

Christensen, Camilla Skovbo; Olufsen, Isabel Skak

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Does cohabiting with a partner affect stock market participation?

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DOES COHABITING WITH A PARTNER AFFECT
STOCK MARKET PARTICIPATION?

Camilla Skovbo Christensen

Isabel Skak Olufsen

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CEBI

Department of Economics
University of Copenhagen
www.cebi.ku.dk

Does Cohabiting with a Partner Affect Stock Market Participation?*

Camilla Skovbo Christensen[†] Isabel Skak Olufsen[‡]

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Abstract

Does the presence of a partner affect individuals' propensity to participate in the stock market? In this paper, we estimate the effect of cohabiting with a partner on stock market participation using rich administrative data from Denmark. It is a well-known puzzle that few people participate in the stock market, and existing literature has pointed to multiple barriers for an individual's participation decision. These barriers likely change when individuals cohabit with a partner. For example, cohabiting with a partner can influence expenses, risk, and financial information that all affect the participation decision. We show that cohabiting with a partner impacts financial decisions as cohabitation increases both entry into and exit from the stock market. Those who enter the stock market are predominantly individuals who cohabit with a partner with stock market experience. Those who exit are predominantly individuals who cohabit with a partner while also becoming homeowners. Thus, our results suggest that information spill-over within couples can increase participation, and that couples who purchase a home at cohabitation face other barriers such as liquidity needs and additional risk that offset the positive effects of cohabitation.

Keywords: Household Finance, Stock Market Participation, Intra-Household Decision-Making

JEL Codes: D14, J12, G51, G53

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[†]CEBI, University of Copenhagen; CenTax, London School of Economics.

[‡]CEBI, University of Copenhagen.

1 Introduction

In this paper, we investigate whether cohabiting with a partner affects stock market participation. It is a well-known puzzle that few people participate in the stock market despite potential gains. Existing literature on the reasons behind non-participation has highlighted multiple barriers to an individual’s participation decision, such as available resources, risk, and information costs.¹ Yet, for individuals in couples, the decision to participate may not just depend on their own circumstances but may also be affected by their partner’s. The propensity to participate may therefore change when individuals make decisions as part of a couple compared to as singles. However, couple formation is generally unobservable in data, and we therefore know little about the effects of being in a couple on individuals’ stock market participation.

We exploit a unique combination of administrative data from Denmark to investigate the effects of being in a couple on stock market participation. Importantly, the data allows us to observe when individuals move in with their partner, which is a key turning point in financial decisions for couples as their finances become increasingly intertwined. Cohabitation is therefore a fitting event to investigate whether stock market participation is affected by the presence of a partner, and comprehensive administrative data is crucial for the possibility of investigating this question. The administrative data from Denmark allows us to observe all cohabitation events for the entire Danish population between 1998 and 2019, and the panel structure implies that we can observe all unmarried couples and their financial portfolios before and after cohabitation. We therefore implement an event study design to estimate the causal effects of cohabitation on stock market participation. Specifically, we compare the participation behavior of individuals in the same cohort who cohabit at different ages.

The effect of cohabiting with a partner on stock market participation is *ex ante* ambiguous. On the one hand, cohabitation could increase stock market participation because of

¹There is a large and growing literature investigating reasons behind non-participation, which spans from early contributions such as Haliassos and Bertaut (1995) documenting low participation to more recent contributions such as Choi and Robertson (2020) surveying factors behind participation decisions. Gomes, Haliassos, and Ramadorai (2021) provide an overview of this literature, which includes evidence on explanations such as participation costs, information, and risk (e.g., Vissing-Jørgensen (2002), Guiso, Haliassos, and Jappelli (2002), Gomes and Michaelides (2005), Cocco (2005), Calvet, Campbell, and Sodini (2007), and Fagereng, Gottlieb, and Guiso (2017)). See Gomes, Haliassos, and Ramadorai (2021) for an extensive review).

reduced participation frictions. For example, expenses may decrease from economies of scale, background risk may decrease through partner insurance, and information costs may decrease through information spill-over from a partner with financial knowledge. On the other hand, cohabitation could decrease stock market participation because of additional risk and liquidity needs associated with cohabitation. For example, cohabitation often coincides with homeownership, which means that couples potentially face a trade-off between investing in stocks and purchasing a home. To capture both the positive and negative effects, we investigate the change in the propensity to enter and exit the stock market at cohabitation as well as the overall change to stock market participation.

Our results show that cohabitation increases both the propensity to enter the stock market and the propensity to exit the stock market. Entry increases by 0.25 pct. points for both women and men at the time of cohabitation, which corresponds to a relative increase of almost 14 pct. for women and 12 pct. for men. Exit increases by 0.35 pct. points, which corresponds to an increase of almost 19 pct. for women and 13 pct. for men. In other words, there are more individuals who start to participate following cohabitation, but also more individuals who stop participating. The effect sizes are similar for men and women despite initial gender differences in participation. These findings demonstrate that cohabitation has both positive and negative effects on stock market participation as expected, and the effect of cohabitation on average participation therefore depends on the relative strength of the two opposing effects. We find no change in the participation rate for the cohabiting couples in our setting. Overall, our results show that the propensity to participate in the stock market changes when individuals make decisions as part of a cohabiting couple, which implies that individuals' financial decisions can be affected by their partner already at an early stage in the relationship.

Investigating the underlying mechanisms, we present evidence that information spill-over is a likely driver of the positive effect on stock market participation and that homeownership is a likely driver of the negative effect. First, we show that those who enter the stock market are predominantly individuals who cohabit with a partner with stock market experience. Thus, the increased entry into the stock market at cohabitation could be driven by information spill-over within couples. This finding reiterates evidence from previous literature that increasing

financial knowledge can affect participation, and it suggests that such knowledge transmission can also happen within couples.

Second, we show that those who exit the stock market are predominantly individuals who cohabit with a partner while also becoming homeowners. The observed increase in exit can therefore be explained by home purchase crowding out stock market participation through, for example, liquidity needs and additional risk. Notably, we find that individuals who rent are in fact more likely to participate in the stock market following cohabitation. These findings suggest that cohabiting with a partner has a positive effect on stock market participation, but that the liquidity needs and additional risk associated with home purchase offset the positive effect for individuals who become homeowners.

Related Literature We provide the first evidence on the effects of being in a cohabiting couple on stock market participation and thereby link the finance literature on portfolio choice to the literature on intra-household decision-making. Our analysis makes four contributions to the literature.

First, we provide evidence of changes in financial behavior at cohabitation, which is a clear turning point in couples' financial decision-making. It is also the first stage of couple formation that we can observe in administrative data, and our findings are therefore a step towards understanding the effects of couple formation on financial decisions. The existing research at the intersection of intra-household decision-making and portfolio choice has focused on the effect of marriage on stock market participation, such as Love (2010) and Christiansen, Joensen, and Rangvid (2015) who find that stock market participation changes following marriage. Our findings imply that individuals' financial decisions can be affected by their partner already prior to marriage.² There is a growing literature on family formation that investigates the role of cohabitation and the consequences of cohabitation becoming more widespread (Stevenson and Wolfers (2007), Lundberg, Pollak, and Stearns (2016), and Blasutto and Kozlov (2023)), but

²These results also relate to recent studies on intra-household decision-making highlighting how the well-established gender differences in investment behavior change over the life cycle, that gender norms can influence household decisions, and that married couples sort on wealth as well as return to wealth, all of which further motivates the study of financial decisions already at the time when men and women form couples (e.g., Bacher (2024), Ke (2021), Fagereng, Guiso, and Pistaferri (2022)).

the literature on the effect of cohabitation on individuals' economic decisions is sparse. The paper closest to ours is Larsen (2023), who also investigates the effects of cohabiting with a partner but on gender inequality in earnings.

Second, we provide new evidence on the entry and exit margins of stock market participation. The majority of the finance literature on portfolio choice has focused on the low participation rate and paid less attention to the movements in and out of the stock market. However, recent papers document substantial stock market entry and exit rates, and understanding these movements could increase knowledge of the underlying reasons behind non-participation. For example, Galaasen and Raja (2024) show that short spells on the stock market are common and that a significant share of those who exit re-enter the stock market later. Bonaparte et al. (2023) also show that entry and exit rates may be differently impacted throughout the life-cycle. Our results imply that changes in household structure are important for the decision to enter or exit the stock market and might contribute to explaining higher entry and exit rates for younger households observed by, e.g., Fagereng, Gottlieb, and Guiso (2017) and Bonaparte et al. (2023).

Third, our result on information spill-over within a couple contributes to the literature on the role of non-pecuniary participation costs, such as the cost of acquiring knowledge about the stock market. Our result is consistent with previous research showing that increasing financial knowledge can increase stock market participation (e.g., Guiso, Haliassos, and Jappelli (2002), Christiansen, Joensen, and Rangvid (2008) and Cole, Paulson, and Shastry (2014)). It also contributes to the literature on the effect of peers and social interactions on financial decisions (e.g., Hong, Kubik, and Stein (2004), Brown et al. (2008), or Kuchler and Stroebl (2021) for an overview). In particular, studies have highlighted that participation behavior spills over within families (e.g., Li (2014)). We contribute to this literature by documenting an effect of the partner, who is likely the closest peer and from whom information might therefore be the most influential, as suggested by Malmendier and Veldkamp (2022).

Last, our findings on the link between home purchase and stock market participation contribute to the branch of portfolio choice literature that investigates whether homeownership crowds out investment in stocks (e.g., Cocco (2005), Yao and Zhang (2005), Chetty, Sándor,

and Szeidl (2017) and Vestman (2019)). Our results are consistent with Brandsaas (2021) who uses survey data from the US to show that renters who become homeowners are more likely to exit the stock market. We complement these results by analyzing couples' home purchase decisions at cohabitation, which thus coincide with other changes to participation barriers. Our results imply that the changes associated with home purchase, such as changes to liquidity needs and risk, offset the positive effects of cohabitation. This could suggest that a financial knowledge intervention to boost stock market participation might be most effective for young people for whom home purchase is not imminent or for people who have already purchased a home. In sum, these results highlight the importance of home purchase for portfolio choice decisions.

The paper is organized as follows. In Section 2, we introduce the data and describe the estimation sample. In Section 3, we present the empirical framework, and in Section 4, we present our results. Finally, Section 5 provides concluding remarks.

2 Data and Estimation Sample

2.1 Data Description

We use administrative data from Statistics Denmark covering the entire Danish population from 1998 to 2019. The Danish administrative data is well-known for its high-quality and detailed information on demographics and third-party reported information on wealth and income, which is essential to study financial decisions. The data contains partner identifiers created by Statistics Denmark, which not only covers married couples but also allows for separate identification of cohabiting couples. Importantly, the panel structure of the data allows us to observe each individual's partner history, and the access to full-population data allows us to observe financial information on both partners in every couple before and after cohabitation.

Two adults are defined by Statistics Denmark as being in a cohabiting couple if they live at the same address, are of opposite sex, have less than a 15-year age gap, and share no family ties. This cohabitation definition does not capture same-sex couples, and we therefore focus on

couples of opposite sex.³ The cohabitation definition may capture some households with two adults who are in fact roommates and not partners. However, the technical note by Simonsen et al. (2021) on the quality of demographic data shows that the vast majority of couples registered as cohabiting couples in the registry data also report to be living in a cohabiting relationship in a survey. Furthermore, our sample restrictions greatly reduce the likelihood of including roommates, see Section 2.2.

Unlike marriage, cohabitation does not imply automatic joint ownership of assets, which means that we can track individual ownership of assets before and after cohabitation. If cohabitation ends, there is no automatic joint division of assets. Additionally, cohabiting couples cannot share their tax allowance with their partner as is possible for married couples, which means that couples are unlikely to cohabit for tax reasons.⁴

We link the demographic data of cohabiting individuals' to third-party reported data on their income and wealth using unique personal identifiers. The data on income and wealth is reported to the Danish Tax Authorities by the relevant financial institutions and includes information on every individual's end-of-year balance of assets and liabilities. We observe detailed components of the entire saving portfolio. Important to our analysis, we observe financial assets, which include individuals' bank deposits, bonds, and stock holdings. Stock holdings include direct investments in stocks and indirect investments through shares in mutual funds. Pension savings that are invested in stocks or mutual funds are not part of the stock holdings measure but are instead in a separate category of pension assets.

We define individuals as participating in the stock market if they hold a positive value of stocks at the end of the year. To capture participation dynamics, we also create indicators for entry into and exit from the stock market. The entry indicator is equal to one if the individual owns a positive value of stocks in a given year but did not own stocks the previous year. The

³Same-sex couples who are married (or in legal partnerships prior to 2012) are identifiable in the data. It would therefore be possible to trace back the cohabitation history of these couples but that would leave out cohabiting same-sex couples who do not get married. We leave a separate investigation of same-sex couples for future research.

⁴At the end of cohabitation, each partner simply takes their own belongings. Legal division aid is only possible when cohabiting couples share an asset (such as a house) and cannot themselves agree on the division of assets, cf. <https://domstol.dk/alle-emner/familie-og-skilsmisse/deling-af-faelles-formue/> (in Danish). Current legislation on the taxation of couples is described at <https://info.skat.dk/data.aspx?oid=1976882> (in Danish).

exit indicator is equal to one if the individual does not own stocks in a given year but did own stocks the previous year.

2.2 Sample Description

We impose a set of sample restrictions to arrive at an estimation sample that allows us to confidently estimate the effect of cohabitation on stock market participation.⁵ First, we focus on couples where both individuals move in with a partner for the first time, and cohabit for at least two years, because we are interested in the initial effect of cohabitation on both partners. If there is an effect of cohabitation on financial decisions, then later financial decisions might be shaped by previous cohabitations, which means that it is important to focus on individuals' first cohabitation. To ensure that we can identify the timing of individuals' first cohabitation, we restrict our sample to individuals we observe in the data from age 18.

Second, we exclude individuals for whom we do not have demographic or financial information five years before and five years after their first cohabitation, e.g., because they temporarily lived abroad. This is to ensure that we can track relationship changes and financial decisions before and after their first cohabitation. We also exclude individuals for whom information on their partner is missing in the same period. Since our data period is from 1998 to 2019, these restrictions imply that we consider all first cohabitation events between 2002 and 2014 where we observe both partners for five pre- and post-periods.

Third, we focus on individuals who are between 23 and 35 years old when they move in together. The lower bound of the age restriction ensures that the majority of individuals in our sample are not living with their parents prior to cohabitation and are therefore more likely to already cover their own living expenses.⁶ Appendix Figure A.1 shows the distribution of individuals' ages at their first cohabitation and documents that few people cohabit for the first time after age 35. The upper bound therefore ensures that we have sufficient observations

⁵Many of our sample restrictions are similar to the ones implemented in Larsen (2023), who investigates the effects of cohabitation on gender inequality in earnings.

⁶In Denmark, individuals move away from their parents at quite a young age compared to other European countries. Less than 60 pct. live with their parents at age 20, and only around 10 pct. live with their parents at age 23, see for example an analysis by Statistics Denmark at <https://www.dst.dk/da/Statistik/nyheder-analyser-publ/nyt/NytHtml?cid=32669> (in Danish).

within each age group.

Last, we restrict the sample to couples who do not get married the same year they start cohabiting and stay together for at least five years after cohabitation. The no-marriage restriction allows us to isolate the effect of moving in with a partner from the effect of marriage.⁷ The no-separation restriction allows us to consider the dynamic effects of cohabitation and ensures that our estimates will not suffer from attenuation bias coming from couples breaking up during the sample period. This restriction also reduces the likelihood of including roommates rather than couples. This leaves us with a sample of 120,022 individuals in 60,011 couples.

Table 1 presents summary statistics for our main sample two years prior to cohabitation. Women are on average slightly younger than men at cohabitation and have lower levels of income and wealth, which is also the case in the general population. Approximately the same share of men and women have completed tertiary education. The summary statistics suggest that few individuals have financial links with their partner prior to cohabitation: Almost no one in the sample has children, shares a joint account or owns a home with their partner prior to cohabitation.

In line with existing evidence such as Bacher (2024), men are more likely to participate in the stock market than women. 24 pct. of the men in our estimation sample participate prior to cohabitation, while 18 pct. of women participate. For reference, the average participation rate was 23 pct. for men and 19 pct. for women among the working-age population in Denmark in 2014. Conditional on participation, the men in our estimation sample also have a higher stock value than women and invest a larger share of their financial assets. Roughly 2 pct. of the sample enters the stock market two years prior to cohabitation, and around 1-2 pct. of the sample exits the stock market two years prior to cohabitation, which corresponds to an exit rate of roughly 6 pct. among those who participate.

⁷In Section 4.3, we show that our results are not sensitive to the choice of including couples who get married after cohabitation.

Table 1: Summary Statistics Two Years Prior to Cohabitation

| | Women | Men |
|-----------------------------------|---------|---------|
| Demographics | | |
| Age at first cohabitation | 25.9 | 27.2 |
| Has children (pct.) | 2.8 | 0.5 |
| Tertiary education (pct.) | 19.4 | 20.5 |
| Income and wealth | | |
| Gross income (DKK) | 159,109 | 213,278 |
| Assets (DKK) | 88,289 | 197,277 |
| Net wealth (DKK) | -3,013 | -2,619 |
| Joint account with partner (pct.) | 5.0 | 5.0 |
| Homeownership with partner (pct.) | 0.1 | 0.1 |
| Stock market participation | | |
| Stock market participation (pct.) | 17.7 | 24.1 |
| Stock value (DKK) | 24,026 | 34,202 |
| Risky share (pct.) | 28.1 | 33.3 |
| Entry (pct.) | 1.9 | 2.5 |
| Exit (pct.) | 1.1 | 1.6 |
| Observations | 60,011 | 60,011 |

Notes: The means reported are from two years prior to the first cohabitation of the individuals in the sample. Tertiary education is a dummy indicating whether the individual has completed a degree above high school and vocational training. Gross income includes labor income, public transfers, and capital income excluding employer-administered pension contributions. We use third-party reported data on individual account ownership to identify joint accounts. We define couples as having a joint account if they are both listed as owners of the account and are the only two owners of the account. The risky share is defined as the share of financial assets that constitutes stock holdings. Entry (exit) is a dummy equal to one if the individual owns (does not own) a positive value of stocks in a given year but did not (did) own stocks the previous year.

3 Empirical Framework

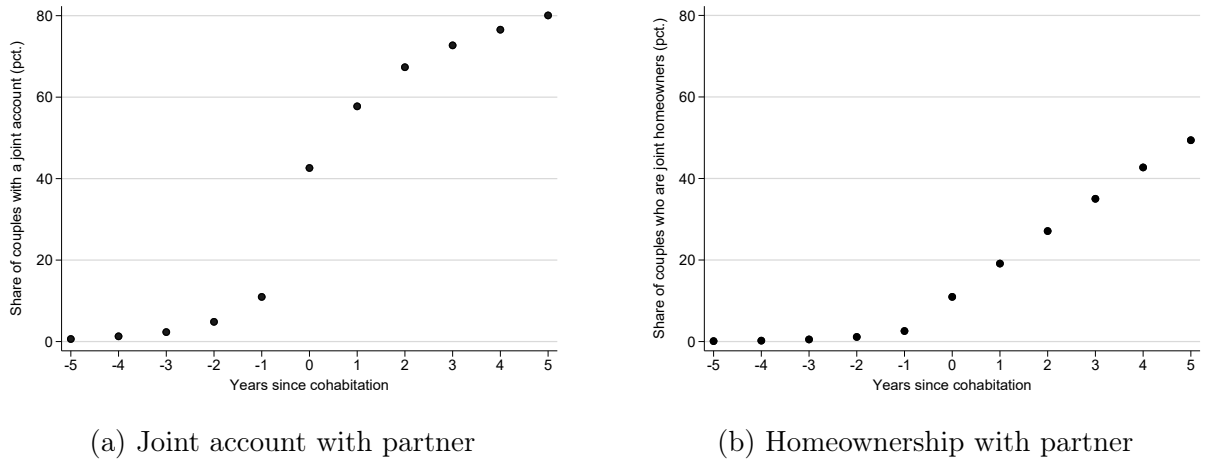
3.1 Cohabitation and Barriers to Participation

To investigate whether the presence of a partner affects individuals' propensity to participate in the stock market, we estimate the effect of cohabiting with a partner on stock market participation. At cohabitation, individuals start making decisions as part of a cohabiting couple instead of as singles, and their individual finances become increasingly intertwined. For example, couples begin to face joint expenses such as rent, insurance, and everyday expenditures, which also means that couples might naturally talk (more) about finances. Cohabitation thus represents a crucial turning point for individuals' financial decisions and allows us to investigate the effect of being in a cohabiting couple on stock market participation.

We present evidence of couples' finances becoming increasingly intertwined at cohabitation using data on account ownership and homeownership. First, we look at the share of couples with a joint account alongside their individual accounts. This information is based on individual

accounts data that is third-party reported by banks. Panel (a) in Figure 1 shows that the share of couples with a joint account increases from only 5 pct. two years prior to cohabitation to 58 pct. the year after cohabitation. Couples could also share assets and expenses without having a joint account, which means that this figure likely underestimates the increase in joint assets following cohabitation. Second, we use the homeownership register from Statistics Denmark and show that the share of couples owning a residential property together increases from almost no one to 19 pct. the year after cohabitation, cf. Figure 1 panel (b). The figures suggest that couples generally transition from not having any joint assets prior to cohabitation to having increasingly intertwined finances when they cohabit.

Figure 1: Changes in Financial Links between Partners at Cohabitation



Notes: Panel (a) shows the share of couples who have a joint account, and panel (b) shows the share of couples who own a home together. We use third-party reported data on individual account ownership to determine joint accounts. We define couples as having a joint account if they are both listed as owners of the account and are the only two owners of the account. Similarly, we define couples as joint homeowners if they are both listed as owners of the same property in the homeownership register.

Cohabitation likely affects stock market participation because cohabiting with a partner changes several barriers to participation.⁸ On the one hand, cohabitation is associated with changes that can positively affect stock market participation, such as a reduction in participation costs and background risk. Participation costs include both pecuniary costs associated with stock market participation, e.g., the direct costs of opening an investment account, and non-pecuniary costs such as costs of learning about stocks and seeking advice (Fagereng, Gottlieb, and Guiso (2017) and Choi and Robertson (2020)). It is well-established that even small

⁸Gomes, Haliassos, and Ramadorai (2021) provides an overview of the existing literature on the various barriers to stock market participation. See also footnote 1.

pecuniary costs are barriers to participation for individuals with low wealth (Vissing-Jørgensen (2002), Haliassos and Michaelides (2003), and Gomes and Michaelides (2005)). Such frictions could decrease following cohabitation if available resources increase due to, e.g., shared expenses and couples benefiting from economies of scale. Furthermore, given that couples start talking more about finances following cohabitation, the non-pecuniary costs could decrease if an individual moves in with a partner who shares information about the stock market, e.g., from previous stock market experience or financial knowledge (e.g., Kuchler and Stroebel (2021)). Background risk faced by individuals may also decrease at cohabitation, e.g., due to additional insurance through their partner. All of these potential changes point to a positive effect of cohabiting with a partner on stock market participation.

On the other hand, cohabitation is also associated with changes that can negatively affect stock market participation. One obvious factor is homeownership, which happens simultaneously with cohabitation for many couples, cf. Figure 1, and could be crucial for the propensity to exit the stock market. Existing literature shows that housing can reduce stock market participation through two main channels: First, homeownership reduces individuals' liquid wealth through, e.g., substantial down payments, and second, homeownership introduces housing price risk, which crowds out risky assets (Cocco (2005); Yao and Zhang (2005)). Purchasing a home at cohabitation could therefore decrease the incentive to invest in the stock market at the same time.

To summarize, cohabiting with a partner likely reduces several barriers to participation, which could have a positive effect on stock market participation. However, the couples who want to purchase a home when they cohabit may face a trade-off between investing in stocks and homeownership, which means that cohabitation could negatively affect stock market participation. The overall effect of cohabiting with a partner on stock market participation is therefore ambiguous *ex ante*.

3.2 Empirical Strategy

To estimate the effect of cohabitation on stock market participation, we exploit variation in the timing of cohabitation and compare individuals from the same birth cohort who cohabit at different ages. We estimate the following two-way fixed effects (TWFE) model separately by gender:

$$y_{it} = \alpha + \sum_{j \neq -2} \beta_j I[j = t] + \mathbf{C}_{it} + X_{it}\gamma_X + \varepsilon_{it}, \quad (1)$$

where y_{it} is the outcome for individual i at time t relative to cohabitation, and $t = 0$ is the year of cohabitation. We observe individuals for five years before and five years after cohabitation, i.e., $-5 \leq t \leq 5$. $I[j = t]$ are event time indicators, and we omit the event time indicator at $t = -2$ to allow couples to anticipate cohabitation for one year. This implies that the β_j coefficients capture the effect of cohabitation in each event time relative to two years before cohabitation. \mathbf{C}_{it} includes age and year fixed effects, which means that we control for both age- and time-specific differences in stock market participation, and that we identify the effects of cohabitation from differences in the timing of cohabitation. It is particularly important to control for age-specific differences as existing research shows that stock market participation is hump-shaped across the life-cycle (see, e.g., Fagereng, Gottlieb, and Guiso (2017) and Gomes (2020)). X_{it} is a set of controls, which includes the individual's and their partner's wealth and income rank at age 21 such that we control for potential differences in the propensity to invest in stocks by different resource ranks.⁹ Recent developments in econometric methods have highlighted weaknesses in the TWFE approach and propose alternative methods. We discuss this in Section 4.3 and show that our results are qualitatively similar when using the methods proposed by Sun and Abraham (2021) and Borusyak, Jaravel, and Spiess (2024).

Our main identifying assumption is that individuals from the same cohort, who choose to cohabit at different ages, would exhibit parallel trends in stock market participation if they did not cohabit. We present evidence in favor of the assumption as there are parallel pre-trends in

⁹In Section 4.3, we show that our results are unchanged if we instead control for the individual's and their partner's income and wealth rank two years prior to cohabitation instead of at age 21 as well as an indicator for their education level.

stock market participation prior to cohabitation, cf. Section 4. Furthermore, the fact that we exploit variation in the timing of cohabitation within couples who eventually cohabit means that selection into cohabitation, i.e., the unobservable propensity to cohabit, is not a concern.

Cohabitation is an event that encompasses several changes in couples' lives, and any changes caused by cohabitation will be reflected in the estimates. Thus, our estimates capture the complete effects of cohabitation on stock market participation. Our empirical strategy is the closest we can get to estimate the causal effects of cohabitation as it is not possible to find a setting where cohabitation is completely exogenous. We conduct several robustness checks in Section 4.3 to further corroborate that our results represent the effects of cohabitation.

4 The Effect of Cohabitation on Stock Market Participation

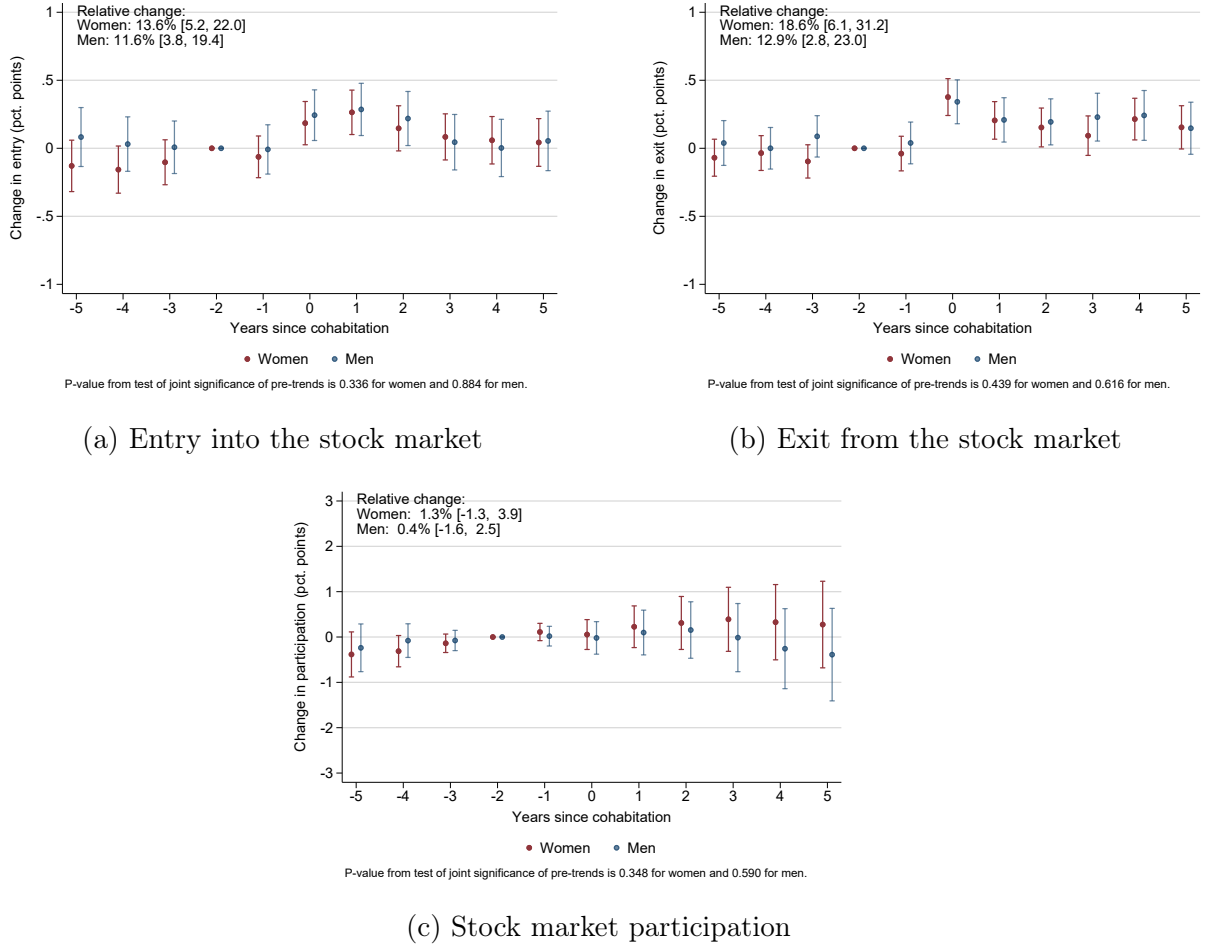
4.1 Main Results

Figure 2 presents event study estimates from estimating equation (1) for entry into the stock market, exit from the stock market, and overall stock market participation. We estimate the regression separately for men and women. The x-axis shows the time relative to cohabitation, where year 0 is the year the couple starts cohabiting, and the y-axis shows the percentage point change in the outcome relative to two years before cohabitation. In all three panels, the pre-trends are statistically insignificant for both men and women. This is evidence in favor of the identifying assumption that individuals from the same cohort would follow a similar trend in stock market participation if they had not chosen to cohabit. We therefore attribute any effect after year 0 to cohabitation.

Our results suggest that there are significant changes in participation dynamics at the time of cohabitation. In panel (a), we see that there is a significant increase in entry into the stock market at the time of cohabitation as well as the year after cohabitation. Entry increases by 0.25 pct. points for both women and men, which corresponds to an increase of almost 14 pct. for women and 12 pct. for men relative to two years before cohabitation. Cohabitation

therefore causes more individuals to enter the stock market. In panel (b), we see that there is also an increase in exit from the stock market of 0.35 pct. points at the time of cohabitation, which corresponds to a relative increase of almost 19 pct. for women and 13 pct. for men. The increased propensity to exit is persistent in the years following cohabitation. Cohabitation thus impacts both the propensity to enter the stock market as well as the propensity to exit the stock market, which affirms that cohabitation changes participation barriers that affect stock market participation both positively and negatively. Interestingly, the effect sizes are similar for men and women despite lower initial participation for women, cf. Table 1.

Figure 2: The Effect of Cohabitation on Stock Market Participation



Notes: The figures show event time coefficients and 95 pct. confidence intervals from estimating equation (1) separately for men and women for 60,011 couples. Standard errors are clustered at the individual level. The relative change is reported in the top left-hand corner and is the effect one year after cohabitation as a share of the mean two years before cohabitation. The reported p-values are from F-tests of joint insignificance of the pre-trend coefficients five to three years before cohabitation.

Panel (c) shows that there is no impact of cohabitation on overall stock market partic-

ipation. This holds for both men and women. Thus, the positive and negative effects of cohabitation on stock market participation on average cancel out, which leaves the participation rate of the cohabiting cohort unchanged relative to non-cohabiting individuals. This could be a result of the cohort composition in our setting in Denmark, and the participation rate might therefore be affected in other settings. For example, if the positive channels are stronger in other countries, cohabitation may lead to an increase in the participation rate of cohabiting couples.

In sum, we show that cohabitation has both a positive and a negative effect on stock market participation. These results are the first evidence of the effect of cohabitation on stock market participation and imply that individuals' financial decisions are affected by their partner already at an early stage in the relationship.

4.2 Mechanisms

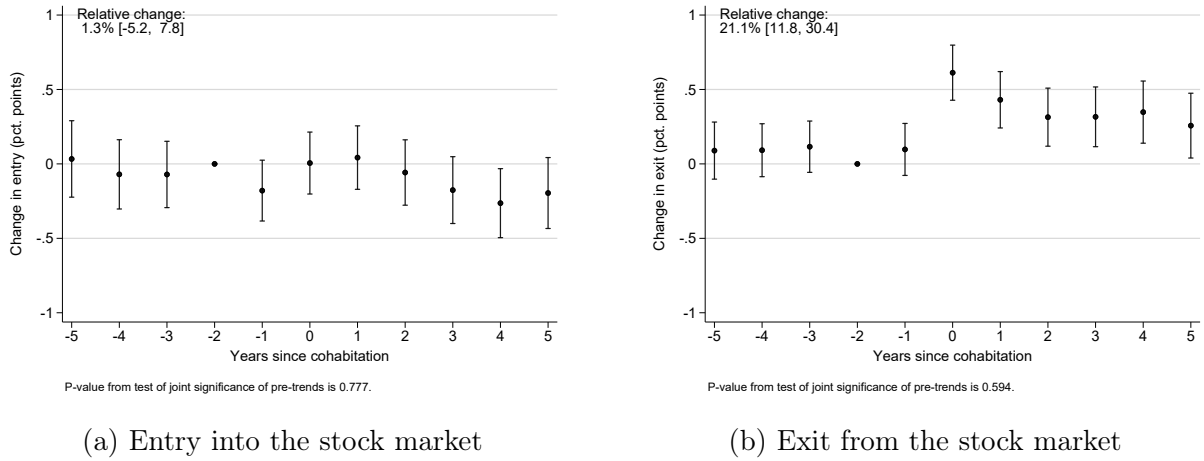
Our results show that cohabitation increases both the propensity to enter the stock market and the propensity to exit the stock market. Cohabitation therefore has both positive and negative effects on stock market participation, and our data allows us to investigate both types of effects. In this section, we present evidence that information spill-over contributes to the positive effect and that homeownership contributes to the negative effect.

4.2.1 Entry: Information Spill-over

Our main results show that cohabitation leads to an increase in entry into the stock market. In this section, we investigate whether this positive effect on stock market participation could be driven by information spill-over within couples. If an individual moves in with a partner who was already participating in the stock market, and couples begin discussing their economic choices in general or in more detail when cohabiting, the partner's information about the stock market could spill over at cohabitation and increase knowledge about the benefits of investing or decrease costs associated with the acquisition of this knowledge. Thus, the effect on entry may be stronger for couples where one partner was already participating in the stock market,

and the effect on entry may therefore be smaller at the couple level. Figure 3 shows the effect on entry at the couple level, i.e., an indicator for whether at least one partner enters the stock market given no participation by either partner in the previous year, and exit at the couple level, i.e., whether neither partner participates when at least one partner participated in the previous year. While there is a clear increase in exit at the couple level following cohabitation, cf. panel (b), there is no increase in entry, cf. panel (a). This indicates that the observed increase in entry predominantly occurs in couples where one partner is already participating in the stock market, which speaks to the hypothesis that cohabiting with a partner with previous stock market experience increases participation.

Figure 3: Effect of Cohabitation on Stock Market Participation at the Couple Level



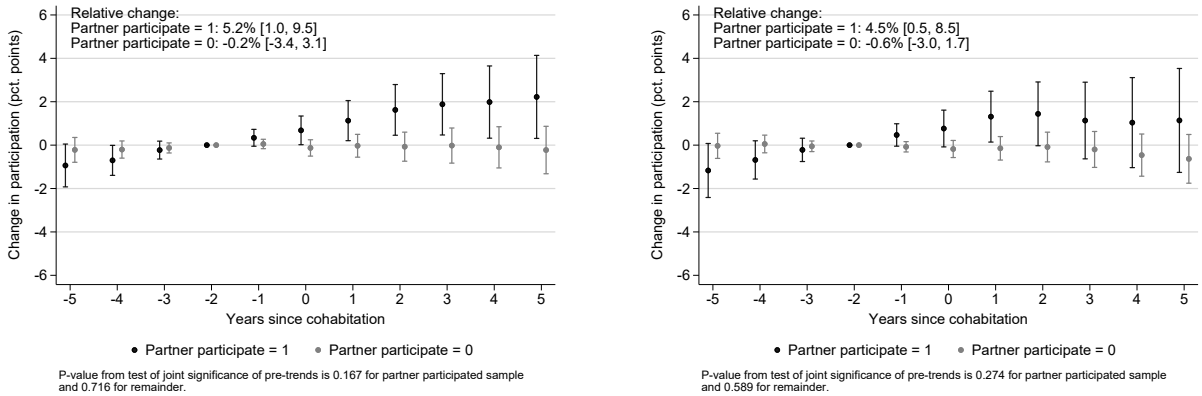
Notes: The figures show event time coefficients and 95 pct. confidence intervals from estimating equation (1) at the couple level for 60,011 couples. Entry (exit) is a dummy equal to one if at least one (neither) partner participates in the current year and neither (at least one) partner participated in the previous year. Standard errors are clustered at the couple level. The relative change is reported in the top left-hand corner and is the effect one year after cohabitation as a share of the mean two years before cohabitation. The reported p-values are from F-tests of joint insignificance of the pre-trend coefficients five to three years before cohabitation.

We test this hypothesis by splitting the sample depending on whether their partner has previously participated in the stock market or not. We define previous participation as having participated in the stock market in any of the four periods -5, -4, -3 or -2 to also capture those who may have exited the stock market at some point prior to cohabitation but still have stock market experience from previous participation. Figure 4 panel (a) shows that cohabiting with a partner with stock market experience is associated with an increase in stock market participation for women, and we see a similar but statistically weaker pattern for men in panel

(b). The pre-trends are statistically insignificant, which is evidence in favor of the identifying assumption. However, the precision of the estimates decreases with the smaller sample size. The figures suggest that the increased entry into the stock market at cohabitation could be a result of information spill-over from moving in with a partner who has stock market experience.

Our results imply that information spill-over within couples can increase participation. This is consistent with the growing research on peer effects in stock market participation, which shows that peers' stock market experience can increase individuals' participation (see, e.g., Hong, Kubik, and Stein (2004), Brown et al. (2008), or Kuchler and Stroebl (2021) for a review). An adjacent literature shows the importance of financial literacy for stock market participation (see, e.g., Calvet, Campbell, and Sodini (2007), van Rooij, Lusardi, and Alessie (2011), or Lusardi and Mitchell (2014) for a review). In Appendix Table A.1, we proxy financial literacy with financial education and present averages showing that there is also a larger increase in the share of individuals who participate in the stock market following cohabitation among those who cohabit with a partner with financial education.

Figure 4: Information Channel: Moving in With Someone Who Already Owns Stocks



(a) Stock market participation - women

(b) Stock market participation - men

Notes: The figures show event time coefficients and 95 pct. confidence intervals from estimating equation (1) on stock market participation. The regression is estimated separately for individuals whose partner participated in at least one year between five and two years before cohabitation (partner participate = 1), which includes 12,341 men and 17,020 women, and individuals whose partner did not participate (partner participate = 0), which includes 47,670 men and 42,991 women. Standard errors are clustered at the individual level. The relative change is reported in the top left-hand corner and is the effect one year after cohabitation as a share of the mean two years before cohabitation. The reported p-values are from F-tests of joint insignificance of the pre-trend coefficients five to three years before cohabitation.

4.2.2 Exit: Homeownership

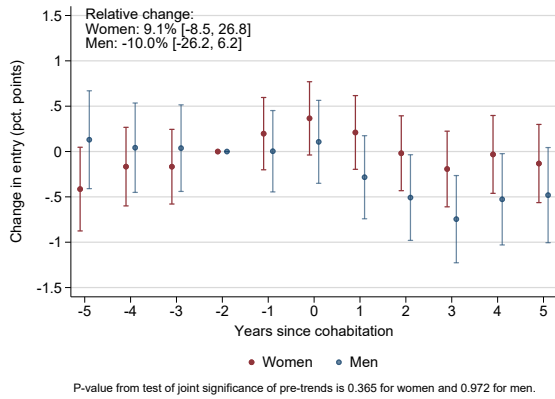
Our main results also show that there is a significant increase in exit from the stock market following cohabitation. In this section, we investigate whether homeownership contributes to the observed exit from the stock market following cohabitation. We have already shown that cohabitation coincides with homeownership for numerous couples, cf. Figure 1. To analyze the role of homeownership, we estimate the effect of cohabitation for two subsamples: a subsample of individuals who purchase a home in the year of cohabitation or in the first year after cohabitation (purchasers), and a subsample of couples who do not own residential property in the five years before and after cohabitation (renters).¹⁰ Figure 5 shows the estimates for purchasers. In the purchaser sample, it is especially important that we allow for anticipation for one year as purchasing individuals may have decided in advance of cohabitation to purchase a home together and therefore have adjusted their financial portfolio already prior to cohabitation. The pre-trends in all three panels are statistically insignificant, which supports our main identifying assumption.

Figure 5 panel (b) shows a significant increase in exit from the stock market in the first two years of cohabitation, which coincides with when they become homeowners. Strikingly, the effect sizes are more than twice the size of the main results. This result suggests that the barriers associated with homeownership, such as the liquidity needed to finance the down payment for a residential property or the increased risk from property price uncertainty, leads to crowding out of stock holdings. The increased exit among couples who purchase a home matches the findings by Brandsaas (2021), who uses survey data from the US and finds higher exit rates among households who become first-time homeowners compared to other renting households. Entry into the stock market is nearly unchanged for the purchasers, cf. panel (a). If anything, entry decreases for male purchasers following cohabitation. However, the increase in exit does

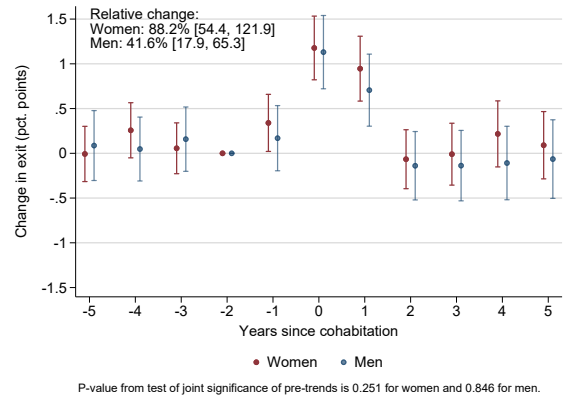
¹⁰The purchaser sample is defined based on individual home purchase, but the results are unchanged if we instead focus on couples where both partners become homeowners at cohabitation. The restriction that renters need to be renting throughout all five years following cohabitation ensures that none of the estimates in the figure are affected by homeownership. In unreported regressions, we test different definitions of renters (e.g., those who do not own residential property until two or three years after cohabitation), and the effects right after cohabitation are unchanged. Hence, we are not concerned about the representativeness of the renters subsample.

not appear to be large enough to generate a significant decrease in the participation rate for purchasers, cf. panel (c). The results for purchasers greatly contrast the pattern for renters shown in Figure 6. Among renters, there is no change in exit for men and only a small increase in exit for women following cohabitation, while there is a significant increase in entry. This suggests that the increase in exit is primarily driven by couples purchasing a home following cohabitation.

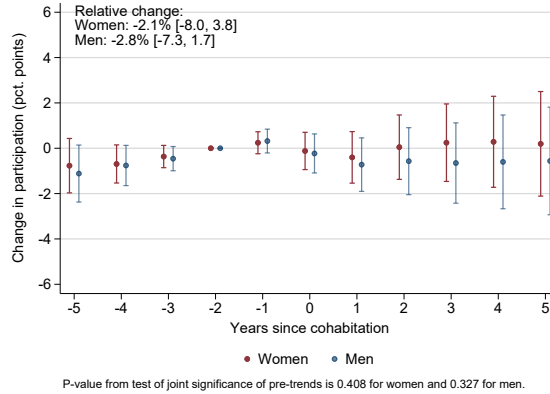
Figure 5: Effect of Cohabitation on Stock Market Participation for Purchasers



(a) Entry into the stock market



(b) Exit from the stock market



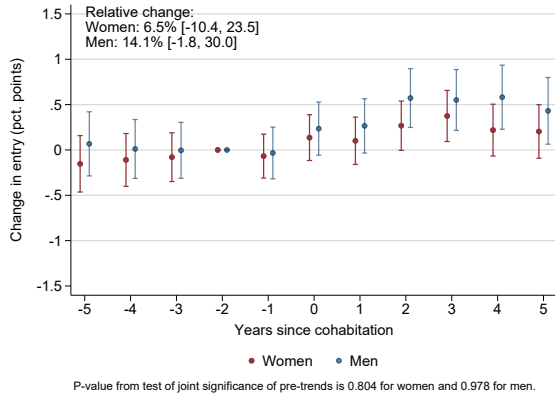
(c) Stock market participation

Notes: The figures show event time coefficients and 95 pct. confidence intervals from estimating equation (1) for individuals who purchase a home the year of or the year after cohabitation (11,258 men and 10,999 women). The regression is estimated separately for men and women. Standard errors are clustered at the individual level. The relative change is reported in the top left-hand corner and is the effect one year after cohabitation as a share of the mean two years before cohabitation. The reported p-values are from F-tests of joint insignificance of the pre-trend coefficients five to three years before cohabitation.

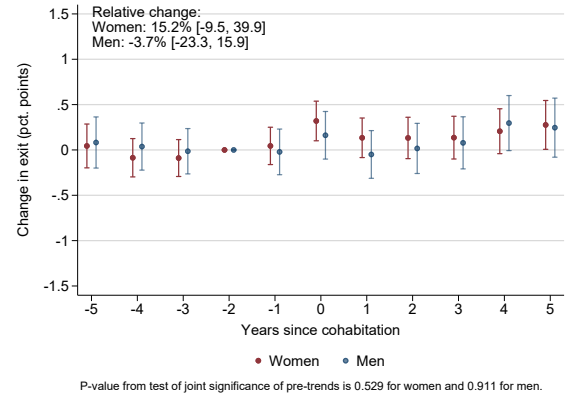
Figure 6 panel (c) shows that there is in fact a positive effect on stock market participation for men who rent. For women, the effects are also suggestive of an increase in participation. We thus find that individuals who purchase a home at cohabitation are more likely to exit the stock

market, while individuals who rent during the entire period are more likely to participate in the stock market following cohabitation. This suggests that cohabitation has a positive effect on stock market participation for individuals who rent, but that the liquidity needs and additional risk associated with becoming homeowners likely offset the positive effect for individuals who purchase a home.

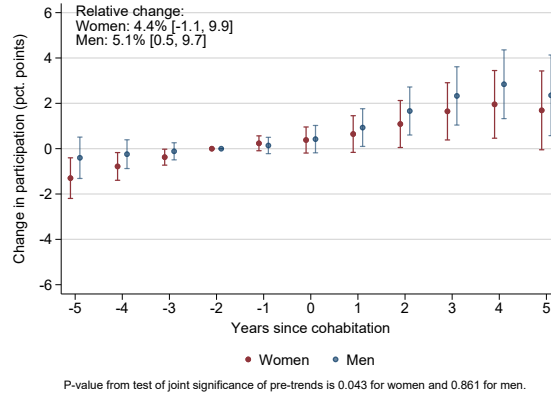
Figure 6: Effect of Cohabitation on Stock Market Participation for Renters



(a) Entry into the stock market



(b) Exit from the stock market



(c) Stock market participation

Notes: The figures show event time coefficients and 95 pct. confidence intervals from estimating equation (1) for couples who do not own a home in the five years before and after cohabitation (18,032 couples). The regression is estimated separately for men and women. Standard errors are clustered at the individual level. The relative change is reported in the top left-hand corner and is the effect one year after cohabitation as a share of the mean two years before cohabitation. The reported p-values are from F-tests of joint insignificance of the pre-trend coefficients five to three years before cohabitation.

4.3 Robustness

In this section, we conduct a placebo test and show that our results are robust to different control specifications, alternative TWFE methods, and excluding couples who get married.

Placebo To corroborate our findings, we conduct a placebo test where we assign each couple a random cohabitation year when individuals are between 23 and 35 years old. We then estimate equation (1) with the placebo cohabitation event dummies and show that there is no change in entry or exit following the placebo cohabitation year, cf. Appendix Figure A.2. This result corroborates that our estimates reflect the effects of cohabitation.

Alternative Control Specification In our main regressions, we control for each individual's and their partner's income and wealth rank at age 21. An alternative approach to capture individuals' available resources before cohabitation is to control for income and wealth rank two years prior to cohabitation instead of at age 21. However, ranking individuals two years prior to cohabitation would mean that the ranks are based on income across people of potentially very different ages.¹¹ The propensity to invest in stocks likely also varies across education level, and we therefore estimate equation (1) where we instead control for income and wealth rank two years prior to cohabitation and include education dummies two years prior to cohabitation. We use a simple categorization of tertiary vs. non-tertiary education, but a more detailed categorization within tertiary and non-tertiary degrees yields similar results. The estimates are qualitatively unchanged, cf. Appendix Figure A.3. Thus, our results are not sensitive to controlling for income, wealth and education two years prior to cohabitation.

Alternative TWFE Methods Recent literature in econometric methods has questioned the interpretation and reliability of TWFE estimation.¹² The main concern is that the interpreta-

¹¹Another approach could be to control continuously for income and capture income changes directly, but such changes may result from cohabitation as found by Larsen (2023). This implies that we would be controlling for an outcome of cohabitation, which may bias the estimates (Angrist and Pischke (2009)). This reasoning also implies that we do not control for marriage or children, as they also follow from cohabitation.

¹²This literature includes contributions by, e.g., de Chaisemartin and D'Haultfœuille (2020), Goodman-Bacon (2021), Sun and Abraham (2021), Callaway and Sant'Anna (2021), and Borusyak, Jaravel, and Spiess (2024). See Roth et al. (2023) for a recent overview.

tion of the coefficients may break down if individuals are treated at different times and there are heterogeneous effects across treatment timing. The TWFE estimator might in this case not yield an appropriately weighted average of treatment effects. In our case, this would be a concern if there are different effects of cohabitation on stock market participation for individuals cohabiting at age 23 compared to individuals cohabiting at, say, age 30. The reason for the unclear interpretation is that the estimator combines standard comparisons between treated individuals and not-yet treated individuals with "bad" comparisons between individuals who are both already treated, which can lead to negative weights if there are heterogeneous effects across treatment timing (See Roth et al. (2023) or the references in footnote 12 for more detail). New estimation methods have been proposed to overcome the problem, and we implement Sun and Abraham (2021)'s and Borusyak, Jaravel, and Spiess (2024)'s strategy.¹³ Appendix B provides further details on the implementation. Our results are qualitatively similar when using the new methods, cf. Appendix Figures B.5 and B.6. The only result that differs is entry for men, which seems to be unchanged at cohabitation according to Borusyak, Jaravel, and Spiess (2024)'s method. This could be in accordance with our main results in Figure 2 where there is a significant increase in entry for men relative to two years prior to cohabitation, but the estimated effect is not significantly different from the pre-cohabitation estimates, which suggests that the increased entry for men is statistically weaker than for women. Overall, the results suggest that the concern associated with the TWFE method is not a significant concern for our conclusions.

Estimation Without Married Couples Previous literature, such as Love (2010) and Christiansen, Joensen, and Rangvid (2015), has shown that marriage can affect stock market participation. Our main estimation sample excludes couples who get married prior to or in the same year as cohabitation, but includes couples who get married after cohabitation. To show that our results are driven by cohabitation and not marriage, we estimate our main regression for a sample who do not get married until at least three years after cohabiting. The results are

¹³Borusyak, Jaravel, and Spiess (2024) compare four of the new estimators mentioned in footnote 12 using a simulated panel, and they all yield very similar results. We therefore only test two approaches, Sun and Abraham (2021) and Borusyak, Jaravel, and Spiess (2024), to check that our estimates do not suffer from the above concern and that the two methods yield similar results.

qualitatively unchanged, cf. Appendix Figure A.4.

5 Concluding Remarks

In this paper, we show that the presence of a partner can affect individuals' propensity to participate in the stock market. We investigate the effect of cohabiting with a partner by comparing stock market participation among individuals in the same cohort who cohabit at different ages. Cohabitation increases entry into the stock market for some and exit for others and therefore has both a positive and a negative effect on stock market participation. We show that those who enter the stock market are predominantly individuals who move in with a partner with stock market experience, which suggests that information spill-over within couples can increase participation. We also show that exit predominantly occurs in couples who purchase a home at cohabitation, and that individuals who rent are in fact more likely to participate in the stock market following cohabitation. This suggests that liquidity needs and additional risk from home purchase can offset the positive effects of cohabitation on participation for individuals who become homeowners. Our results thus imply that individuals' financial decisions can be affected by their partner at an early stage in the relationship and highlight the importance of information and home purchase for portfolio choice decisions.

We are, to the best of our knowledge, the first to document the link between portfolio choice and the transition from being single to living in a cohabiting couple. Stock market participation is just one aspect of portfolio choice, and our results encourage future investigation of patterns in the entire saving portfolio. Access to register data on the exact types of stocks owned could also allow for further analysis of whether couples invest similar amounts of money and buy similar stocks. Additionally, since our results show that financial behavior changes already at cohabitation, a deeper understanding of the transition from being single to being in a couple, including a potential convergence of saving patterns within couples, could bring new insights on intra-household decision-making. This analysis would be particularly interesting to combine with a survey that could shed light on the factors that individuals account for when making saving decisions and the exact changes they experience(d) at cohabitation.

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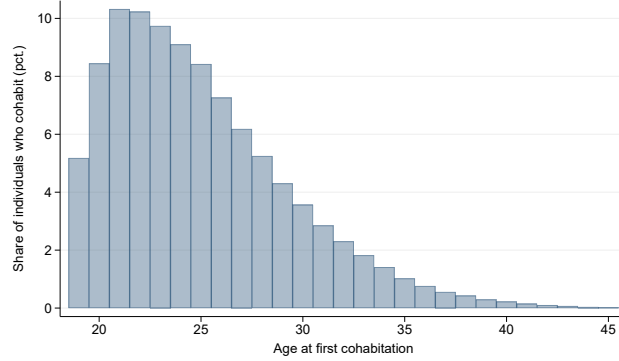
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A Additional Figures and Tables

Figure A.1: Distribution of Individuals' Age at their First Cohabitation



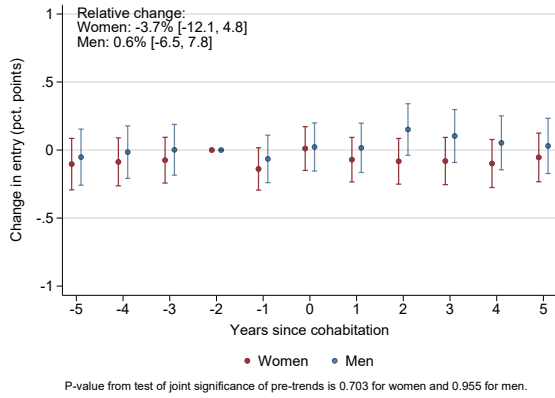
Notes: The figure shows the distribution of individuals' age at their first cohabitation. The histogram is based on 561,096 individuals who cohabit for the first time between 2002 and 2014.

Table A.1: Financial Literacy and Stock Market Participation

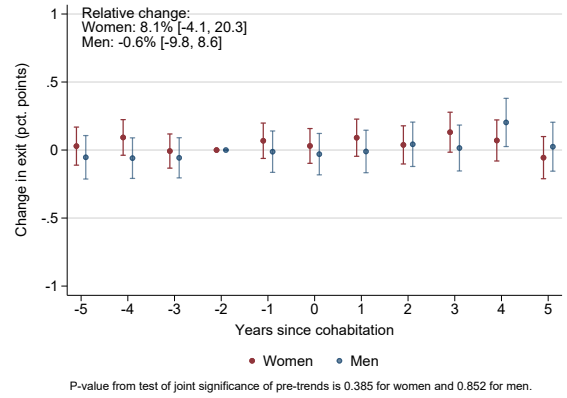
| | Partner with financial degree | Partner without financial degree |
|------------------------------------|----------------------------------|-------------------------------------|
| Panel A: Women | | |
| 2 years before cohabitation (pct.) | 23.0 | 17.3 |
| 1 year after cohabitation (pct.) | 25.3 | 17.8 |
| Observations | 4,525 | 55,486 |
| Panel B: Men | | |
| 2 years before cohabitation (pct.) | 33.2 | 23.6 |
| 1 year after cohabitation (pct.) | 35.7 | 24.8 |
| Observations | 3,245 | 56,764 |

Notes: The table reports the percent of individuals participating in the stock market before and after cohabitation. Financial degree is defined two years prior to cohabitation and indicates that the individual has completed a financial degree or is enrolled in a financial education program in that year.

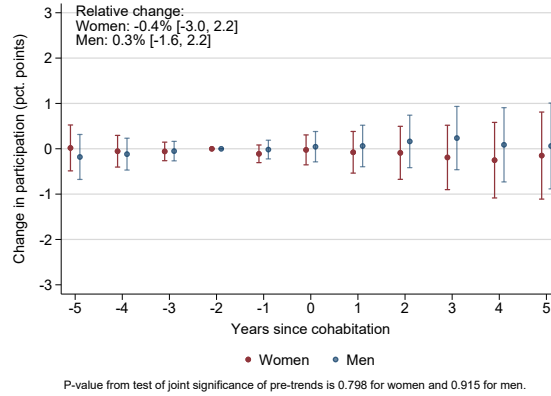
Figure A.2: Placebo Test



(a) Entry into the stock market



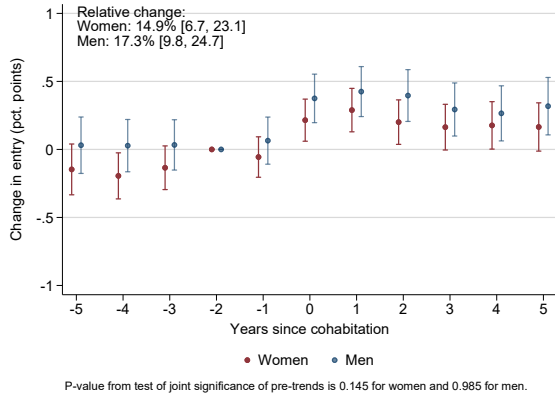
(b) Exit from the stock market



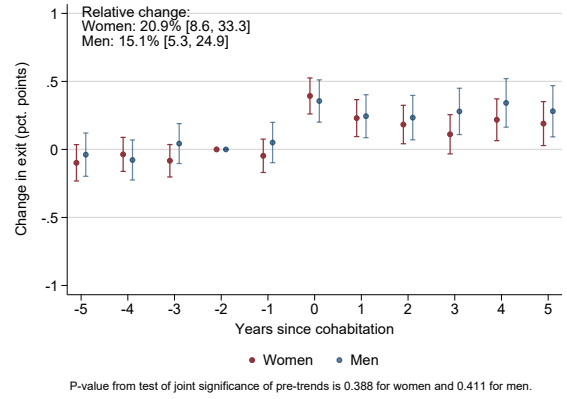
(c) Stock market participation

Notes: The figures show event time coefficients and 95 pct. confidence intervals from estimating equation (1) where each individual is assigned a placebo year of cohabitation. The regression is estimated separately for men and women for 59,914 couples. Standard errors are clustered at the individual level. The relative change is reported in the top left-hand corner and is the effect one year after cohabitation as a share of the mean two years before cohabitation. The reported p-values are from F-tests of joint insignificance of the pre-trend coefficients five to three years before cohabitation.

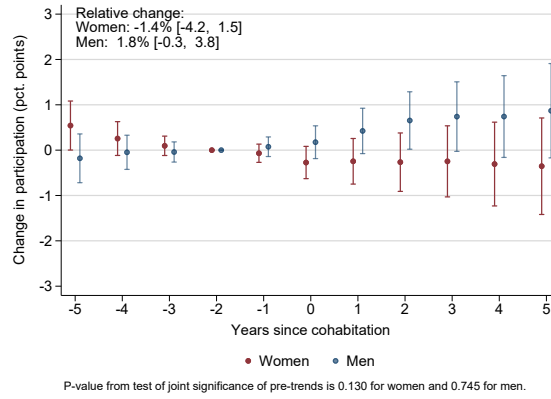
Figure A.3: Alternative Control Specification



(a) Entry into the stock market



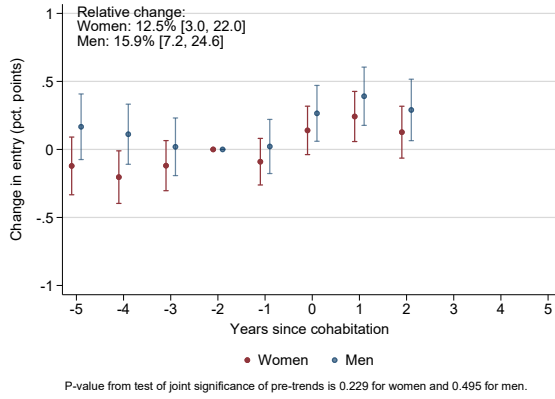
(b) Exit from the stock market



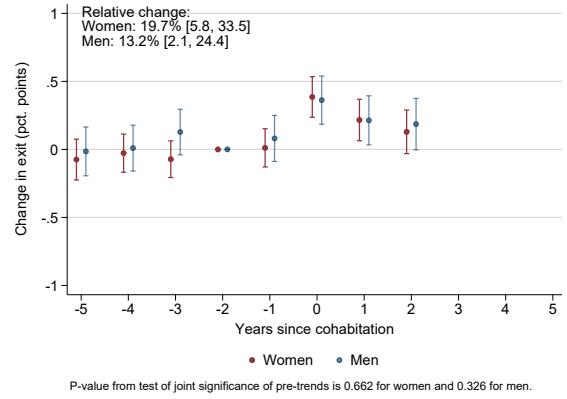
(c) Stock market participation

Notes: The figures show event time coefficients and 95 pct. confidence intervals from estimating equation (1) separately for men and women for 60,011 couples. Instead of controlling for individuals' and their partners' income and wealth rank at age 21, we control for their income and wealth rank two years before cohabitation and include an indicator for tertiary education. Standard errors are clustered at the individual level. The relative change is reported in the top left-hand corner and is the effect one year after cohabitation as a share of the mean two years before cohabitation. The reported p-values are from F-tests of joint insignificance of the pre-trend coefficients five to three years before cohabitation.

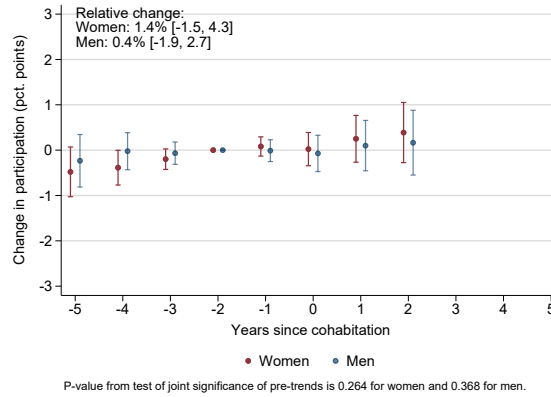
Figure A.4: Estimation Without Married Couples



(a) Entry into the stock market



(b) Exit from the stock market



(c) Stock market participation

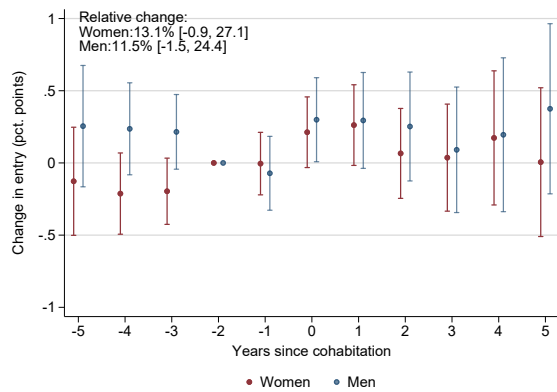
Notes: The figures show event time coefficients and 95 pct. confidence intervals from estimating equation (1) for couples who remain unmarried until at least three years after cohabitation. We therefore only show the estimates until two years after cohabitation. The regression is estimated separately for men and women for 49,214 couples. Standard errors are clustered at the individual level. The relative change is reported in the top left-hand corner and is the effect one year after cohabitation as a share of the mean two years before cohabitation. The reported p-values are from F-tests of joint insignificance of the pre-trend coefficients five to three years before cohabitation.

B Implementation of Alternative TWFE Methods

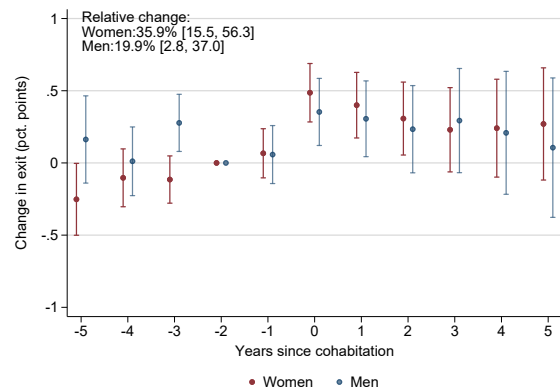
The first alternative approach that we test is Sun and Abraham (2021)’s estimation strategy. Their approach estimates a TWFE regression with interactions between event time indicators and indicators for the year of treatment, where the latest treated cohort is the control group. The estimates for each event time are aggregated across treatment cohorts using estimated weights based on the cohort share of all treated individuals at a given event time. In contrast to our approach with age and year fixed effects, their approach controls for individual and year fixed effects. The inclusion of individual fixed effects could be an important distinction if one is worried about unobservable heterogeneity that correlates with the timing of cohabitation and the propensity to participate in the stock market, and that we do not already capture with our controls. When we implement their approach, we also control for age fixed effects to continue to account for the persistent age trend in stock market participation. Appendix Figure B.5 shows the resulting estimates. The results are qualitatively similar, and our results are therefore also not sensitive to the inclusion of individual fixed effects. The confidence intervals widen when implementing the new estimation methods because they balance across calendar time instead of event time, which leads to fewer observations and therefore reduced precision.

Second, we implement Borusyak, Jaravel, and Spiess (2024)’s estimation strategy. Their estimator is an imputation estimator. It estimates a TWFE regression for individuals in time periods where they are not yet treated and uses the estimates to predict the never-treated outcomes for treated individuals at a given event time. The estimated average treatment effects are averaged across the difference between individuals’ outcomes and the predicted never-treated outcomes. Appendix Figure B.6 shows the estimates using Borusyak et al.’s method. We again include age fixed effects. The results are similar to the results using Sun and Abraham (2021)’s approach, apart from the effect on entry for men.

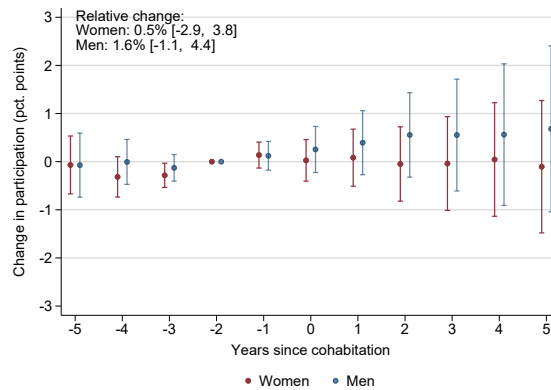
Figure B.5: The Effect of Cohabitation on Stock Market Participation with Sun and Abraham (2021)'s Approach



(a) Entry into the stock market



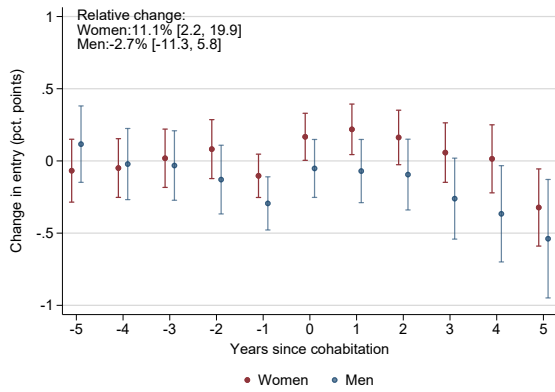
(b) Exit from the stock market



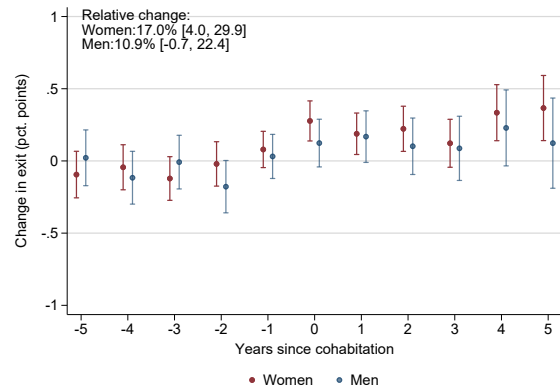
(c) Stock market participation

Notes: The figures show event time coefficients and 95 pct. confidence intervals using Sun and Abraham (2021)'s approach for 39,436 couples. Standard errors are clustered at the individual level. The relative change is reported in the top left-hand corner and is the effect one year after cohabitation as a share of the mean two years before cohabitation.

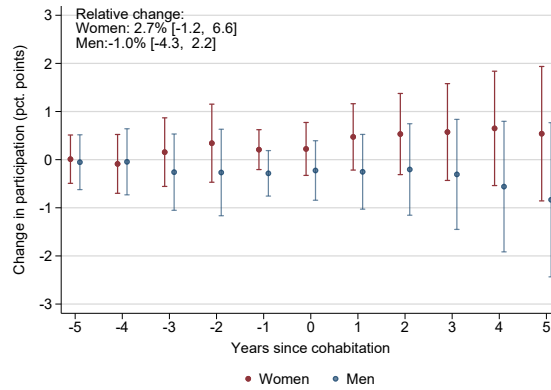
Figure B.6: The Effect of Cohabitation on Stock Market Participation with Borusyak, Jaravel, and Spiess (2024)'s Approach



(a) Entry into the stock market



(b) Exit from the stock market



(c) Stock market participation

Notes: The figures show event time coefficients and 95 pct. confidence intervals using Borusyak, Jaravel, and Spiess (2024)'s approach for 40,094 couples. Standard errors are clustered at the individual level. The relative change is reported in the top left-hand corner and is the effect one year after cohabitation as a share of the mean two years before cohabitation.