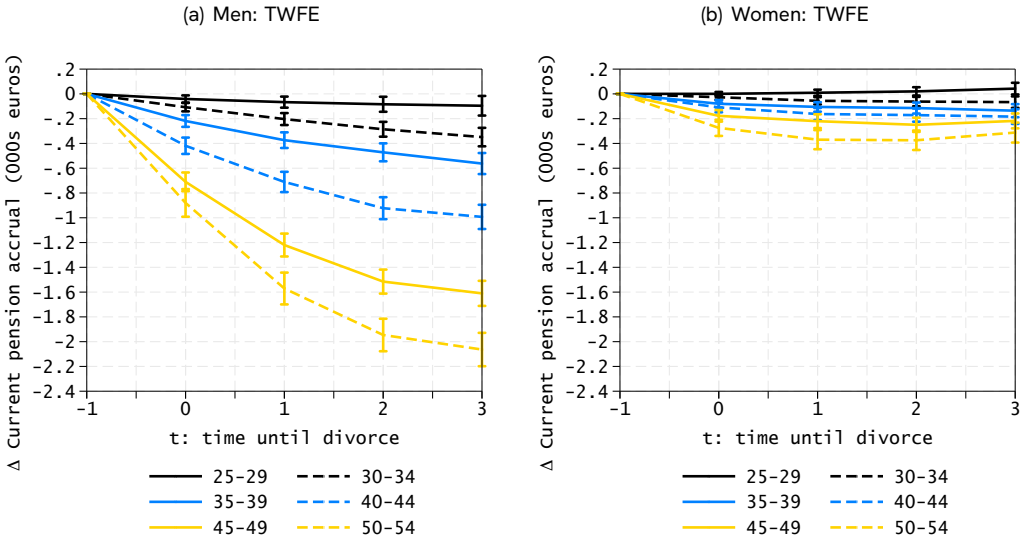
reduction in accrued pension wealth of approximately 2,000 euros. Comparing the relative difference for men between staying married and becoming divorced, the difference increases with age: at the ages of 30-34 the relative difference is 5.7 percent, which grows to 15.1 percent for men aged 50-54.

7.3 Asset Ownership and Portfolio Composition

Figure 9 reports the effect of a divorce on the ownership of several relevant asset classes, showing substantial reductions in ownership rates, particularly for women. Compared to an 85 percent homeownership rate among those who stay married, this asset class shows the steepest declines. One year after divorce, homeownership declines by 35 percentage points for women and by 16 percentage points for men (see Panel (a)). The largest drop occurs among younger women aged 30–34, whose rate is 10 percentage points lower than that of women aged 45 and older. For men, we find no age-related differences (cf. Figures A5 and A6 in the Appendix).

Likewise, substantial reductions in other asset classes are found, especially for women (see panels (b)–(d) in Figure 9). Stock and bond ownership, in particular, falls by 10 percentage points – a significant decrease from the roughly 21 percent ownership rate among married women. For men, the corresponding decline after divorce is 6 percentage points. For women, other real estate decreased by 2 percentage points, and entrepreneurial

Figure 8: Amount of Pension Wealth: Age Profiles

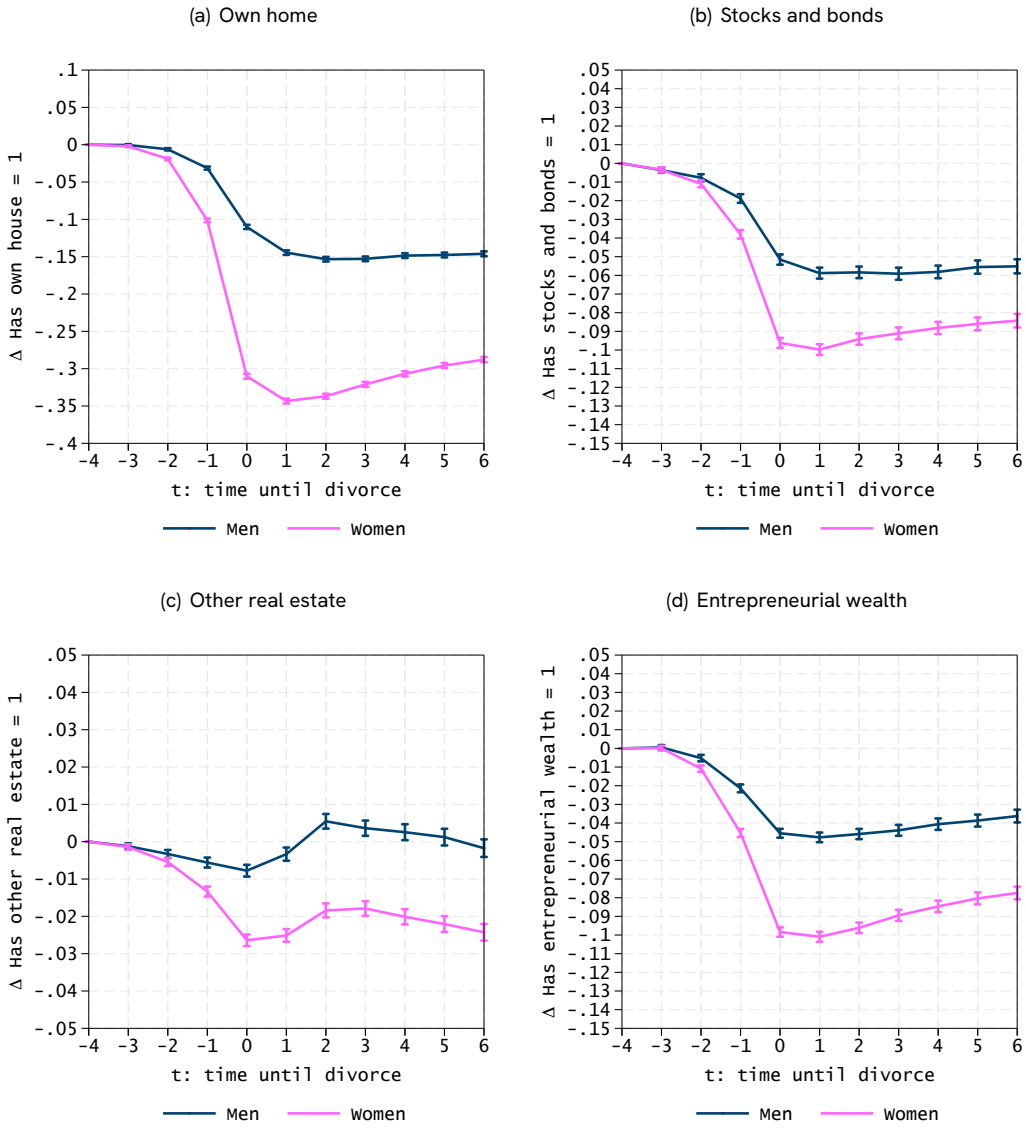


Notes: The figure depicts results from the TWFE estimation for different age groups. Panel (a) contains the age-specific profiles of the effects of divorce at $t = 0$ on the amount of annual entitlements of pension wealth for men. Panel (b) contains the age-specific profiles of the effects of divorce at $t = 0$ on the amount of annual entitlements of pension wealth for women.

wealth by 10 percentage points. Overall, these decreases are smaller for men, with a 5 percentage point decline in entrepreneurial wealth and virtually no change in the ownership of other real estate.

Age-group heterogeneity reveals a distinct trend for women: ownership rates – except for homeownership – decline increasingly with age. For men, significant age differences appear only in stock and bond ownership: men aged 25–29 experience a 2-percentage-point drop in the year after divorce, while for men aged 50–54 ownership is reduced by 8 percentage points (Figures A5 and A6 in the Appendix).

Figure 9: Ownership of Different Asset Classes (TWFE)



Notes: The figure illustrates the results of the TWFE estimation regarding ownership rates of various asset classes, split by gender. Panel (a) shows the estimated effects of divorce at $t = 0$ on homeownership, while panel (b) presents the estimated effects of divorce at $t = 0$ on stock and bond ownership rates. Panel (c) presents the estimated effects of divorce at $t = 0$ on the ownership rates of other real estate. Panel (d) presents the estimated effects of divorce at $t = 0$ on the ownership rates of entrepreneurial wealth. All effects are calculated and illustrated separately for men and women.

8 Conclusion

This paper quantifies the financial effects of divorce, examining its impact for the six years following the event. Our findings emphasize the significant and lasting financial impact of divorce, especially for women. The financial gap widens over time, affecting future wealth accumulation in housing, pensions, and other assets, for individuals who remain single. In the year of divorce, women's total net worth decreases by 111,600 euros, a difference of 49 percent, while men's declines by 60,500 euros, which is equal to 27 percent. Accrued pension entitlements also decrease significantly by around 1,100 euros for men, which is quantitatively comparable to a reduction in benefits when claiming almost two years before normal retirement age in the USA. Homeownership rates decline sharply, by 16 percentage points for men and 36 for women, with significantly lower homeownership rates persisting even six years post-divorce. Stock market participation also drops significantly by 10 percentage points for women and 6 percentage points for men. Most financial losses and declines in ownership, aside from homeownership, notably worsen with age. This trend highlights the necessity of incorporating divorce into pension planning, particularly for those divorcing later in life but before reaching retirement age, a situation which is becoming increasingly common. Also, the decline in ownership rates of several asset classes following a divorce indicates a reduction in portfolio diversification, hgihlighting a major issue for retirement readiness when getting divorced, in particular for women.

This research is part of a broader agenda exploring the implications of significant life risks for asset holdings and overall retirement readiness. By leveraging the extensive sample size of our administrative data, we can examine heterogeneous effects across highly disaggregated subgroups. Moreover, the methodology employed in this study can be adapted to investigate other major life events, such as the onset of disability or the birth of children. The findings of this study contribute to the data infrastructure supporting an online application developed in an earlier phase of this project.[14]

A pilot version of the Pension Comparison Tool is accessible online at https://pensioen.displaymagic.info/. The application facilitates social comparisons of retirement savings, with the broader aim of nudging individuals toward more informed and proactive retirement-saving behaviors, as research highlights the importance of social comparison in financial decision-making (Garcia et al., 2013) and that social comparison can effectively enhance saving behavior (Raue et al., 2020). The Pension Comparison Tool consists of two main components. First, users can benchmark their pension and accumulated wealth against a peer group selected based on shared characteristics, essentially allowing them to "look over the shoulders" of their neighbors. The tool also offers insights into the financial impact of major life events experienced by peers, such as divorce,

14 This initiative was funded by a Netspar CLICKNL Impulse Grant. The Pension Comparison Tool was first introduced to the public during the Pension3daagse in 2023.

disability, or the birth of children.

This project provides the foundational data that underpins the application and can be used by pension funds to determine more tailored investment risk profiles for participants based on their risk-bearing capacity and preferences, directly influencing their pension outcomes. We are currently seeking additional partners to further refine and expand the tool into a full-scale version. Netspar partners who are interested in collaboration are encouraged to contact us.

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Appendices

A Descriptive Statistics

	Men		Women	
	Divorces	Stays married	Divorces	Stays married
Marital status				
Unmarried = 1	0.04	0.04	0.04	0.04
Marriage = 1	0.86	0.86	0.87	0.86
Registered partnership = 1	0.03	0.03	0.03	0.03
Cohabiting = 1	0.07	0.07	0.07	0.07
Marital duration (cond.)	11.15	11.36	11.82	11.75
Has children = 1	0.78	0.79	0.80	0.79
Number of children (cond.)	2.01	2.02	2.03	2.01
Age				
16-24	0.04	0.04	0.08	0.08
25-29	0.1	0.09	0.12	0.12
30-34	0.15	0.15	0.17	0.17
35-39	0.23	0.23	0.23	0.23
40-44	0.25	0.25	0.22	0.22
45-49	0.19	0.19	0.15	0.15
50-54	0.04	0.04	0.03	0.03
Year of birth				
1955-1959	0.06	0.06	0.04	0.04
1960-1969	0.46	0.47	0.40	0.40
1970-1979	0.35	0.35	0.38	0.38
1980-1989	0.12	0.12	0.17	0.17
1990-1996	0.00	0.00	0.01	0.01
Equivalised household income (median, 000s euros)	31.15	30.96	31.02	31.10
Net worth (median, 000s euros)	167.21	165.91	171.11	167.52
Savings (median, 000s euros)	14.39	17.46	14.46	17.34
Asset ownership				
Has own house = 1	0.82	0.81	0.81	0.80
Has stocks and bonds = 1	0.27	0.26	0.26	0.26
Has other debt = 1	0.25	0.25	0.26	0.25
Has mortgage = 1	0.80	0.79	0.78	0.77
Has entrepreneurial wealth =1	0.16	0.16	0.17	0.16
Main source of personal income				
Employee = 1	0.80	0.80	0.73	0.73
Self-employed = 1	0.15	0.15	0.10	0.10
Social insurance = 1	0.03	0.04	0.06	0.07
Retiree = 1	0.00	0.00	0.00	0.00
Student = 1	0.01	0.01	0.03	0.03
No income = 1	0.00	0.00	0.07	0.07
Individuals	107,471	107,471	121,139	121,139

Table A1: Descriptive statistics over gender, divorced and matched married sample of divorces in 2009-2015. All statistics are computed at $t-4$, i.e. four years before the year of divorce.

	Men		Women	
	Divorces	Stays married	Divorces	Stays married
Marital status				
Unmarried = 1	0.00	0.01	0.00	0.01
Marriage = 1	0.91	0.92	0.92	0.92
Registered partnership = 1	0.08	0.05	0.08	0.04
Cohabiting = 1	0.00	0.03	0.00	0.02
Marital duration (cond.)	13.62	17.17	14.01	18.53
Has children = 1	0.85	0.86	0.86	0.87
Number of children (cond.)	2.07	2.17	2.08	2.18
Age				
16-24	0.01	0.01	0.02	0.02
25-29	0.06	0.05	0.09	0.07
30-34	0.12	0.10	0.14	0.10
35-39	0.16	0.12	0.16	0.12
40-44	0.18	0.14	0.17	0.13
45-49	0.21	0.19	0.20	0.18
50-54	0.17	0.21	0.14	0.20
55-60	0.09	0.20	0.06	0.18
Year of birth				
1955-1959	0.03	0.09	0.02	0.08
1960-1969	0.34	0.42	0.27	0.39
1970-1979	0.36	0.29	0.36	0.28
1980-1989	0.23	0.18	0.28	0.20
1990-2000	0.03	0.02	0.07	0.04
Equivalised household income (median, 000s euros)	37.39	40.47	36.58	40.71
Net worth (median, 000s euros)	192.71	325.22	175.27	337.12
Savings (median, 000s euros)	12.70	28.56	12.70	29.49
Asset ownership				
Has own house = 1	0.83	0.90	0.77	0.89
Has stocks and bonds = 1	0.16	0.21	0.15	0.21
Has other debt = 1	0.54	0.42	0.53	0.42
Has mortgage = 1	0.80	0.84	0.78	0.83
Has entrepreneurial wealth =1	0.20	0.21	0.17	0.21
Main source of personal income				
Employee = 1	0.74	0.76	0.72	0.71
Self-employed = 1	0.19	0.19	0.11	0.12
Social insurance = 1	0.06	0.04	0.10	0.06
Retiree = 1	0.01	0.01	0.01	0.01
Student = 1	0.00	0.00	0.01	0.01
No income = 1	0.00	0.01	0.05	0.09
Current pension accrual (median, 000s euros)	6.48	8.70	2.90	3.52
Individuals	32,647	2,392,637	35,463	2,660,644

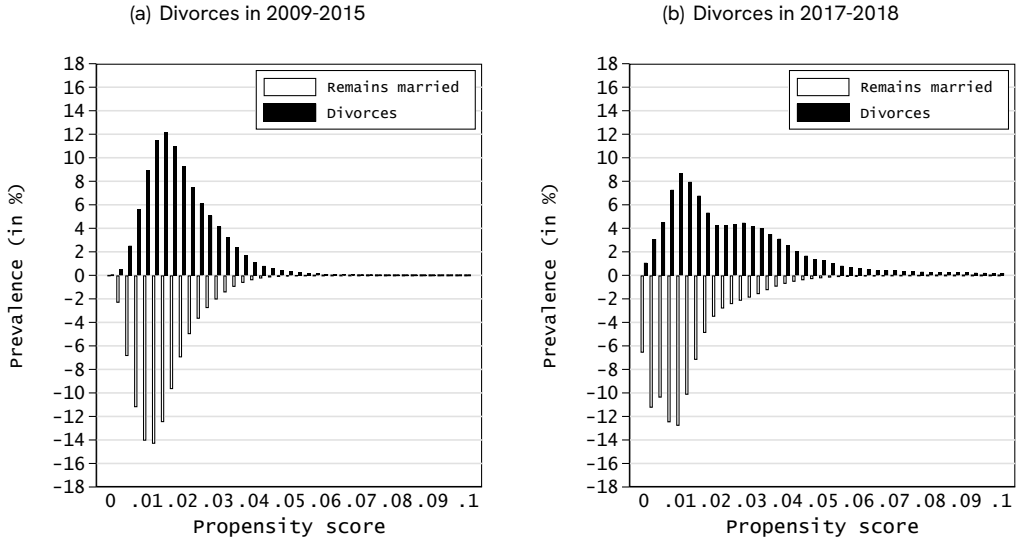
Table A2: Descriptive statistics over gender, divorced and unmatched married sample of divorces in 2017-2018. All statistics are computed at $t-4$, i.e. four years before the year of divorce. The number of children and marital duration are conditional upon having children and being married, respectively. Married counts include repeated observations because these individuals can serve as potential matches for distinct years of divorce.

	Men		Women	
	Divorces	Stays married	Divorces	Stays married
Marital status				
Unmarried = 1	0.00	0.00	0.00	0.00
Marriage = 1	0.91	0.92	0.91	0.92
Registered partnership = 1	0.08	0.08	0.08	0.08
Cohabiting = 1	0.00	0.01	0.00	0.00
Marital duration (cond.)	13.62	14.20	14.01	14.51
Has children = 1	0.85	0.85	0.86	0.85
Number of children (cond.)	2.07	2.07	2.08	2.09
Age				
16-24	0.01	0.01	0.02	0.02
25-29	0.06	0.06	0.09	0.10
30-34	0.12	0.12	0.14	0.13
35-39	0.16	0.14	0.16	0.15
40-44	0.18	0.16	0.17	0.16
45-49	0.21	0.21	0.20	0.20
50-54	0.17	0.19	0.14	0.15
55-60	0.09	0.10	0.06	0.08
Year of birth				
1955-1959	0.03	0.04	0.02	0.03
1960-1969	0.34	0.37	0.27	0.30
1970-1979	0.36	0.34	0.36	0.34
1980-1989	0.23	0.22	0.28	0.27
1990-2000	0.03	0.03	0.07	0.07
Equivalised household income (median, 000s euros)	37.39	38.0	36.58	37.99
Net worth (median, 000s euros)	192.7	195.8	175.3	190.397
Savings (median, 000s euros)	12.70	17.95	12.70	17.59
Asset ownership				
Has own house = 1	0.83	0.80	0.77	0.79
Has stocks and bonds = 1	0.16	0.18	0.15	0.17
Has other debt = 1	0.54	0.54	0.53	0.54
Has mortgage = 1	0.80	0.79	0.78	0.79
Has entrepreneurial wealth =1	0.20	0.21	0.17	0.20
Main source of personal income				
Employee = 1	0.74	0.70	0.72	0.71
Self-employed = 1	0.19	0.21	0.11	0.12
Social insurance = 1	0.06	0.07	0.10	0.10
Retiree = 1	0.01	0.01	0.01	0.01
Student = 1	0.00	0.00	0.01	0.01
No income = 1	0.00	0.01	0.05	0.05
Current pension accrual (median, 000s euros)	6.48	6.64	2.90	3.11
Individuals	32,647	32,647	35,463	35,463

Table A3: Descriptive statistics on gender, divorced and matched married sample of divorces in 2017-2018. All statistics are computed at $t-4$, i.e. four years before the year of divorce. The number of children and marital duration are conditional on having children and being married, respectively.

B Propensity Score Matching

Figure A1: Predicted propensity scores to divorce among the divorced and married



Year of divorce:	2009-2015	2017-2018
Marital status (ref: Married)		
Unmarried	-0.3004^{***}	-0.7426^{***}
Partnership	0.1013^{***}	0.1508^{***}
Cohabiting	-0.1915^{***}	-0.6901^{***}
Has children (ref: has no children and no cohabiting child)		
Has children, has a cohabiting child	0.0739^{***}	-0.1030^{***}
Has children, has no cohabiting child	0.1421^{***}	0.4354^{***}
Has no children, has a cohabiting child	0.1105^{***}	0.2969^{***}
Number of children (cond.)	-0.0180^{***}	0.0032
Age (ref: 16-24)		
25-29	-0.1467^{***}	-0.0695^{***}
30-34	-0.1940^{***}	-0.1212^{***}
35-39	-0.2164^{***}	-0.1570^{***}
40-44	-0.2488^{***}	-0.1811^{***}
45-49	-0.2765^{***}	-0.1937^{***}
50-54	-0.2979^{***}	-0.2251^{***}
55+		-0.2716^{***}
Year of birth (ref: 1955-1959)		
1960-1969	0.0229^{***}	0.0167
1970-1979	0.0470^{***}	0.0247^{*}
1980-1989	0.0828^{***}	0.0519^{***}
1990-2000	0.2026^{***}	0.1080^{***}
Equivalised household income (percentile)	-0.0014^{***}	-0.0007^{***}
Net worth (percentile)	-0.0035^{***}	-0.0059^{***}
Asset ownership (ref: no owner):		
Has own house	0.0040	-0.1607^{***}
Has mortgage	-0.0652^{***}	0.0310^{***}
Has stocks and bonds	-0.0254^{***}	0.0019
Has other debt	0.0806^{***}	0.0901^{***}
Has entrepreneurial wealth	0.0550^{***}	-0.0457^{***}
Main source of personal income (ref: employee)		
Self-employed: shareholder private or public limited company	0.0237^{***}	0.0792^{***}
Self-employed: entrepreneur	-0.0156^{***}	0.0453^{***}
Social insurance: unemployment	0.0838^{***}	0.0404^{***}
Social insurance: welfare	0.1688^{***}	0.5783^{***}
Social insurance: disability or sickness	0.1100^{***}	0.0271^{***}
Retiree	0.0500^{***}	0.2172^{***}
No income	-0.1170^{***}	-0.2277^{***}
Marital duration	Yes	Yes
Regional fixed effects	Municipality level	Province level
Individuals	15,030,366	5,121,391
Average probability of divorce:	0.015	0.006

Significance levels: *0.1%; **0.05%; ***0.01%. Predictors of divorce are measured four and one year before divorce in the years 2009-2015 and 2017-2018, respectively. Only the sign of β-estimates can be interpreted as the estimates are no marginal effects. We aim to build a predictive model rather than analyze the determinants of divorce, so we do not interpret the coefficients. Additional controls include gender, household average age, household year of birth, main income source of the household, year of divorce, ownership of other real estate, other shares, other assets, being a student, being employee of family business, receiving social assistance, and being self-employment of another type. The estimated martial duration and regional fixed effects are shown in Appendix Figures A2 and A3. The overlap assumption of the propensity score can be visually checked with Figure A1.

Table A4: Estimates for Probit model (1)

Figure A2: Estimated regional effects of Probit model (1) (divorces in 2009-2015)

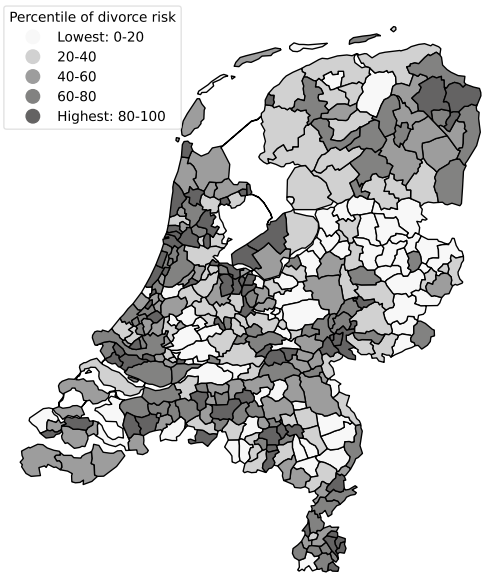
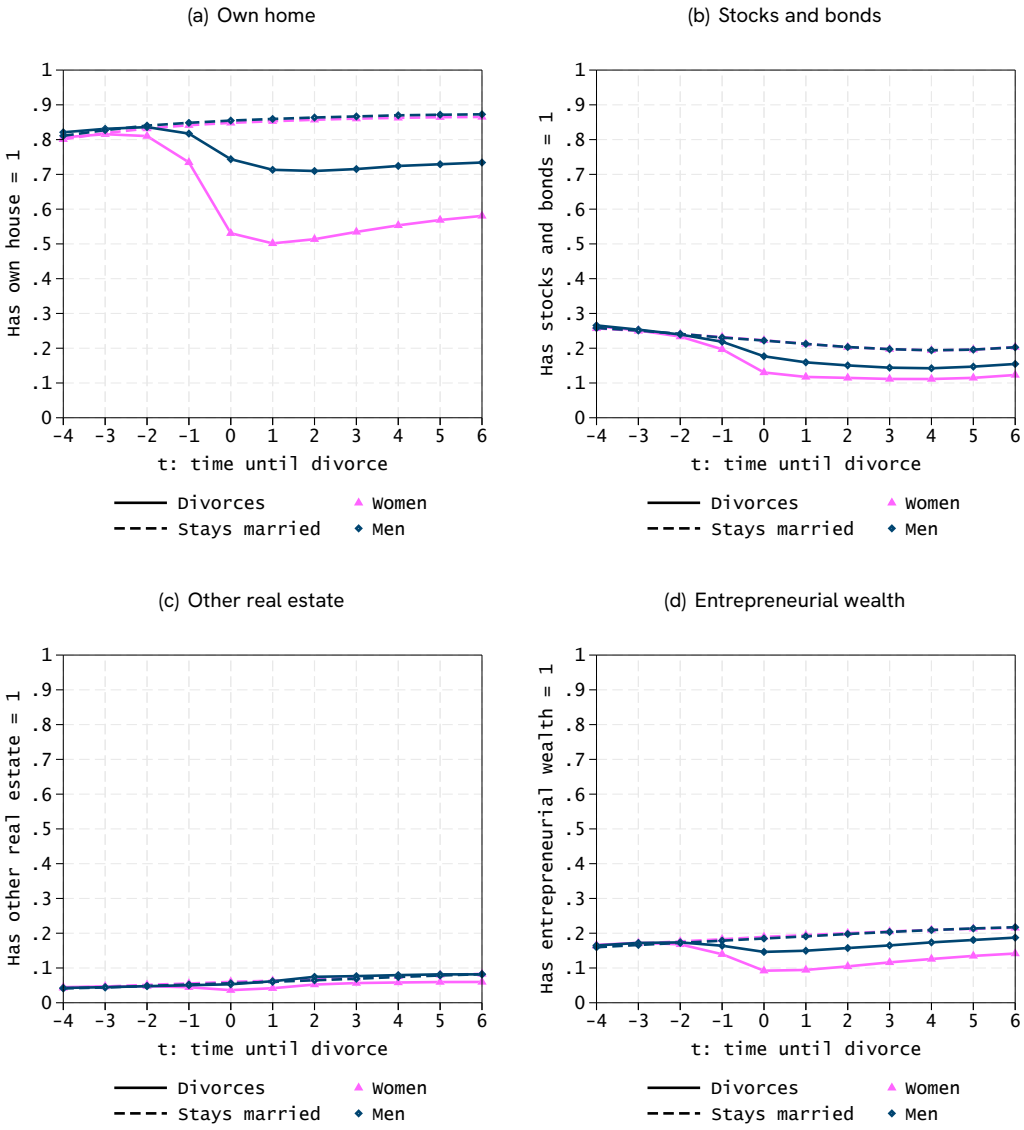


Figure A3: Estimated marital duration effects of Probit model (1)

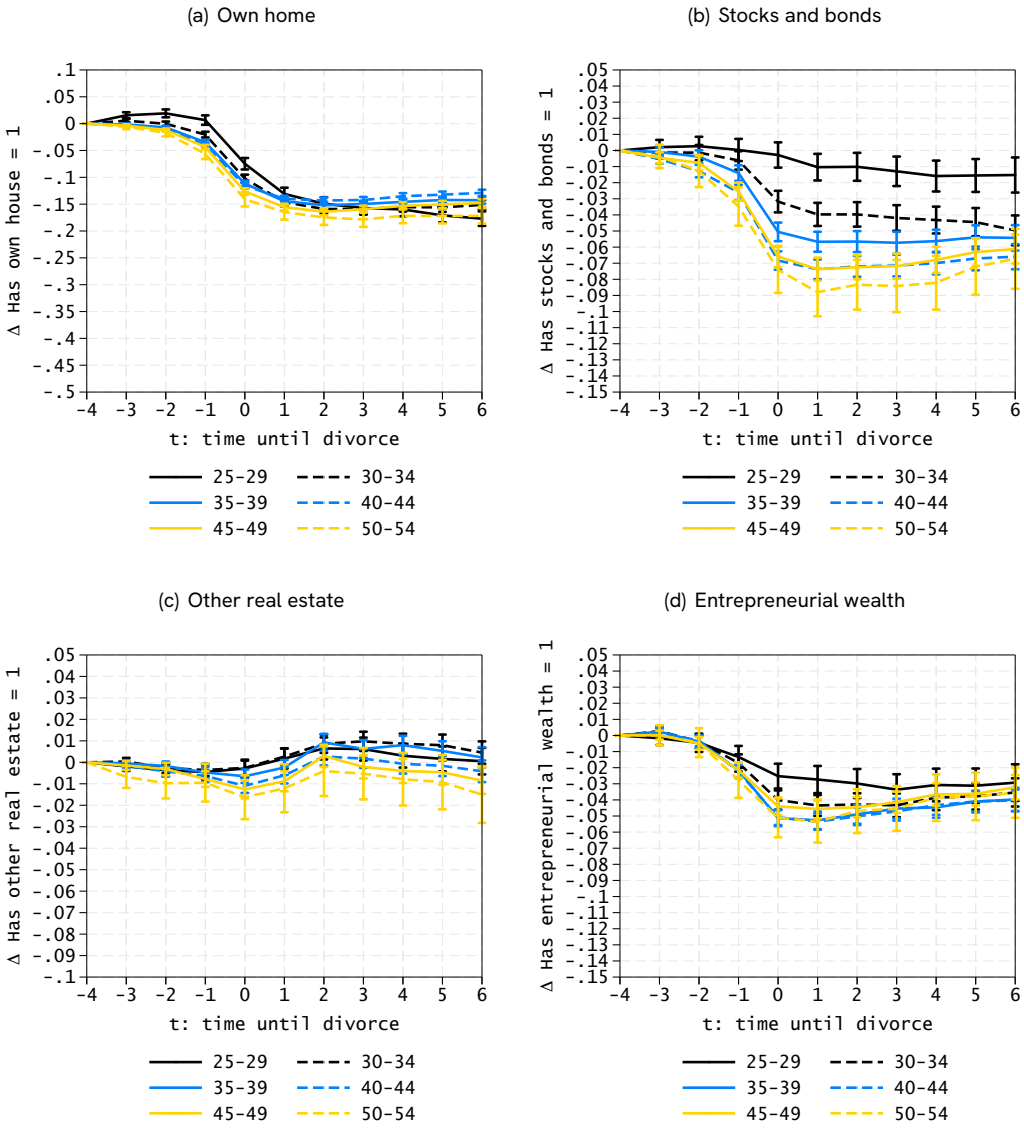
C Further results

Figure A4: Ownership rates of different asset classes of married and divorced people, split by gender



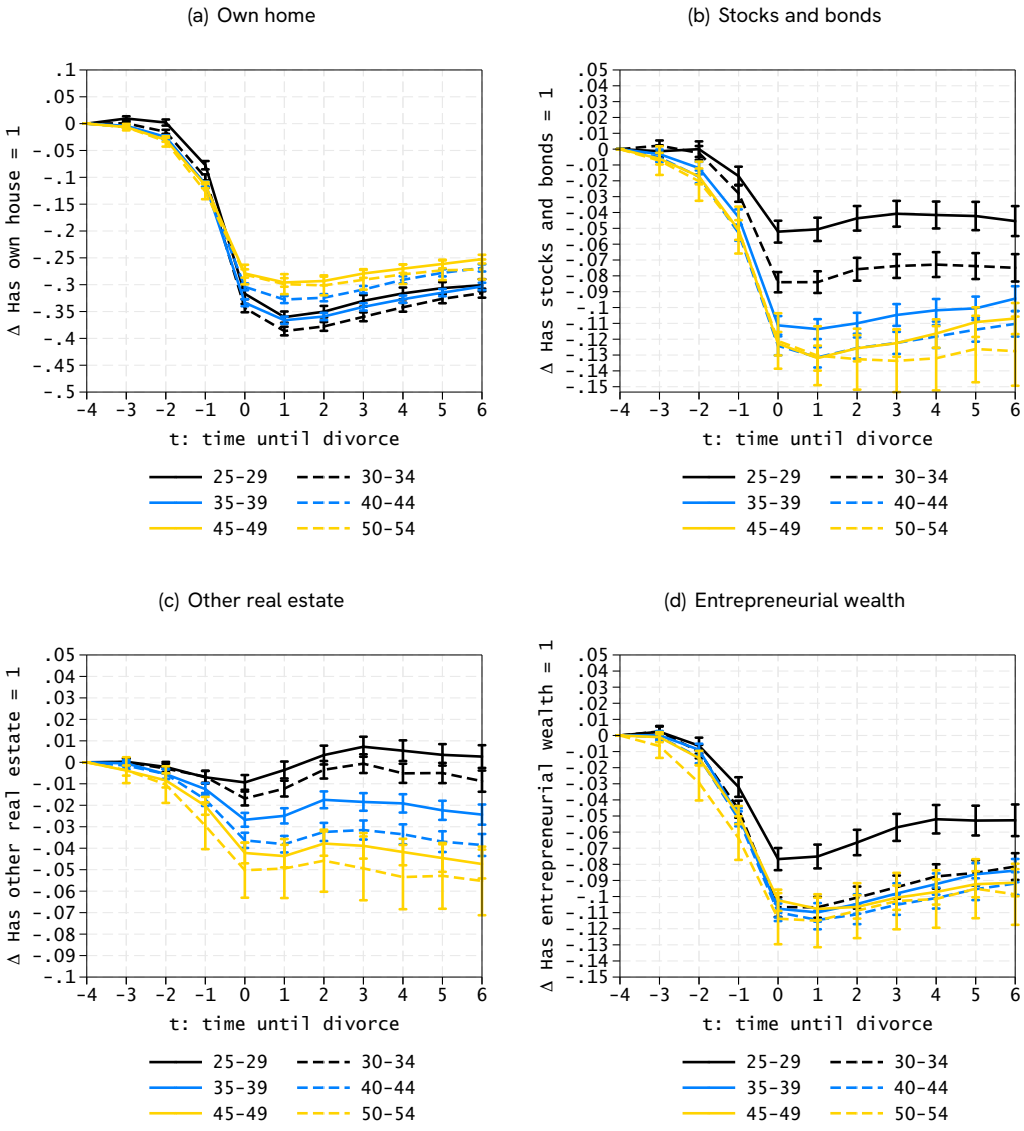
Notes: The figure depicts descriptive means of the ownership rates of different asset classes. Panel (a) contains the descriptive means of homeownership. Panel (b) contains the descriptive means of stocks and bonds. Panel (c) contains the descriptive means of other real estate. Panel (d) contains the descriptive means of entrepreneurial wealth. All descriptive means are plotted separately by gender and marital status.

Figure A5: Ownership of different asset classes (TWFE, male)



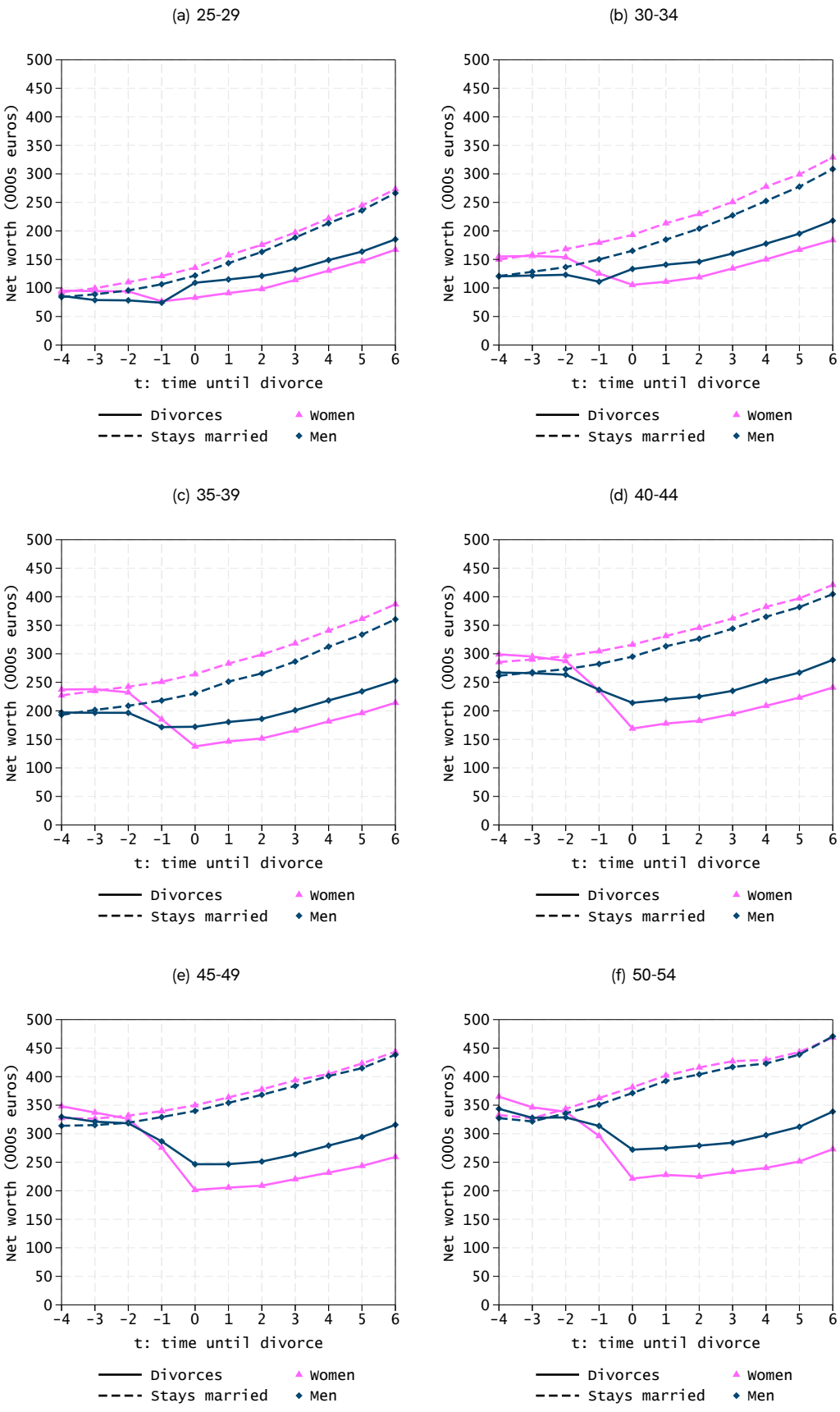
Notes: The figure depicts results from the TWFE estimation on the ownership rates of different asset classes for different age groups among men. Panel (a) contains the age-specific profiles of the effects of divorce at $t = 0$ on homeownership. Panel (b) contains the age-specific profiles of the effects of divorce at $t = 0$ on the ownership rates of stocks and bonds. Panel (c) contains the age-specific profiles of the effects of divorce at $t = 0$ on the ownership rates of other real estate. Panel (d) contains the age-specific profiles of the effects of divorce at $t = 0$ on the ownership rates of entrepreneurial wealth.

Figure A6: Ownership of Different Asset Classes (TWFE, female)



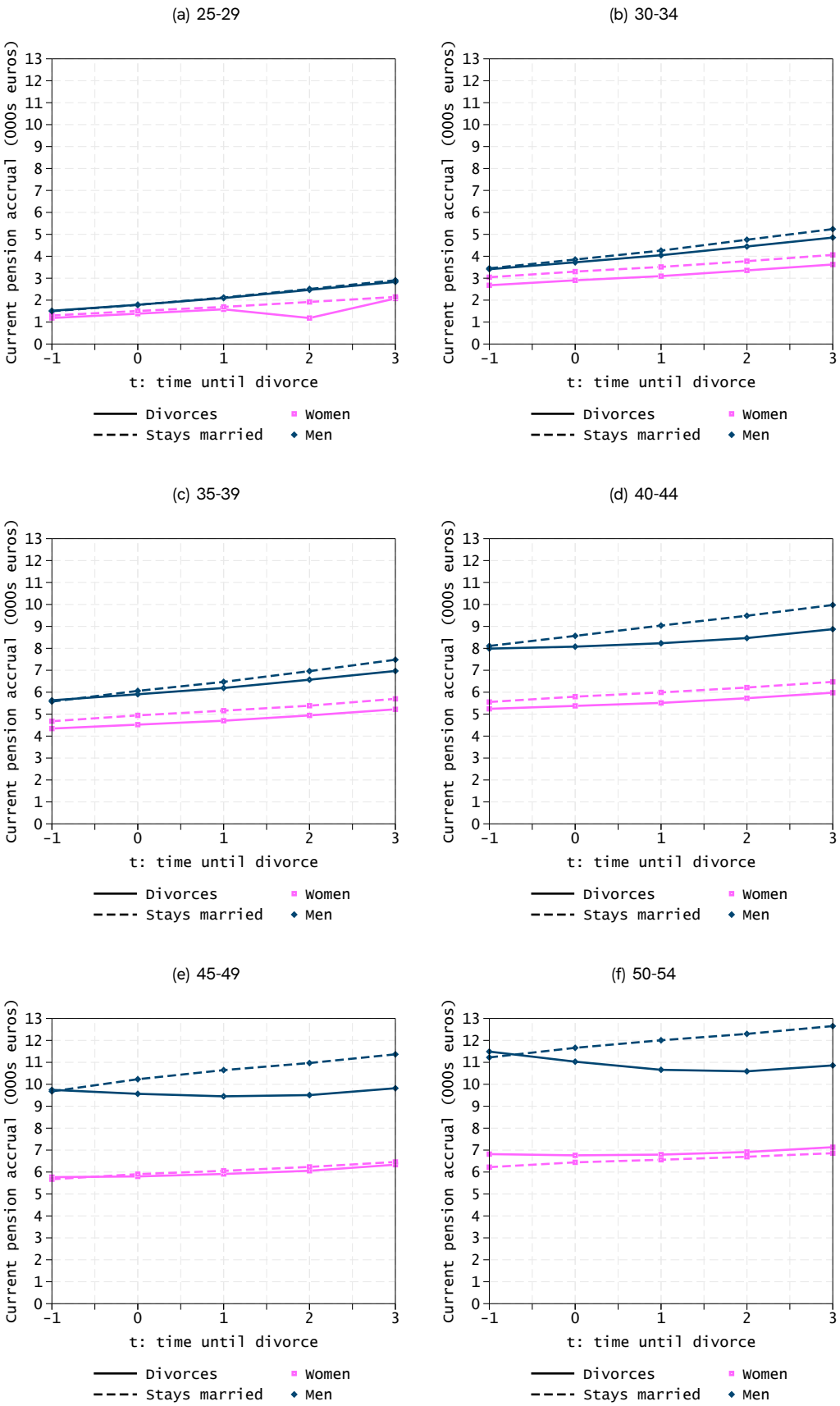
Notes: The figure depicts results from the TWFE estimation on the ownership rates of different asset classes for different age groups among women. Panel (a) contains the age-specific profiles of the effects of divorce at $t = 0$ on homeownership. Panel (b) contains the age-specific profiles of the effects of divorce at $t = 0$ on the ownership rates of stocks and bonds. Panel (c) contains the age-specific profiles of the effects of divorce at $t = 0$ on the ownership rates of other real estate. Panel (d) contains the age-specific profiles of the effects of divorce at $t = 0$ on the ownership rates of entrepreneurial wealth.

Figure A7: Net worth averages by age, gender, and marital status at $t = 0$



Notes: The figure depicts descriptive means of the amount of net worth separately for different age groups. Panel (a) contains the descriptive means of the amount of net worth among people aged 25 to 29. Panel (b) contains the descriptive means of the amount of net worth among people aged 30 to 34.

Figure A8: Average annual entitlements of pension wealth by age, gender, and marital status at $t = 0$



Notes: The figure depicts descriptive means of the annual entitlements of pension wealth separately for different age groups. Panel (a) contains the descriptive means of the annual entitlements of pension

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T +31 13 466 2109
E info@netspar.nl

netspar.nl