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The effect of the statutory retirement age on spousal labor force participation

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Abstract

We investigate the *direct* effect of the oldest spouse's statutory retirement age on the retirement behavior of couples. The Dutch statutory retirement age increased stepwise from 65 years and 3 months in 2015 to 65 years and 9 months in 2018. Using a regression discontinuity approach, we find a positive direct effect of the statutory retirement age on labor participation (extensive margin) and hours worked of both partners. More specifically, we find that about one third of the oldest spouses retire at the statutory retirement age. This has not changed much after the increase in the statutory retirement age. Moreover, we find that younger partners decrease their labor supply by up to almost 2 percentage points once the oldest spouse reaches the statutory retirement age. Male younger partners are twice as responsive than women. The responsiveness is also about twice as strong in high-income households than in low-income households. The responsiveness in terms of hours worked are somewhat smaller. Lastly, the original statutory retirement age of 65 still has a negative effect on the labor supply decision of the younger partner, especially when their older partner already reached the statutory retirement age. These results indicate that, in addition to the leisure complementarity of partners, social norms and reference points seem to affect retirement decisions.

I Introduction

In light of an increasing life expectancy and decreasing fertility, many countries have made adjustments to their pension systems. A typical reform in many countries was – and still is – raising the statutory retirement age (OECD, 2011). An obvious objective of this reform is that older individuals retire from the labor force at a later moment. A higher pension age has many other potential effects: it may impact household behavior (e.g. saving and consumption decisions), firm behavior (e.g. human capital investments, hiring and firing decisions), and worker behavior (e.g. educational and health-related choices). The relevance of such effects is often not yet known. In this paper, we focus at the effect of the oldest partner's statutory retirement age on both partners' retirement choices and hours worked. This household perspective has not received much attention yet in the earlier literature.

We distinguish three channels that may play a role in the retirement decisions of households. First, financial incentives of the pension program(s) affect spousal labor force participation. Cross-effects between financial incentives for the one spouse on retirement behavior of the other are likely in case of joint optimization within the household (Van der Klaauw and Wolpin, 2008). Second, spouses may have a preference to enjoy leisure time together. Such leisure complementarity implies that later retirement by one spouse will also lead to later retirement of the other spouse (Coile, 2004; Schirle, 2008; and Atalay et al., 2019). Third, social norms and reference points may affect retirement decisions around the statutory retirement age (Van Erp et al., 2014). Results found by Behaghel and Blau (2012) imply that retirement behavior in the US cannot be explained by just financial incentives, and that reference dependence and loss aversion may play a role. Results of Mastrobuoni (2009) suggest that social norms play an important role in explaining retirement behavior. As mentioned by Seibold (2021), several studies estimate the effect of pension reforms involving statutory retirement ages, but evidence on the *direct* effect of statutory ages is scarce. We contribute to this scarce literature, and as far as we know we are the first to investigate the *direct* effect of an increased statutory retirement age in the context of couples.[1] That is, we investigate the *direct* effect of spouse's statutory retirement age on individual's labor supply (in addition to their own statutory retirement age) and estimate these effects for successive cohorts with increasing statutory retirement ages. Furthermore, we investigate the effect of the old "traditional" statutory retirement age of 65.

[1] This complements earlier papers that study how early retirement incentives for one of the partners reduced spousal labor supply (e.g. Bloemen, Hochguertel, & Zweerink, 2019 and Hospido & Zamarro, 2014).

To estimate the effects, we use high-quality monthly Dutch administrative data, which are available for the whole Dutch population for the period January 2015 – December 2018[2]. We exploit the discontinuity at the statutory retirement age and the stepwise increase in the statutory retirement age since 2013. In 2013, 2014, and 2015 the statutory retirement age increased by one month each year, and starting from 2016, it increased by 3 months per year. So, between 2015 and 2018, the statutory retirement age was raised by 6 months in total: from 65 years and 3 months to 65 years and 9 months. As a result of the gradual increase, cohorts face different statutory retirement ages.

Related to Deshpande, Fadlon, and Gray (2021), we use a regression discontinuity framework. Our double regression discontinuity design (Lalive and Parrotta, 2017) reveals how both spouses in a couple decide on their labor supply and retirement given the pension (in-)eligibility of their older partner. More precisely, we estimate the labor supply of the youngest partner as a function of their own and spousal age, their own and spousal statutory retirement age, and several control variables. Moreover, we run similar regressions to investigate hours worked (the intensive margin of labor supply).

In line with earlier findings, we find a direct effect of one's own statutory retirement age of almost 30%. The spouse's statutory retirement age has a significant but small direct effect on individual's labor supply: almost 1%-point of females and 2%-points of males retire when their older spouse reaches the statutory retirement age. The results suggest that couples like to spend leisure time together, which is more affordable for high wage households than for low wage households. The "traditional" statutory retirement age still has an effect: when the older spouse already reached the retirement age, reaching the age of 65 by the younger female spouse increases retirement with 7%-points. For younger male spouses this effect is even 9.5%-points.[3]

The contribution to the literature is threefold. We contribute to the literature of household decision making regarding the retirement decision. First, we identify how different spousal labor supply responses evolve when the statutory retirement age increases. In addition to earlier studies, we also analyze labor supply responses for couples where the male partner is the younger partner (compare a.o. Zweimüller, Winter-Ebmer, and Falkinger, 1996; Lalive and Parrotta, 2017). Also, we contribute to the

[2] We cannot take into account the first cohorts that faced a pension eligibility increase as before 2015 younger partners were entitled to partner pension. This means that younger partners received a fiscal payment when the older partner reached the public pension eligibility age. Limiting ourselves to the period after 2014, we can circumvent this possible bias in our result.

[3] These are the effect for the cohort 65 years and 9 months. For the cohorts 65 years and 3 months and 65 years and 6 months we find smaller effects.

literature on partial and phased retirement by investigating effects on the intensive margin (hours worked). Finally, we add to the literature by zooming in on different income groups. We analyze whether household retirement behavior differs between high- and low- wage income groups.

The setup of the rest of this paper is as follows. Section II provides a literature review. Section III describes the institutional setting. Section IV presents descriptive statistics and section V describes the estimation method and results. Section VI shows a sensitivity analysis of our results. Lastly, section VII provides a discussion of our findings and concludes.

II Literature Review

This section discusses the literature on household retirement. When considering household retirement decisions, the baseline models describe a problem of household coordination in which several channels play a role. In this review, we focus on three main channels, namely: financial incentives, leisure complementarity, and sociological and psychological channels. Thereafter we discuss some retiriement research that has focused on the Netherlands.

II.A Main channels in household retirement decisions

Starting with financial incentives, Blau and Gilleskie (2006) and Van der Klaauw and Wolpin (2008) build theoretical models in which the effect of retirement runs through the household budget constraint. Both papers carefully explain how financial incentives of pension programs affect the labor participation decision of couples. Henretta and O'Rand (1983) show that financial characteristics of both partners play a role in their retirement decisions. They find that the age of both partners', their hourly wages, and pension entitlements affect the retirement decisions of each member in the household.

The second channel concerns leisure complementarities. Hurd (1990) studies joint retirement choices in models without uncertainty. Casanova (2010) builds a model taking uncertainty into account when explaining how leisure complementarities affect the retirement decision of both household members. Michaud and Vermeulen (2011) build a model in which they model household utility as the weighted sum of male and female utility. Using this specification and making use of the Health and Retirement Study, their estimates show that leisure complementarity plays an important role in the retirement decision. Zweimüller, Winter-Ebmer, and Falkinger (1996) draw a similar conclusion by examining how different statutory retirement ages for males and females in Austria affect spousal labor supply. They find that the female retirement age depends on the male's retirement age but not vice versa. Lalive and Parrotta (2017) confirm this finding by exploiting the difference in male and female statutory retirement

ages in Switzerland. Coile (2004) finds similar results when examining dual-earner couples in the U.S. Schirle (2008) shows that – due to the increase in retirement age in many G20 countries (see OECD (2011)) – the partner decided to work longer as well. More recently, Atalay et al. (2019) discuss how an increase or decrease in the retirement age affects household labor supply decisions. Exploiting reforms in Austria and Vietnam, they find that the partner adjusts his or her labor supply regardless of whether there is an increase (Austria) or decrease (Vietnam) in the statutory retirement age. More specifically, the Vietnam veteran pension fund induced veteran's wives to retire around 1.5 to 2.6 years earlier on average, while the estimates for Austria imply that a 5-year increase in female pension eligibility led husbands to retire later by 0.34 to 0.84 years on average.

Third, sociological and psychological effects may play a role in household retirement decision-making. Eismann, Henkens and Kalmijn (2019) discuss two possible channels of how the individual can influence the partner's labor supply decision. First, there is the channel of altruism. This channel states that, since retirement is generally associated with healthier behavior (Syse, 2017), an individual that cares about the partner's health might want that the partner to retire. Second, there is the channel of self-interest. Individuals want their partner to retire early if it benefits him or herself. This is for instance the case when the quality of the relationship is high or when long working days of the other person negatively affects the well-being of the other person. Another channel focuses on the importance of mental health. Picchio and Van Ours (2019) find that mental health differs between males and females after retirement. Single men tend to experience a drop in mental health. For males with a partner, the effect is positive: they experience a positive effect on their mental health as well as their partner's mental health. On the other hand, female retirement hardly has any effect on their mental health or the mental health of the partner. Moving away from sociological channels within the household, the initial age at which older workers were eligible for pension benefits may as well play a role in the retirement decision. More precisely, Behaghel and Blau (2012) argue that the initial age of 65 at which social security payments became available is still an important reference point for workers that are eligible at a higher age. The authors argue that a combination of the initial reference point combined with loss aversion of leisure due to an increase of the statutory retirement age may make workers less likely to work longer and instead retire at the age of 65. In a similar vein, Seibold (2021) shows that statutory retirement ages in Germany are an effective policy tool to influence retirement behavior. This is not the case for the US where an increase in the retirement age does not seem to result in an increase in labor supply (Deshpande, Fadlon, and Gray, 2021).

II.B Retirement research in the Netherlands

Having discussed the most important channels affecting joint retirement decisions, it is important to discuss what research regarding these channels has already been conducted for the Dutch pension system. Considering financial incentives, Atav, Jongen, and Rabaté (2019) and Koning, Gelderblom, and Gravesteijn (2017) show that the gradual increase in the statutory retirement age as of 2013 increased the individual labor supply of older Dutch workers.

Focusing on spousal retirement, Deelen and Van Vuuren (2009) argue that an increase in the education levels resulted in a higher employment rate for both males and females, resulting in a higher earning capacity for both (i.e. higher opportunity costs for not working). Moreover, an increase in the female education level increased the likelihood of being employed at later ages, making it for the partner less attractive to retire early. The reason for this is that males/females postpone their (early) retirement decision as they value leisure time with their spouse. Analyzing the female labor force participation, Euwals, Knoef, and van Vuuren (2011) argue that social norms influence the decision to participate and conclude that cohort effects are important for females born between 1935-1955. They postulate that the role of social norms and attitudes towards paid employment is important in explaining the development of female labor force participation over successive cohorts. Hospido and Zamarro (2014) make use of share data to investigate joint retirement decisions in several European countries including the Netherlands. Exploiting the early retirement and official retirement possibilities in those countries, they find a joint retirement effect for women, but not for males. García and van Soest (2022) discuss how the abolition of partner pension in the Netherlands changes the joint retirment decision. They point to a change in financial incentives as well as a change in the social norm that decreases the likelihood of retiring together. Lastly, Bloemen, Hochguertel, and Zweerink (2019) discuss how early retirement incentives affect the retirement behavior of the partner. To do so, they exploit an attractive early retirement policy for civil servants. They find that early retirement incentives for male civil servants induced their wives' probability to retire by ten percentage points.

III Institutional Setting

We describe the institutional setting in the Netherlands. We first discuss the Dutch pension system and thereafter we discuss other relevant programs that could be used as pathways into early retirement.

III.A Dutch Pension System: set-up

Like most modern pension systems, the Dutch pension system consists of three pillars, which allow workers to accumulate pension rights approximately equal to 70% of their average gross wage over their

working life. The first pillar is the pay-as-you-go publicly funded pension benefits (in Dutch: AOW). Individuals start receiving these benefits from the statutory retirement age. Each individual that has lived for 50 years or more in the Netherlands receives an amount equal to 70% (50%) of the minimum income after reaching the statutory retirement age[4] when he or she lives alone (with a partner).[5] A policy review of the Ministry of Social Affairs shows that the take-up rate of public pension benefits is very high, and it successfully eliminates poverty among older individuals.[6]

The second pillar pension is the pension that the employer and employee jointly save via a pension fund or insurance company. Unlike the first pillar, this pension pillar heavily depends upon work history and earnings per year. Another difference is that it is possible to early withdraw second pillar pension benefits before the (first pillar) statutory retirement age. Lastly, the third pillar consists of own individual savings on top of the first and second pillars. Under some conditions it is possible to make tax-favored pension savings.

III.B Reforms in the first pillar of the Dutch pension system

The Dutch first pillar pension scheme faced two major reforms in the past decade.[7] First, the first pillar partner pension was abolished. Before January 1st, 2015, individuals received partner pension from the statutory retirement age if their partner did not yet reach this age. The amount of first pillar partner pension depended on the partner's income (Van den Berg, et al., 2007). First pillar partner pension was abolished to keep the pension system sustainable. Moreover, it was deemed less necessary since the increase in the economic independence of female partners.

The second major reform is the gradual increase of the statutory retirement age. Up to January 1st, 2013, the first pillar statutory retirement age was 65 years. In 2013, 2014, and 2015, the statutory retirement age increased by one month each year. In 2016, 2017, and 2018, the statutory retirement age increased by three months per year. Table 1 provides a precise overview of the statutory retirement age per year and birth cohort.

[4] The buildup rate is 2 percent per year.
[5] Kok, Kroon, Luiten, & Schwartz (2019) find that these different benefit schemes hardly affect the choice of the elderly to (de)register as a couple, live together, or separately.
[6] See Ministry of Social Affairs (2019). The chance of living in poverty is lower above the statutory retirement age than at any other age.
[7] Kapteyn et al. (2018) provide an overview of all the reforms that have been implemented since the 1990s to increase labor force participation rates of older workers.

Year	Statutory retirement age (in years)	Birth Cohort (dd-mm-yyyy)
<2013	65	< 01-01-1948
2013	65 + 1/12	01-01-1948 up to 01-12-1948
2014	65 + 2/12	01-12-1948 up to 01-11-1949
2015	65 + 3/12	01-11-1949 up to 01-10-1950
2016	65 +6/12	01-10-1950 up to 01-07-1951
2017	65 + 9/12	01-07-1951 up to 01-04-1952
2018	66	01-04-1952 up to 01-01-1953

Table 1 The statutory retirement age for different birth cohorts. It is not possible to withdraw first pillar pension benefits prior reaching the statutory retirement age. Source: Rijksoverheid (2019).

III.C Reforms in the second pillar of the Dutch pension system

It is possible for workers to take up the second pillar pension before reaching the first-pillar statutory retirement age. However, the Dutch government made it less attractive to retire at an earlier age. For instance, pre-retirement pension arrangements between employers and employees were heavily restricted after 2006. Until 2006, the Dutch government subsidized early retirement routes. In 2006, this became gradually more restricted and a Life Cycle Saving Scheme (in Dutch: "Levensloopregeling")[8] was introduced. This arrangement was introduced to compensate individuals that reached the retirement age before January 1st, 2015. Although this arrangement was less attractive than the earlier arrangements, it was still financially attractive for younger partners to exit the labor force at a younger age, making it easier for couples to coordinate their joint retirement decision (i.e. when for instance one partner reaches the statutory retirement age). Moreover, this implies that cohorts after 2015 are not comparable to cohorts before 2015 as younger partners can no longer make use of this scheme (Van den Berg, et al. (2007)).

III.D Pathways into early retirement and legal changes

The increase of the statutory retirement age and the abolition of early retirement programs and lifecycle saving schemes may lead to an increased use of alternative social security programs. More precisely, alternative social security programs may serve as substitutes for the previously mentioned early retirement pathways. Over the last two decades, successive Dutch administrations tried to prevent this

[8] Grip, Lindeboom, and Montizaan (2012) Show that mental well-being was reduced for those that were ineligible for an early retirement plan.

form of social support substitution.[9] At the beginning of the 21st century, the government reduced the attractiveness of disability insurance. As of 2002, they came up with stricter reintegration rules in case of sickness. In 2003, the sickness benefit became less generous for workers employed by small firms and in 2008 it was implemented for all firms.

The maximum duration of unemployment insurance has been gradually decreased. From 2003 it is no longer possible to receive unemployment benefits up to retirement starting at the age of 57.5.[10] In 2006, the maximum benefit duration decreased from 5 years to 3 years and 2 months. As of 2015, the generosity of unemployment insurance was further reduced. Between January 1st, 2016, and January 1st, 2018, the benefit duration decreased gradually from 38 towards 30 months. Moreover, it takes more working years to get the full amount of benefit duration (de Pijper, et al., 2019).[11] However, this reform mostly affects workers with a large labor market history and therefore a large second pillar pensions benefit.[12] Nevertheless, all these measures seem to have limited alternative early retirement pathways via other social security programs (Ministry of Social Affairs, 2019).

Lastly, It is as important to analyze the conditions which allows workers to continue working beyond the statutory retirement age. Most sectors of industry can dismiss workers without any costs as soon as they reach the statutory retirement age.[13] As a consequence, workers in these sectors cannot continue in the job they had after reaching the statutory retirement age. A legal change in the Netherlands in the period 2014-2018 is the "Continuing to work Act[14]", which makes it more attractive for employers to hire workers after they reached the statutory retirement age. For instance, the notice period for dismissal for this group is reduced to 1 month[15] and the obligation to continue wage payment in case of illness is reduced to six weeks (instead of 2 years).

[9] See Euwals et al. (2012) for a more elaborate overview of reforms implemented in the Netherlands regarding the labor force participation of older workers.
[10] Although the IOW and IOAW are partially fulfilling this role nowadays, those programs are financially less attractive than the unemployment benefits.
[11] There will be no reduction in the months of unemployment benefits (WW) accumulated before the reform.
[12]There are several reasons for this. First, a reduction in the UI build-up only occurs for employees that have worked for more than 12 years. Earlier accrued rights are not affected. Second, a reduction in UI duration only occurs for workers with more than 30 years of labor market history. This groups is relatively small and also has very large second pillar pension benefits (given that they have accrued pension rights for at least 30 years).
[13] The Dutch terminology for this is "functioneel leeftijdsontslag".
[14] The Dutch name is "Wet doorwerken na AOW"
[15] This is the same notice period as for workers that are employed for less than 5 years. For workers that are longer employed, the notice period is in the range of 2 to 4 months, depending on the employment history.

IV Descriptive Statistics

We make use of administrative microdata from Statistics Netherlands. Using these data[16], we investigate household retirement decisions for a large number of households. More precisely, we have data on monthly earnings of employees, whether they are native, first, or second-generation immigrants, and whether at least one child is living within the household. In our analysis, we only focus on heterosexual couples that either are married or have a registered partnership and stay together over the period 2014-2018.[17] Next to this, household members should not be in the same pension cohort as defined in Table 1. Moreover, we exclude couples in which the oldest partner does not work or is self-employed.[18] In other words, the oldest partner should be either an employee or should be retired. For the youngest partner in the couple, there is no restriction other than that he or she cannot be self-employed.[19]

We limit ourselves to the households in which the oldest spouse reaches the public statutory retirement age as of 2015. Prior 2015, early retirement schemes were still in place such as the Life Cycle Saving Scheme and the first pillar partner pension (see section III). Therefore, we focus ourselves on couples in which the oldest partner reached the statutory retirement age as of 2015. Table 2 (Table 3) provide summary statistics for Dutch households for couples in which the male (female) is the oldest spouse.

The upper part of Table 2 shows us the monthly mean male and female income, as well as the part-time factor. For male and female income, we report the mean monthly income per year provided that the income is larger than zero. Focusing on the income variables, we observe that average male income is in most cells higher when compared to average female income. This does not hold for all years for the first two cohorts. Moreover, we observe a decline in the average monthly male income over the years. The reason for this is that all male workers reach the statutory retirement age in the period 2015-2018. For the younger female partner, this is not necessarily the case as their statutory retirement age is at a later moment in time.

[16] In particular, we make use of the datasets gbahuishoudensbus, spolisbus, gpapersoontab, and inpatab. The part-time factor is constructed with the variables svoltijddagen en sbaandagen from spolisbus.
[17] We take the first month of each year as a reference date to check whether each household is still together or not.
[18] To do so, we make use here of the inpatab dataset who indicates what the most important yearly source of income is for each individual. As we do not observe monthly data for self-employed workers we omit this category.
[19] More precisely, the younger partner may receive unemployment benefits, other forms of social assistance, and/or disability benefits. Lastly, it is as well possible for the younger partner to not receive any income at all. This information is stored in the variable inpsecj from the dataset inpatab.

In brackets below the monthly mean annual income, we report the mean annual part-time factor. The part-time factor is defined as hours worked divided by full-time hours. For instance, if an individual worked 15 full-time[20] days (roughly 78 hours) and a full-time job in a particular consists of month for 30 days (roughly 156 hours), the part-time factor for this person is equal to 0.5. In case an individual did not work in a particular month, we set the part-time factor equal to zero. The biggest drop in the part-time factor for males is observed one year after (the majority of) a particular cohort reaches the retirement age. For instance, the part-time factor drops from 0.32 in 2015 to 0.08 in 2016 for the male cohort with a statutory retirement age of 65 years and 3 months. For females, who are in a younger cohort than their male partner, we do not observe such a severe reduction. The most likely reason for this is that the younger female partner does not have to become eligible for pension benefits in the period 2014-2018.

Next to average male and female income, Table 2 provides information on the age difference between the spouses. Across all cohorts, this is roughly equal to 3.8 years, indicating that the younger female partner is on average 3.8 years younger than the older male partner. Table also 2 provides information on first and second-generation immigrants. The share of first-generation female immigrants is approximately 6.7%. For second-generation female immigrants, this is equal to roughly 4.5%. It is important to take this into account as first-generation immigrants may not be entitled to the full public pension benefit.[21] The share of first- and second-generation male immigrants is respectively roughly equal to 6.1% and 5.3% for all cohorts. The percentage of households with children fluctuates between 13.8% and 18.3%, where the presence of children is more frequent when the older male partner has a higher retirement age (i.e. when the male partner is younger). Having children that still live at home (and the corresponding costs associated with it) may have the intention to retire relatively late when compared to couples where this is not the case.[22] In total, we have 61,037 unique household observations.

For couples where the female is the oldest partner, we observe roughly the same pattern (see Table 3). We observe here as well that the net labor force participation of the oldest partner declines faster when compared to the net labor force participation of the youngest partner. Moreover, the monthly average annual income is higher for males than for females, and the same holds for the part-time factor. Lastly,

[20] Full-time is defined according to the collective labor agreement. If there is none, Statistics Netherlands defines a full-time workweek as 35 hours a week (see the variable "svoltijddagen" in spolisbus for more information).
[21] Each person living in the Netherlands accumulates two percent per year for old-age pension benefits (see section III). For instance, if a worker migrated to the Netherlands when he was 45 years old and retires at the age of 65.25, that person receives $20 * 2\% = 40\%$ of the total amount of public pension in the first year.
[22] See Damman, Henkens, and Kalmijn (2015).

the drop in the part-time factor is as well present for females one year after they reached the statutory retirement age. However, there are three main differences between these two tables. First, the percentage of households with children is substantially lower in households where the female is older than the male. Second, the mean age difference for couples where the female is the oldest partner is approximately one year less when compared to couples where the male is the oldest partner. Third, the number of couples for which the female is the oldest spouse is substantially lower when compared to couples where the male is the older spouse.

Male = old / pension age male		65+3	65+6	65+9
Mean male income (€) (Part-time factor)	2014	3715 (0.50)	3889 (0.60)	4035 (0.70)
	2015	3656 (0.32)	3844 (0.53)	4028 (0.63)
	2016	2213 (0.08)	3780 (0.35)	3950 (0.56)
	2017	1849 (0.06)	2166 (0.08)	3775 (0.36)
	2018	1641 (0.05)	1837 (0.07)	2228 (0.09)
Mean female income (€) (Part-time factor)	2014	1907 (0.29)	1960 (0.32)	1970 (0.35)
	2015	1964 (0.26)	2017 (0.29)	2024 (0.32)
	2016	1998 (0.22)	2045 (0.26)	2061 (0.30)
	2017	2012 (0.18)	2055 (0.22)	2090 (0.27)
	2018	2029 (0.15)	2056 (0.18)	2096 (0.23)
Mean age difference (age male – age female)		3.84	3.82	3.85
% female immigrant 1st		6.5	6.8	6.7
% female immigrant 2nd		4.4	4.8	4.6
% male immigrant 1st		6.4	6.1	5.8
% male immigrant 2nd		5.0	5.3	5.6
% household with child		13.8	15.3	18.3
Households		21,148	20,224	19,665

Table 2 Summary statistics male (old), female (young) by public pension eligibility of the husband.

Female = old / pension age female		65+3	65+6	65+9
Mean male income (€) (Part-time factor)	2014	4282 (0.60)	4242 (0.65)	4247 (0.71)
	2015	4352 (0.53)	4261 (0.59)	4293 (0.66)
	2016	4396 (0.44)	4266 (0.53)	4296 (0.60)
	2017	4200 (0.32)	4135 (0.43)	4205 (0.53)
	2018	3890 (0.24)	3829 (0.33)	4166 (0.43)
Mean female income (€) (Part-time factor)	2014	1833 (0.34)	1927 (0.4)	1950 (0.46)
	2015	1877 (0.22)	1931 (0.34)	1953 (0.41)
	2016	1429 (0.04)	1976 (0.22)	1938 (0.36)
	2017	1326 (0.03)	1259 (0.04)	1974 (0.23)
	2018	1191 (0.02)	1139 (0.03)	1297 (0.04)
Mean age difference (age female – age male)		2.77	2.67	2.69
% female immigrant 1st		9.6	9.9	8.4
% female immigrant 2nd		5.5	5.1	6.7
% male immigrant 1st		6.2	6.0	6.0
% male immigrant 2nd		6.1	5.2	5.5
% household with child		8.9	9.5	12.3
Households		2663	2526	2473

Table 3 Summary statistics Female (old) and male (young) by public pension eligibility of the wife.

IV.A Graphical evidence

We plot the average labor force participation of the youngest spouse 6 months prior, and after the older spouse reaches the statutory retirement age for all couples that are not in the same pension cohort. We do this for both types of couples where respectively males and females are the oldest spouse.

The graphs below visualize how the younger partner reacts to the statutory retirement age of their older spouse. Analyzing figures 1-3**,** we observe a small discontinuity in the labor supply of the younger partner when the older male spouse reaches her pension eligibility. More precisely, the drop in average labor force participation of the younger spouse one month prior and one month after the oldest spouse reaches her statutory retirement age is approximately 0.5 to 1 percentage points. In figures 4-6, we provide graphical evidence for couples where the female is the oldest spouse. We observe here a similar pattern as in figures 1-3.

The decrease in labor force participation is already visible before reaching the statutory retirement age. This could be due to early retirement, unemployment, and the unwillingness of employers to hire older workers.[23]

Appendix A.1 shows graphs that visualize how males and females react to their own pension eligibility. Analyzing these graphs, we observe a strong decline in labor force participation at the moment someone is entitled to first pillar pension benefits, indicating that individuals react strongly to their own pension eligibility.

[23] Schippers and Vlasblom (2019) argue that the age of older workers is the most important reason why they cannot find a job. This is because their search intensity is not different when compared to younger workers and that reducing their wage standards does not have any effect on the chances of being hired.

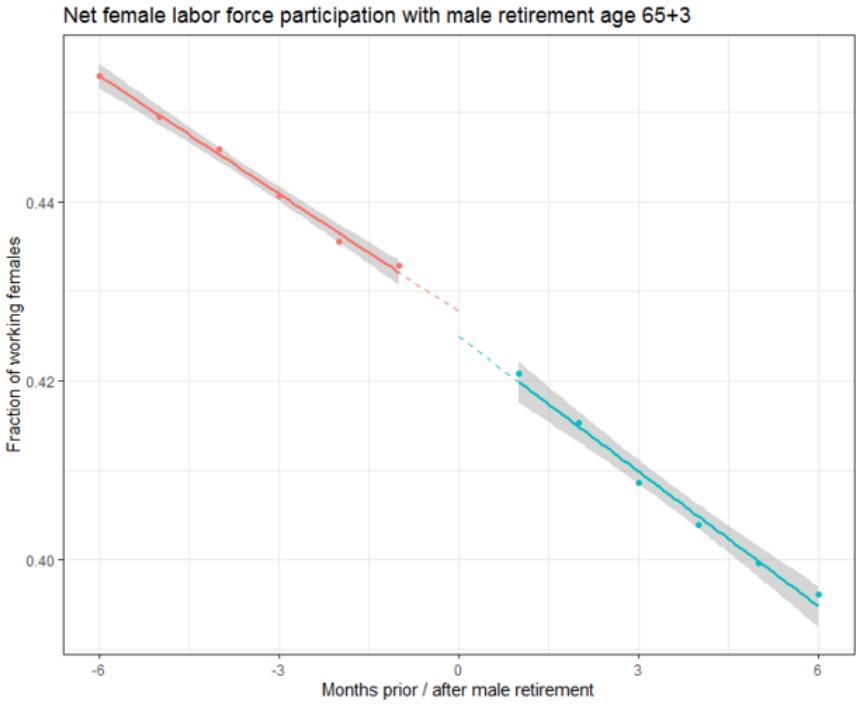

Figure 1 net labor force participation of the younger female spouse with male statutory retirement age of 65 years and 3 months. The red (blue) line indicates the net labor force participation of the younger female partner 6 months prior (after) retirement of the older spouse.

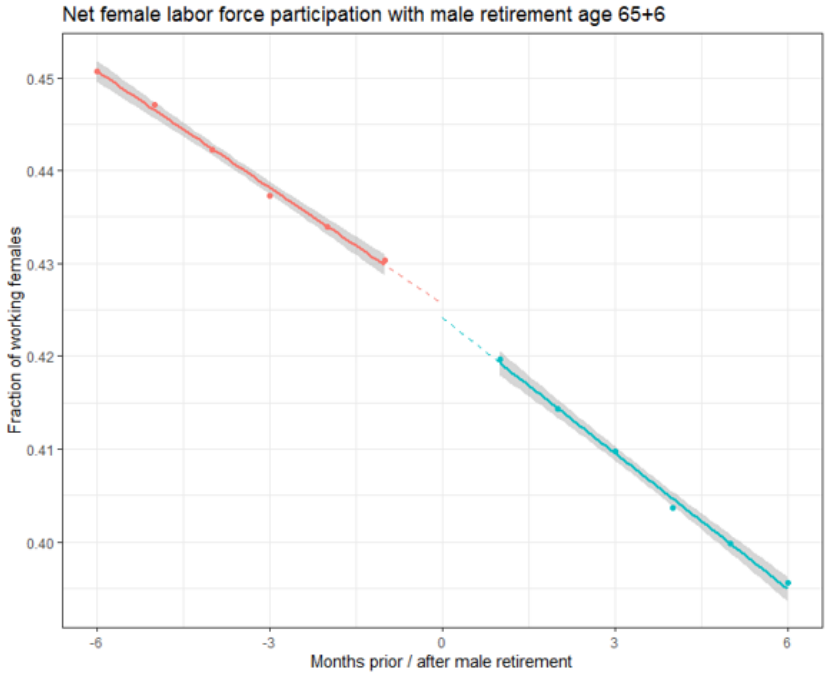

Figure 2 net labor force participation of the younger female spouse with male statutory retirement age of 65 years and 6 months. The red (blue) line indicates the net labor force participation of the younger female partner 6 months prior (after) retirement of the older spouse.

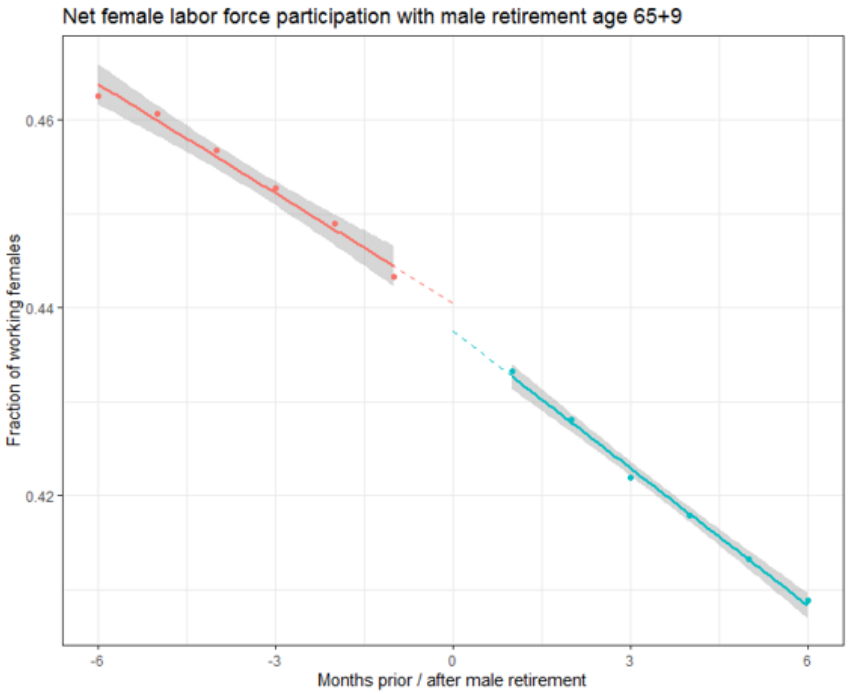

Figure 3 net labor force participation of the younger female spouse with male statutory retirement age of 65 years and 9 months. The red (blue) line indicates the net labor force participation of the younger female partner 6 months prior (after) retirement of the older spouse.

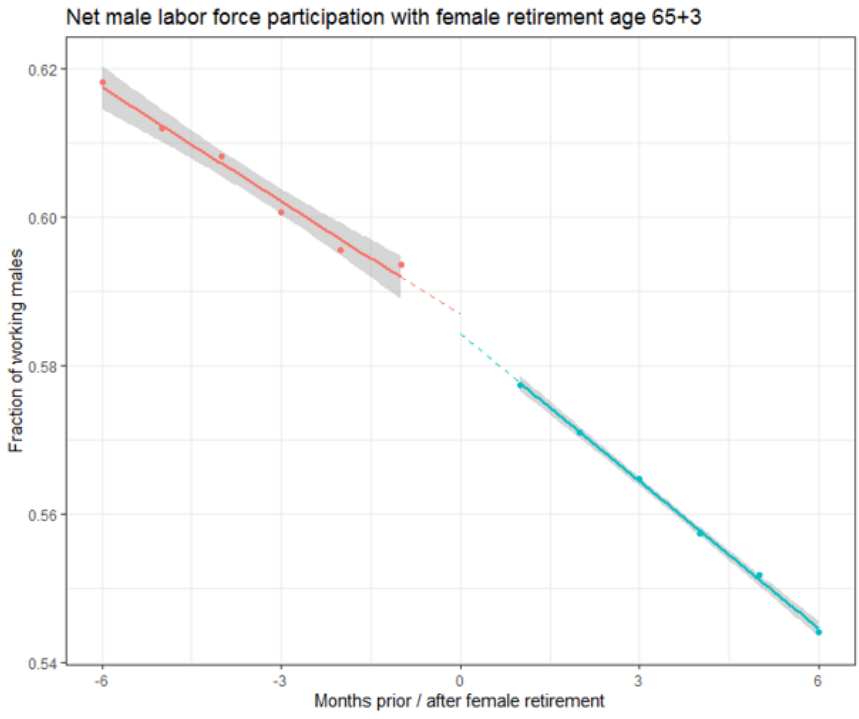

Figure 4 net labor force participation of the younger male spouse with female statutory retirement age of 65 years and 3 months. The red (blue) line indicates the net labor force participation of the younger male partner 6 months prior (after) retirement of the older spouse.

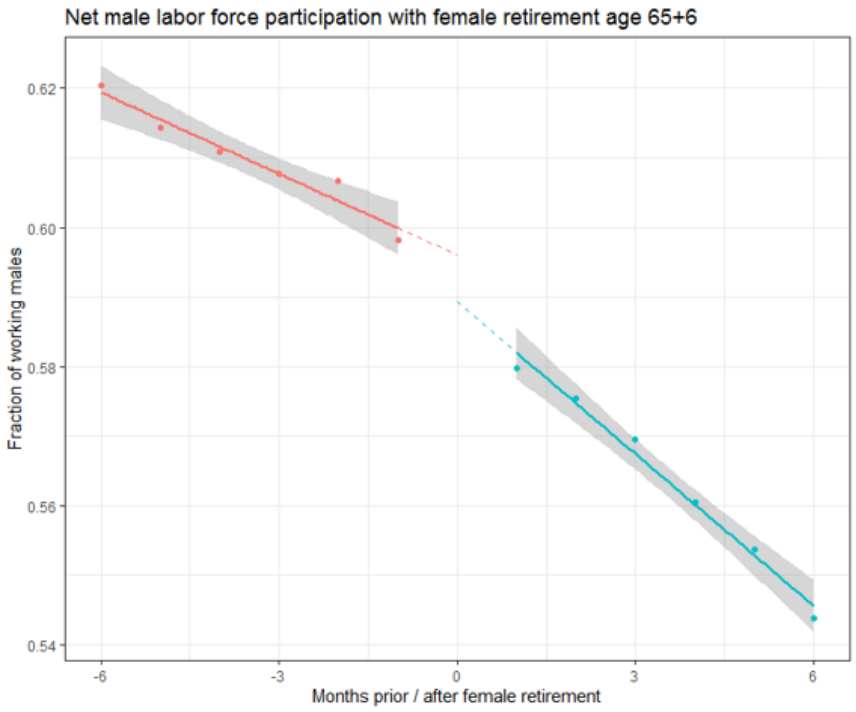

Figure 5 net labor force participation of the younger male spouse with female statutory retirement age of 65 years and 6 months. The red (blue) line indicates the net labor force participation of the younger male partner 6 months prior (after) retirement of the older spouse.

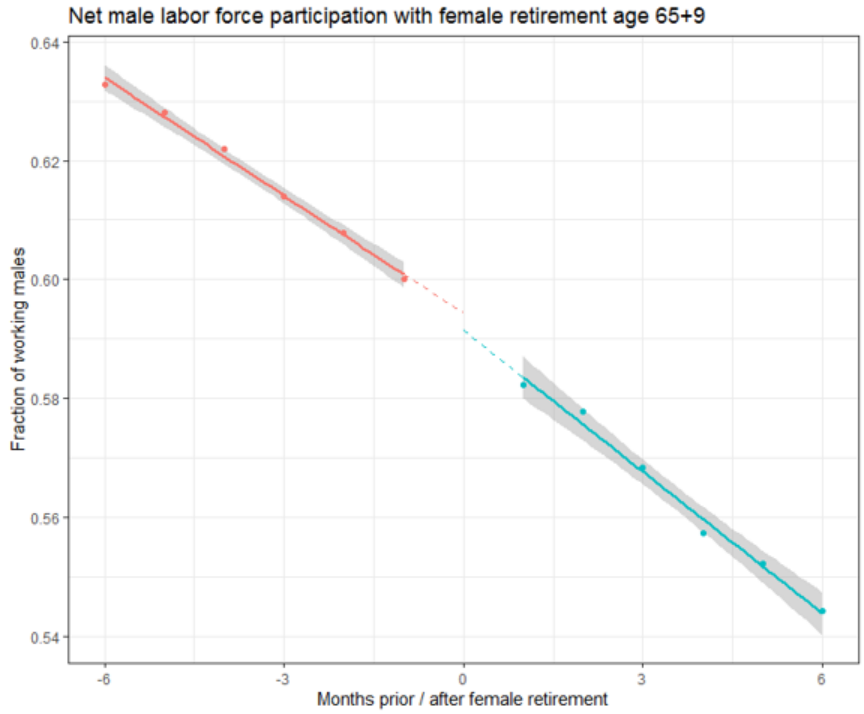

Figure 6 net labor force participation of the younger male spouse with female statutory retirement age of 65 years and 9 months. The red (blue) line indicates the net labor force participation of the younger male partner 6 months prior (after) retirement of the older spouse.

V Estimation Method & Results

We estimate the effect of the increase in the Dutch statutory retirement age on the partner's labor supply decision by using a double regression discontinuity design (D-RDD) as is advocated by Lalive and Parrotta (2017). Exploiting the fact that different pension cohorts have a different statutory retirement age, we can determine whether spousal labor supply changed with the increased statutory retirement age of the older partner. We as well use this regression output to explain whether leisure complementarity between partners increases or decreases over time. Lastly, we analyze the part-time factor, which measures the labor-supply of the youngest partner at the intensive margin.

V.A Labor Supply of the Youngest Spouse

We estimate the effect of reaching the statutory retirement age on the labor supply decision of the youngest partner. To do so, we estimate a linear probability model:

$$Q_y = \alpha + \beta_1 R^y + \beta_2 R^o + \beta_3\big(Age^y - Age(R^y)\big) + \beta_4\big(Age^o - Age(R^o)\big) + \beta_6\big(Age^y - Age(R^y)\big) * R^y + \beta_6\big(Age^o - Age(R^o)\big) * R^o + \beta_7 X + \epsilon \qquad (1)$$

The above regression measures how the labor supply of the youngest partner in a particular month depends on the statutory retirement age of the older partner and his or her own pension eligibility. More precisely, Q_y denotes the labor supply of the youngest partner y, which is equal to unity if the partner works[24] and is equal to zero otherwise. α denotes a constant. R^o and R^y are dummy variables that indicate whether the oldest (o) and youngest (y) partner are eligible for public pension benefits in a particular month. If this is the case, the dummy is equal to unity. The terms $Age^o - Age(R^o)$ and $Age^y - Age(R^y)$ denote the difference in months between the age of the oldest and younger partner's age and their corresponding statutory retirement age. Age^o and Age^y are increasing each month as each person's age increases over time. β_5 and β_6 measure the interaction between the pension eligibility dummy and the difference between the current age and the statutory retirement age. We include these interaction terms, to allow for a different trend in labor participation before and after the statutory retirement age. Lastly, X denotes several control variables for the household members and ϵ denotes the error term. X includes variables that indicate whether one of the individuals is a first- or

[24] We define an individual working when he or she either has a positive labor income or has a strictly positive part-time factor. Some individuals have a negative income during particular months (due to taxes payable for instance). To determine here whether that person works or does not work, we consider the part-time factor as discussed in the summary statistics.

second-generation immigrant and whether any children are living in the household. Lastly, we as well include a set of year dummies and (pension) cohort dummies[25] for the younger partner as control variables. We run the above regression separately for each pension cohort of the older spouse, meaning that we examine the labor supply effect of the younger partner for different cohorts. More precisely, by analyzing the effect of spousal labor supply for individuals with different statutory retirement ages we can see whether spousal labor supply reacts stronger or weaker when the oldest partner has a higher statutory retirement age.

The main coefficient of interest is β_2. This coefficient captures how the youngest partner reacts to the statutory retirement age of the older partner. A negative sign indicates the younger partner reduces labor supply when the oldest spouse reaches the statutory retirement age. A positive sign would indicate that the younger partner is more likely to work. Table 4 shows the β_1 and β_2 coefficients for the case where the male is the oldest partner and the female is the oldest partner, respectively. The full regression output of regression (1) is displayed in Appendix B.1.

Table 4 shows the effect of pension eligibility of the oldest partner on spousal labor supply as well as how the younger spouse is affected by his or her own pension eligibility. The interpretation of the results is as follows. Examining the effect of male public pension eligibility on female labor supply, we find that there is a negative and significant effect of approximately minus 0.8 percentage point. When analyzing couples where the male is the younger partner, the estimates are in a range of minus 0.3 percentage points to minus 1.7 percentage points, although for the oldest cohort (with statutory retirement age of 65+3) the estimate is insignificant. Overall, the above results indicate that we find a consistently negative and significant effect across pension cohorts regardless of the gender of the oldest spouse. Using the net labor supply at the moment of pension eligibility of the older spouse, it is as well possible to calculate the percentage change in net labor supply for the younger partner when the oldest spouse reaches the statutory retirement age[26]. For couples where the male is the oldest partner, we find that this percentage change is around 2 percent for all statutory retirement ages. For couples where the female is the oldest partner, the effect is approximately equal to minus 0.5 (insignificant) and minus 2.9 percent for the last two cohorts.

[25] Younger workers that reach the pension eligibility age later than the year 2022 are pooled together in one cohort as this group is very small.

[26] These numbers are for male is old (between brackets the pension eligibility age): 0.43 (65+3), 0.43 (65+6), and 0.44 (65+9). For the couples in which female is old: 0.58 (65+3), 0.59 (65+6), and 0.59 (65+9).

Estimates / Oldest spouse statutory retirement age	$65+3$		$65+6$		$65+9$	
Male = old/ Female = young	%-point	%-change	%-point	%-change	%-point	%-change
R^o (pension eligibility older spouse)	-0.9*** (0.1)	-2.1*** (0.2)	-0.8*** (0.1)	-1.9*** (0.2)	-0.8*** (0.1)	-1.8*** (0.2)
R^y (pension eligibility younger partner)	-14.0*** (0.4)	-32.6*** (0.9)	-13.8*** (0.4)	-32.1*** (0.9)	-9.0*** (0.6)	-20.5*** (1.4)
N (number of households)	$N = 21{,}148$		$N = 20{,}224$		$N = 19{,}665$	
Female = old / Male = young						
R^o(pension eligibility older spouse)	-0.3 (0.5)	-0.5 (0.9)	-1.7*** (0.5)	-2.9*** (0.8)	-1.7*** (0.5)	-2.9*** (0.8)
R^y (pension eligibility younger partner)	-24.4*** (1.1)	-42.1*** (1.9)	-22.4*** (1.1)	-38.0*** (1.9)	-13.7*** (1.4)	-23.2*** (2.4)
N (number of households)	$N = 2{,}663$		$N = 2{,}526$		$N = 2{,}473$	

*Table 4 The effect of pension eligibility of the older spouse on the net labor supply of the younger partner. The regression formula is given by equation (1). We control for first- and second-generation immigrant status, the presence of children in the household, and year effects. Clustered standard errors at the household level are between parentheses. * denotes significance level at 10%, ** denotes significance at 5%, and *** denotes significance at 1%. See Appendix B.1 for the full regression output.*

The results show that younger spouses react much stronger to their own pension eligibility than to the pension eligibility of the older partner. Overall, this effect is negative and significant at the 1 percent level and ranges from minus 9.0 (13.7) percentage points to 14.0 (24.4) percentage points for couples where the male (female) is the oldest spouse. Analyzing the percentage change in labor supply, we find that own pension eligibility decreases labor supply by 20 to approximately 33 percent for couples where the male is the oldest spouse. For couples where the female is the oldest spouse, the effect ranges from minus 23.2 to minus 42.1 percent. Interestingly, the reaction of the younger spouses on their own public pension eligibility is substantially lower for younger generations with higher public pension eligibility ages.

V.B Income effect and leisure complementarity

It is possible to determine how the retirement behavior of couples differs for different cohorts of the oldest spouse. To do so, we use the grey shaded results of Table 4. In addition, we run a similar regression as equation (1). However, we change the dependent variable into the net labor supply of the

older spouse (Q_o)[27]. The results of this regression are displayed in Appendix B.2. The main coefficient of interest is here (as well) β_2 as it indicates how the older partner changes his or her labor supply after reaching his or her *own* statutory retirement age. The main results of this regression are summarized in Table 5 below.

Estimates / Oldest spouse pension cohort	$R = 65 + 3$	$R = 65 + 6$	$R = 65 + 9$
Male = old/ Female = young	%-point	%-point	%-point
R^o (pension eligibility older spouse)	-26.7*** (0.3)	-27.7*** (0.3)	-27.5*** (0.3)
N (number of households)	$N = 21{,}148$	$N = 20{,}224$	$N = 19{,}665$
Female = old / Male = young			
R^o (pension eligibility older spouse)	-29.8*** (0.8)	-29.0*** (0.8)	-28.4*** (0.8)
N (number of households)	$N = 2{,}663$	$N = 2{,}526$	$N = 2{,}473$

*Table 5 The effect of pension eligibility of the older spouse on his/her own net labor supply. The regression formula is given by equation (1) with dependent variable labor supply of the older spouse. We control for first- and second-generation immigrant status, the presence of children in the household, and year effects. Clustered standard errors at the household level are between parentheses. * denotes significance level at 10%, ** denotes significance at 5%, and *** denotes significance at 1%. See Appendix B.2 for the full regression output.*

We observe that the coefficients range from minus 26.7 to minus 27.7 (minus 28.4 to minus 29.8) for couples where the male (female) is the oldest spouse (we do not find any significant effect of pension eligibility of the younger partner on the net labor supply of the older spouse). So, although we find that for the youngest spouse the effect of one's own pension eligibility on net labor supply declined for cohorts with a higher pension eligibility age, the effect for the oldest spouse remains relatively constant over the different cohorts. Appendix B.3 shows that this relatively constant effect is composed of an increasing effect among low wage income households and a decreasing effect among high income households. When analyzing the oldest spouses in low-income households, we find that younger cohorts with higher pension eligibility ages retire more often at the statutory retirement age. For them, the liquidity effect at the pension eligibility age increases as early retirement routes have become more and more difficult and expensive. For high income households this is not the case. The liquidity effect will not drive the results, as high-income households have relatively high mandatory (second pillar pension) savings in the Netherlands. For them we see that younger cohorts with higher pension eligibility ages retire less often at the statutory retirement age, suggesting a decreasing social norm effect.

[27] Hence, we replace Q_y by Q_o as our dependent variable.

In addition to the above findings, we calculate the ratios between the estimated coefficients in Table 5 and the shaded coefficients in Table 4. These ratios indicate the labor supply reaction of the younger spouse relative to that of the older spouse when the latter reaches the statutory retirement age. Table 6 presents these ratios.

	Male =old / female = young	Female = old / male =young
Cohort 1: $65+3$	0.035*** (0.005)	0.011 (0.016)
Cohort 2: $65+6$	0.029*** (0.005)	0.059*** (0.017)
Cohort 3: $65+9$	0.029*** (0.005)	0.059*** (0.018)

*Table 6 The ratio of the retirement behavior of the younger partner with respect to the retirement age of the older spouse. More formally, we calculate (dQ^y/dR^o) / (dQ^o/dR^o). To obtain the numerator (denominator) of this fraction, We regess equation (1) on the net labor supply of the younger (older) spouse. These regression results are presentered in Appendix B.2. Standard errors clustered at the household level are between parentheses. *** denotes significance at the 1% level.*

The results show that around 3% of women retire when the older male spouse retires at the statutory retirement age. This is similar for the three different cohorts. For couples where the female is the oldest spouse, we observe that 6% of men retire when their older spouse retires at the statutory retirement age. The exception is the oldest cohort, for which we only find an effect of 1% (not significantly different from zero).

Finally, we divide each pension eligibility cohort into two groups based on the total household wage income in January 2014. Thereafter we run the regression (1) on these different groups and calculate the ratio of the retirement behavior of the younger partner with respect to the retirement age of the older spouse. The regression output is available in Appendix B.3. The ratios for the different wage income groups per pension cohort are provided in Table 7 and Table 8. The ratio is about twice as large for the high wage income group compared to the low wage income group. This may indicate that couples like to spend leisure time together, which is more affordable for high wage households than for low wage households.[28]

Male older than female	(1)	(2)
Pension cohort/ wage income group	Low wage income households	High wage income households
Cohort 1: 65+3	0.023*	0.042***

[28] That is because the liquidity effect is very unlikely for high wage income households. In the Netherlands most workers save for their retirement mandatory at least some period in their life and can use this to retire before the statutory retirement age. So, only for low wage income households there may be a liquidity effect.

	(0.012)	(0.006)
Cohort 2: 65+6	0.015* (0.009)	0.041*** (0.006)
Cohort 3: 65+9	0.025*** (0.007)	0.035*** (0.008)

Table 7 The ratio of the retirement behavior of the younger female partner with respect to the retirement age of the older male spouse for different wage income groups. More formally, we calculate $(dQ^y/dR^o) / (dQ^o/dR^o)$*. To obtain the numerator (denominator) of this fraction, We regess equation (1) on the net labor supply of the younger (older) spouse for different income groups. These regression results are presentered in Appendix B.3. Standard errors clustered at the household level are between parentheses. *** denotes significance at the 1% level. * denotes significance at the 10%-level.*

Female older than male	(1)	(2)
Pension cohort/ wage income group	Low wage income households	High wage income households
Cohort 1: 65+3	0.007 (0.025)	0.020 (0.021)
Cohort 2: 65+6	0.051** (0.023)	0.069*** (0.024)
Cohort 3: 65+9	0.046* (0.024)	0.084*** (0.028)

Table 8 The ratio of the retirement behavior of the younger male partner with respect to the retirement age of the older female spouse for different wage income groups. More formally, we calculate $(dQ^y/dR^o) / (dQ^o/dR^o)$*. To obtain the numerator (denominator) of this fraction, We regess equation (1) on the net labor supply of the younger (older) spouse. These regression results are presentered in Appendix B.3. Standard errors clustered at the household level are between parentheses. *** denotes significance at the 1% level, ** denotes significance at the 5%-level, and * denotes significance at the 10%-level.*

V.C Part time factor

Using the part-time factor allows us to both examine the effect of the intensive and extensive margin as we can now consider whether the partner decides to decrease or increase the number of full-time days worked.

In Appendix A.2, we present graphs showing how the part-time factor changes before and after the older partner receive pension benefits for different cohorts for the older partner. They provide a similar image as the graphs we discussed in section IV. The regression we run is equal to regression (1), which we run again per pension cohort. However, now our left-hand-side variable is the part-time factor of the younger spouse (including zeros). The output is presented in Appendix B.4. Table 9 shows the percentage point change as well as the percentage change in the part-time factor of the younger partner after pension eligibility of the older spouse and for his or her own pension eligibility.

The results are as follows. For couples where the male is the oldest spouse, the part-time factor of the younger partner reduces by approximately 0.5% points when the male becomes eligible for pension benefits. This is equivalent to a decrease of 1.9 percent.[29] Analyzing the effect of own pension eligibility on the part-time factor, the result tends to be much stronger. In particular, the part-time factor decreases by 4.0 to 7.7 percentage points (15 to 30 percent) depending on the cohort the male belongs to. For couples where the female is the oldest partner, we observe a similar pattern as for the couples where the male is the oldest spouse. The biggest difference is that the estimate for couples with a statutory retirement age of 65+3 is not significant at the 5% level. Comparing Table 9 with Table 4, we find that the relative changes on the extensive and intensive margin follow approximately a similar pattern.

Estimates / Oldest spouse pension cohort	$R = 65 + 3$		$R = 65 + 6$		$R = 65 + 9$	
Male = old/ Female = young	%-point	%-change	%-point	%-change	%-point	%-change
R^o (pension eligibility older spouse)	-0.5*** (0.1)	-1.9*** (0.4)	-0.5*** (0.1)	-1.9*** (0.4)	-0.5*** (0.1)	-1.9*** (0.4)
R^y (pension eligibility younger partner)	-7.7*** (0.3)	-30.0*** (1.2)	-7.1*** (0.3)	-27.6*** (1.2)	-4.0*** (0.4)	-15.2*** (1.5)
N (number of households)	$N = 21{,}148$		$N = 20{,}224$		$N = 19{,}665$	
Female = old / Male = young						
R^o(pension eligibility older spouse)	-0.4 (0.4)	-0.8 (0.8)	-1.3*** (0.4)	-2.5*** (0.8)	-1.6*** (0.5)	-3.1*** (1.0)
R^y (pension eligibility younger partner)	-23.0*** (1.0)	-43.9*** (1.9)	-21.8*** (0.9)	-41.7*** (1.7)	-14.4*** (1.1)	-27.5*** (2.1)
N (number of households)	$N = 2{,}663$		$N = 2{,}526$		$N = 2{,}473$	

*Table 9 The effect of pension eligibility on the part-time factor of the younger spouse. We control for first- and second-generation immigrant status, the presence of children in the household, and year effects. Clustered standard errors at the household level are between parentheses. * denotes significance level at 10%, ** denotes significance at 5%, and *** denotes significance at 1%. The full regression output is available in Appendix B.4.*

V.D Social norms

Since the introduction of the first pillar pension benefits in the Netherlands in 1956, the statutory retirement age was set at the age of 65. Therefore, this initial reference point could still play a role as

[29] We again use the net labor supply of the oldest spouse at the moment of pension eligibility. For couples where the male is the older partner those values are: 0.26 (65+3), 0.26 (65+6), and 0.26 (65+9). For couples where the female is the older partner those values are: 0.52 (65+3), 0.52 (65+6), and 0.52 (65+9).

former statutory retirement age in the labor supply decision of the older partner (Behaghel and Blau, 2012). We are interested in the age of 65 for the labor supply decision for the younger partner. More precisely, as financial incentives are not likely to play a role at age 65 for the younger partner (e.g. no access to pension benefits), the main mechanisms that explain retirement behavior of the younger partner at this age are social norms and leisure complementarity. To check for this, we run the following regression:

$$Q^y = \alpha + \beta_1 R^y + \beta_2 R^o + \beta_3 D^y 65 + \beta_4 D^o 65 + \beta_5\big(Age^y - Age(R^y)\big) + \beta_6(Age^o - 65) + \beta_7\big(Age^y - Age(R^y)\big) * R^y + \beta_8(Age^o - 65) * R^o + \beta_9\big(Age^y - Age(R^y)\big) * D^y 65 + \beta_{10}(Age^o - 65) * D^o 65 + \beta_{11} D^y 65 * R^o + \beta_{12} X + \epsilon \qquad (2)$$

In the above regression, most of the variables have the same interpretation as in regression (1). However, we changed $(Age^o - Age(R^o))$ to $(Age^o - 65)$ as now the age of 65 is the main age of interest.[30] Besides, we added two dummy variables $D^y 65$ (and $D^o 65$) which are equal to unity when the younger partner (older partner) reaches the age of 65. If this is not the case, the variable equals zero. We as well add interaction terms between the age difference and the $D^y 65$ and $D^o 65$ variables. Lastly, we add the interaction term between the two dummy variables $D^y 65$ and R^o. This interaction term indicates whether the younger partner retires at the age of 65 when the older spouse is eligible for first pillar pension benefits. Given that the age of 65 still serves as a reference point, this is our main coefficient of interest as it indicates whether the reference point plays a role when the older partner is already eligible for first pillar pension benefits. The full results are displayed in Appendix B.5. Table 10 provides an overview of the main coefficient of interests.

Estimates / Oldest spouse pension cohort	$R = 65 + 3$	$R = 65 + 6$	$R = 65 + 9$
Male = old/ Female = young	%-point	%-point	%-point
$D^y 65$ (younger partner reaches age of 65)	-1.2 (4.9)	-4.1* (2.2)	-1.0 (1.7)
$D^y 65 * R^o$ ((younger partner reaches age of 65 and older partner is eligible for pension benefits)	-2.3 (4.9)	-1.0 (2.2)	-6.0*** (1.5)
N (number of households)	$N = 21{,}148$	$N = 20{,}224$	$N = 19{,}665$

[30] Note that we cannot add both terms $\big(Age^o - Age(R^o)\big)$ and $(Age^o - 65)$ because of multicollinearity. It does not matter which one we write down in the regression. We chose here to change one term to minus 65 to indicate that we analyze a social norm effect.

Female = old / Male = young			
$D^y 65$ (younger partner reaches age of 65)	-2.2 (8.3)	-8.0* (4.0)	-9.9*** (3.2)
$D^y 65 * R^o$ ((younger partner reaches age of 65 and older partner is eligible for pension benefits)	-4.7 (8.2)	-2.6 (3.8)	0.4 (2.8)
N (number of households)	$N = 2{,}663$	$N = 2{,}526$	$N = 2{,}473$

*Table 10 The effect of reaching the age of 65 by the younger partner on their labor supply. We control for first- and second-generation immigrant status, the presence of children in the household, and year effects. Clustered standard errors at the household level are between parentheses. * denotes significance level at 10%, ** denotes significance at 5%, and *** denotes significance at 1%. The full regression output is available in Appendix B.5.*

We observe that labor supply decreases once the younger partner reaches the age of 65. For the oldest cohort with a statutory retirement age of 65+3 this effect is not significantly different from zero. For the youngest cohort the effect is the largest, when it also holds that the older partners reached the statutory retirement age. So, there is a social norm effect for the "old" statutory retirement age for the youngest partner, especially when the older partner already reached the (new) statutory retirement age.

VI Sensitivity analysis

The previous section described how the statutory retirement age of the older spouse affects the net labor supply of the younger partner. In this section, we relax some of the assumptions we made in our data analysis. We still use regression (1) as our baseline estimation for both the net labor supply and the part-time factor of the younger partner is the dependent variable. In Table 8-11 below we show how our main coefficients of interest, R^o and R^y, change when we relax a number of assumptions. First, we relax the assumption regarding the main income category for the oldest spouse. More precisely, we now allow the older spouse to earn income as self-employed as well.[31] Although we do not observe their labor supply at a monthly level, we can still see whether their younger partner reacts once they are eligible for pension benefits (both in terms of net labor supply and part-time factor).

For the baseline extended sample (column 1 of Table 9 and Table 10), we find that the R^o coefficient does not change in terms of sign or significance when analyzing net labor supply as the dependent variable. This does not depend on the gender of the older spouse. Adding cohort dummies (column 2)

[31] These are the income categories 12-15 for the variable "inpsecj". Note that we are not able to determine monthly net labor supply for this group.

does not have a major impact in terms of sign, magnitude, or significance on our variables of interest. Analyzing the part-time factor (column (3) and column (4)), we observe as well that not much is changing when we add self-employed workers and cohort dummies, respectively.

%-point estimates	Net labor supply		Part time factor	
Male = old/ Female = young	(1)	(2)	(3)	(4)
Cohort 65+3				
R^o	-1.1*** (0.1)	-1.0*** (0.1)	-0.6*** (0.1)	-0.5*** (0.1)
R^y	-17.5*** (0.4)	-13.9*** (0.4)	-9.3*** (0.3)	-7.7*** (0.2)
Households	23,471		23,471	
Cohort 65+6				
R^o	-0.9*** (0.1)	-0.8*** (0.1)	-0.5*** (0.1)	-0.4*** (0.1)
R^y	-17.8*** (0.4)	-13.6*** (0.4)	-9.3*** (0.3)	-7.2*** (0.3)
Households	22,621		22,621	
Cohort 65+9				
R^o	-0.9*** (0.1)	-0.8*** (0.1)	-0.5*** (0.1)	-0.5*** (0.1)
R^y	-14.8*** (0.7)	-9.3*** (0.6)	-7.1*** (0.4)	-4.3*** (0.4)
Households	22,157		22,157	
Controls	YES	YES	YES	YES
Year dummies	YES	YES	YES	YES
Cohort dummies	NO	YES	NO	YES
Including self-employed	YES	YES	YES	YES

*Table 11 Sensitivity analysis for net labor supply (column (1) and (2)) and the part-time factor (column (3) and (4) where the male is the older spouse. Clustered standard errors at the household level are between parentheses. * denotes significance level at 10%, ** denotes significance at 5%, and *** denotes significance at 1%. Note that we cannot calculate the percentage change at the moment of retirement as we only have yearly data for self-employment.*

%-point estimates	Net labor supply		Part time factor	
Female = old / male = young	(1)	(2)	(3)	(4)
Cohort 65+3				
R^o	-0.5 (0.5)	-0.1 (0.5)	-0.7 (0.4)	-0.3 (0.4)
R^y	-28.5*** (1.1)	-23.5*** (1.0)	-27.0*** (1.0)	-22.2*** (0.9)
Households	2,944		2,944	
Cohort 65+6				
R^o	-1.9*** (0.5)	-1.4*** (0.5)	-1.6*** (0.4)	-1.2*** (0.4)
R^y	-27.1*** (1.2)	-21.5*** (1.0)	-26.1*** (1.0)	-20.9*** (0.9)
Households	2,805		2,805	
Cohort 65+9				
R^o	-2.1*** (0.5)	-1.8*** (0.5)	-2.0*** (0.4)	-1.6*** (0.4)
R^y	-18.6*** (1.5)	-14.1*** (1.3)	-19.3*** (1.2)	-14.6*** (1.1)
Households	2,763		2,763	
Controls	YES	YES	YES	YES
Year dummies	YES	YES	YES	YES
Cohort dummies	NO	YES	NO	YES
Including self-employed	YES	YES	YES	YES

*Table 12 Sensitivity analysis for net labor supply (column (1) and (2)) and the part-time factor (column (3) and (4) where the male is the older spouse. Clustered standard errors at the household level are between parentheses. * denotes significance level at 10%, ** denotes significance at 5%, and *** denotes significance at 1%. Note that we cannot calculate the percentage change at the moment of retirement as we only have yearly data for self-employment.*

VII Conclusion

We analyzed how spousal labor supply is affected by the statutory retirement age of the oldest spouse. We investigate the *direct* effect of an increased statutory retirement age in the context of couples. We find that about one third of the oldest spouses retire at the statutory retirement age. This has not changed much after the increase in the statutory retirement age, although we do observe different trends between high and low-income households. With the increasing statutory retirement age, high-income households stick to the statutory retirement age less often (the direct effect for men declines from -44%-points to -32%-points), while low-income households stick more often to the statutory retirement age (from -14%-points to -24%-points for men).

The regression results also show a negative effect on the labor participation of the younger spouse. Younger partners decrease their labor supply by up to 1.7 percentage points once the oldest spouse reaches the statutory retirement age. The responsiveness for younger men is twice as high than for younger female partners. The responsiveness is also about twice as strong in high-wage income households than in low-wage income households. The responsiveness in terms of hours worked are somewhat smaller. Lastly, we show evidence that for younger spouses the original statutory retirement age of 65 is still a reference point. This indicates that, in addition to the leisure complementarity of partners, social norms also seem to impact retirement decisions.

In general, the negative participation effect we found can be caused by leisure complementarity, financial incentives and/or social norms. The ratio of partners that retire together is constant for different pension cohorts of the older spouse. The same holds as well when we investigate this ratio for different wage income groups. Therefore, leisure complementarity likely plays a role in the decision-making process.

On the other hand, we as well observe that the complementarity ratios are 1.5 to 2 times higher for high wage income households. Therefore, it seems that the richer the household, the more likely both partners will retire together. The first pillar pension benefits the older partner receives when retiring equals fifty percent of the minimum wage. This is most likely inadequate financial compensation to withdraw from the labor force for the younger partner unless there is sufficient second pillar pension available such that the younger partner can retire as well. High wage households often have mandatory and high second pillar pensions and are therefore more likely to retire jointly. Therefore, this suggests that leisure complementarity plays a larger role than liquidity constraints (i.e., access to public pension

benefits) since high wage income households are less dependent on public pension benefits. The analysis on the initial retirement age of 65 also points in that direction.

Appendix

A Additional graphs and figures

A.1 Effect of pension eligibility on own net labor force participation

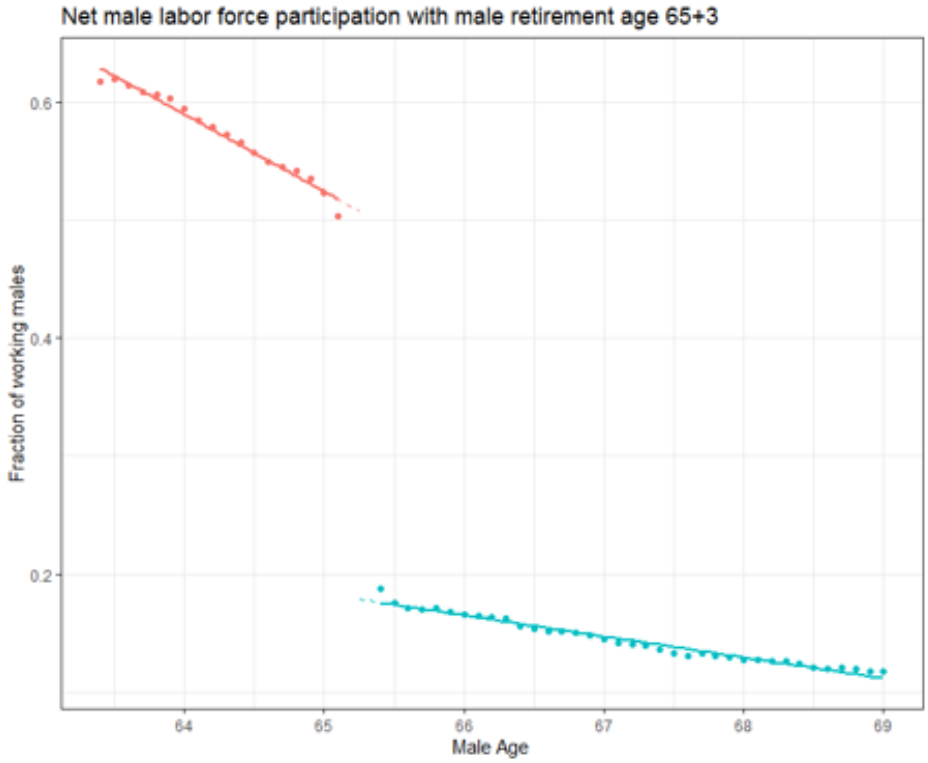

Figure 7 Average net labor force participation of the older male partner with male statutory retirement age of 65 years and 3 months. The red (blue) line indicates the average net labor force participation prior (after) the statutory retirement age.

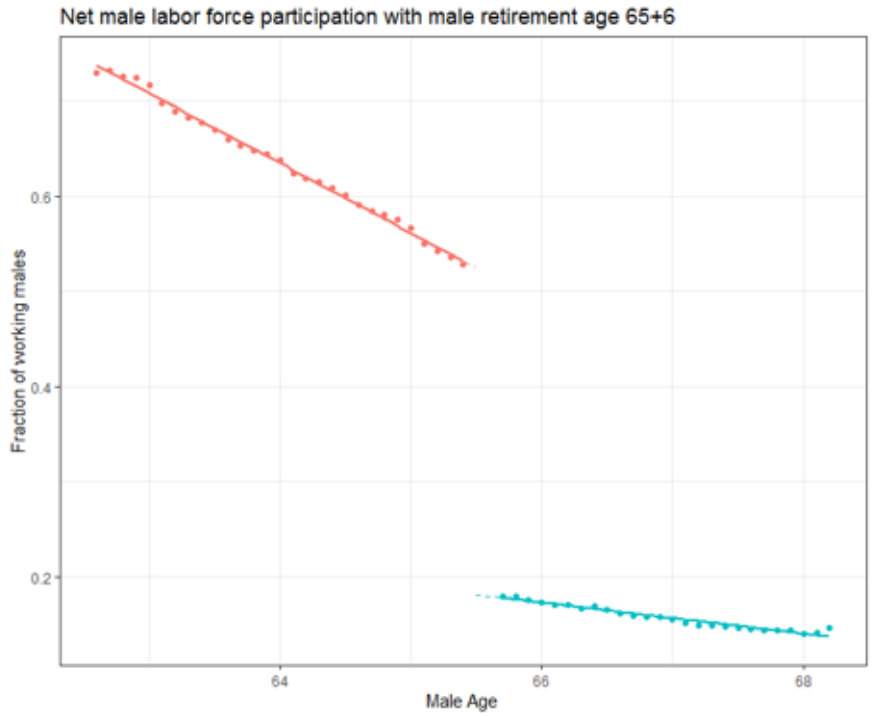

Figure 8 Average net labor force participation of the older male partner with male statutory retirement age of 65 years and 6 months. The red (blue) line indicates the average net labor force participation prior (after) the statutory retirement age.

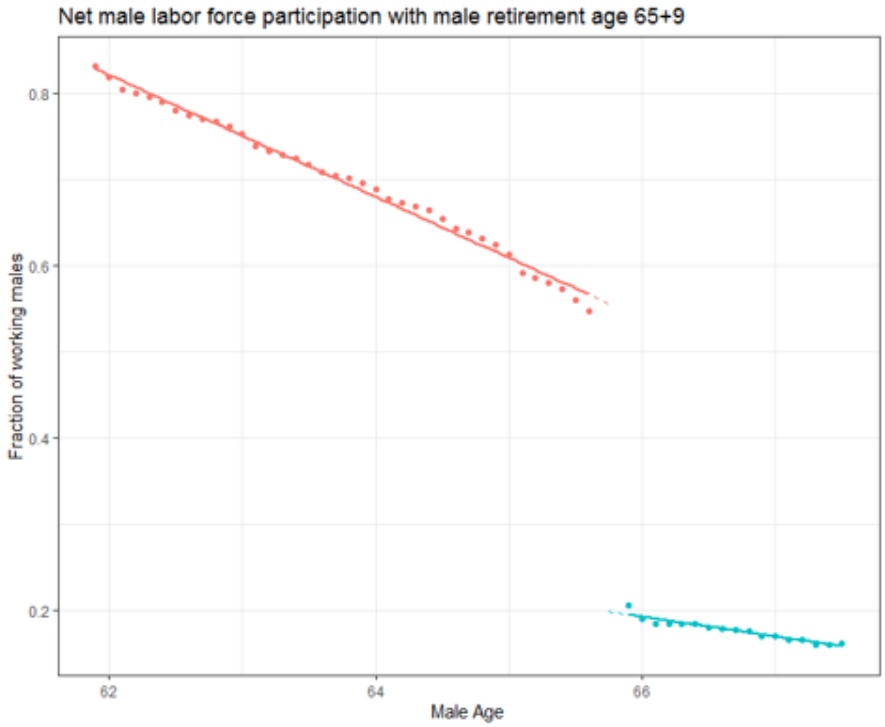

Figure 9 Average net labor force participation of the older male partner with male statutory retirement age of 65 years and 9 months. The red (blue) line indicates the average net labor force participation prior (after) the statutory retirement age.

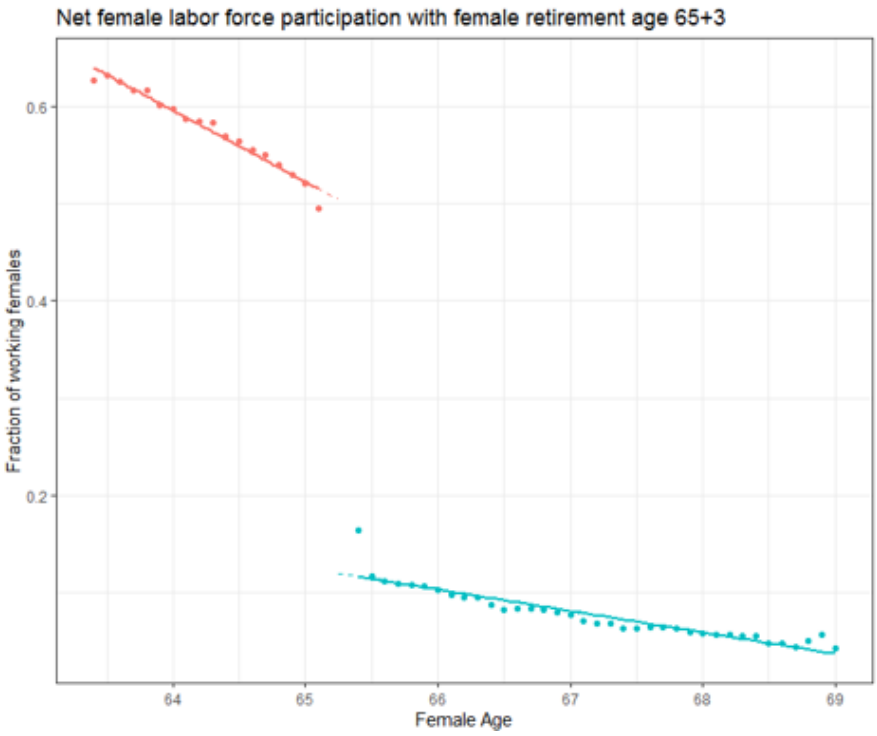

Figure 10 Average net labor force participation of the older female partner with female statutory retirement age of 65 years and 3 months. The red (blue) line indicates the average net labor force participation prior (after) the statutory retirement age.

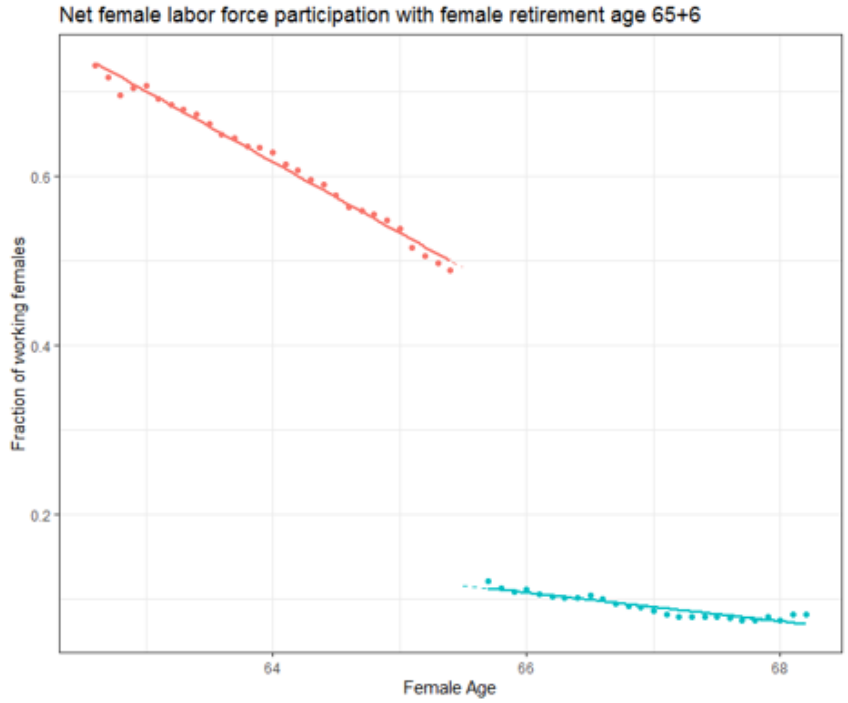

Figure 11 Average net labor force participation of the older female partner with female statutory retirement age of 65 years and 6 months. The red (blue) line indicates the average net labor force participation prior (after) the statutory retirement age.

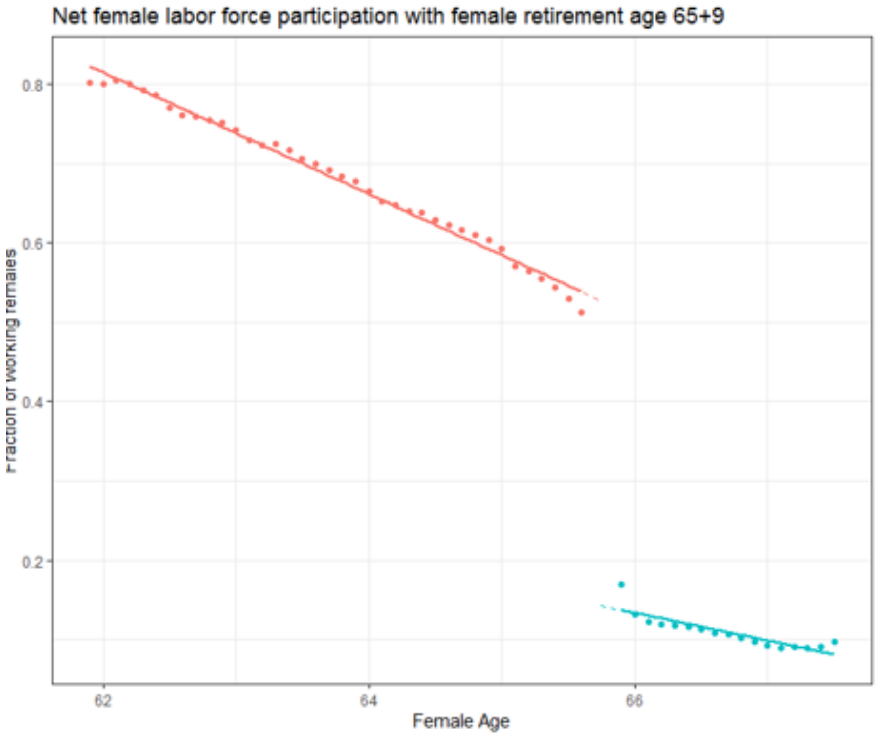

Figure 12 Average net labor force participation of the older female partner with female statutory retirement age of 65 years and 9 months. The red (blue) line indicates the average net labor force participation prior (after) the statutory retirement age.

A.2 Part time factor

We plot the part-time factor of the youngest person in a couple before and after the oldest person reaches the statutory retirement age. More precisely, we plot the average part-time factor of the youngest partner 6 months prior and after the oldest partners reaches the statutory retirement age.

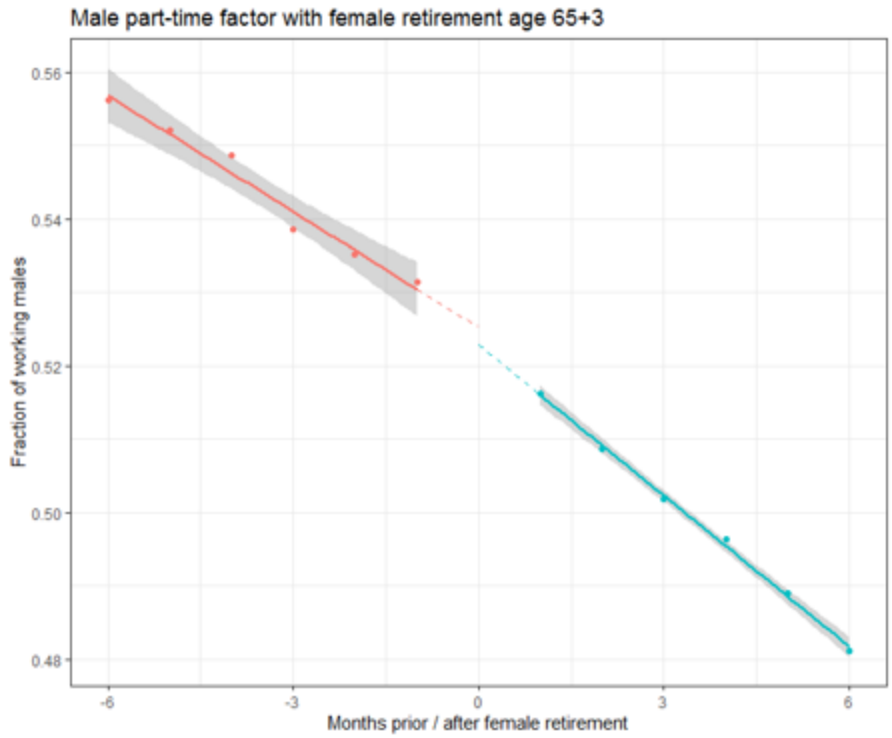

Figure 13 Average part-time factor of the younger male partner with female statutory retirement age of 65 years and 3 months. The red (blue) line indicates the average part-time factor of the younger male partner 6 months prior (after) the statutory retirement age of the older spouse.

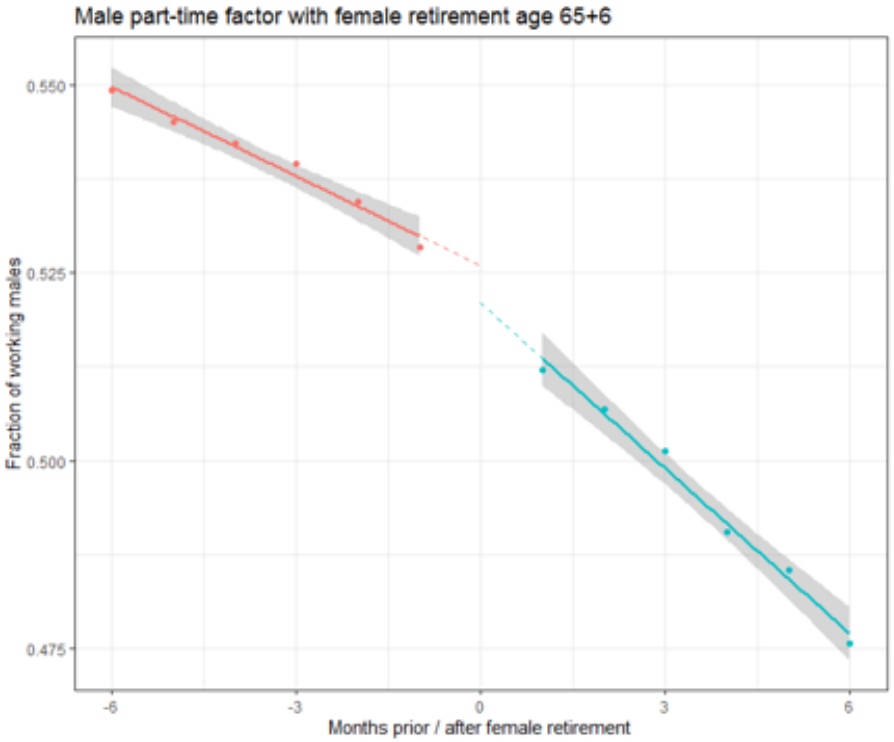

Figure 14 Average part-time factor of the younger male partner with female statutory retirement age of 65 years and 6 months. The red (blue) line indicates the average part-time factor of the younger male partner 6 months prior (after) the statutory retirement age of the older spouse.

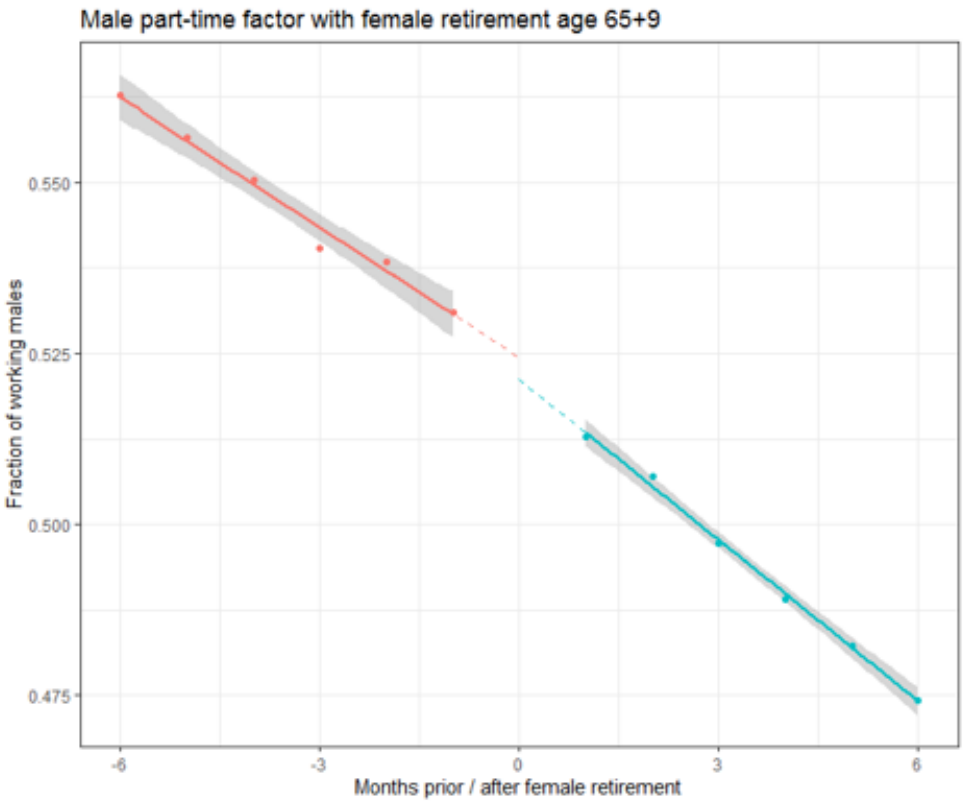

Figure 15 Average part-time factor of the younger male partner with female statutory retirement age of 65 years and 9 months. The red (blue) line indicates the average part-time factor of the male partner 6 months prior (after) the statutory retirement age of the older spouse.

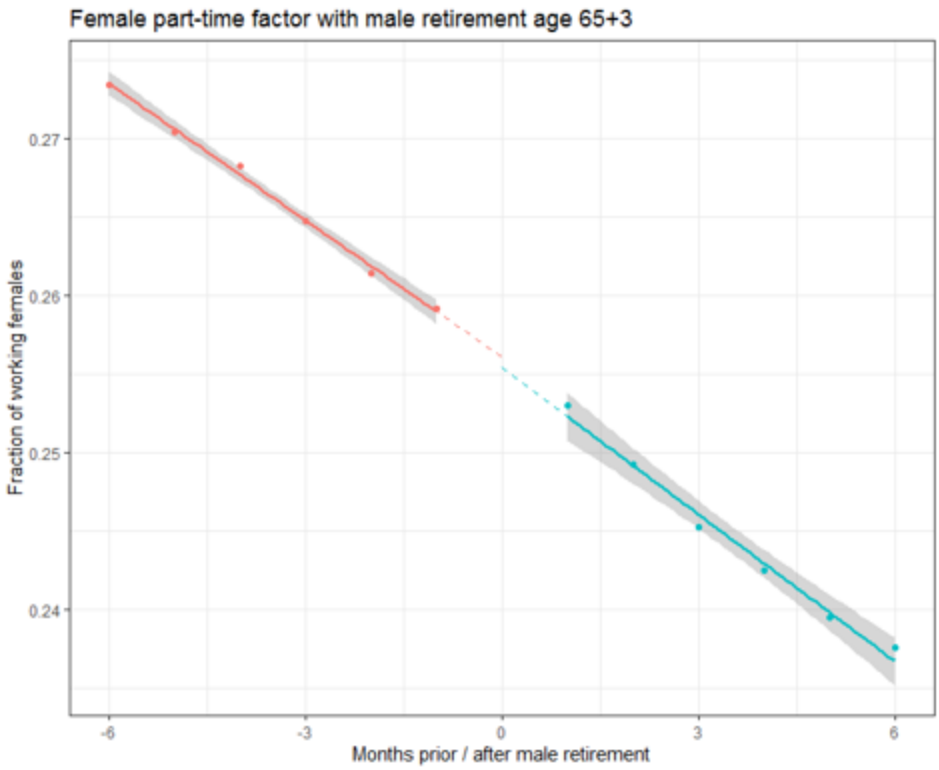

Figure 16 Average part-time factor of the younger female partner with male statutory retirement age of 65 years and 3 months. The red (blue) line indicates the average part-time factor of the female partner 6 months prior (after) the statutory retirement age of the older spouse.

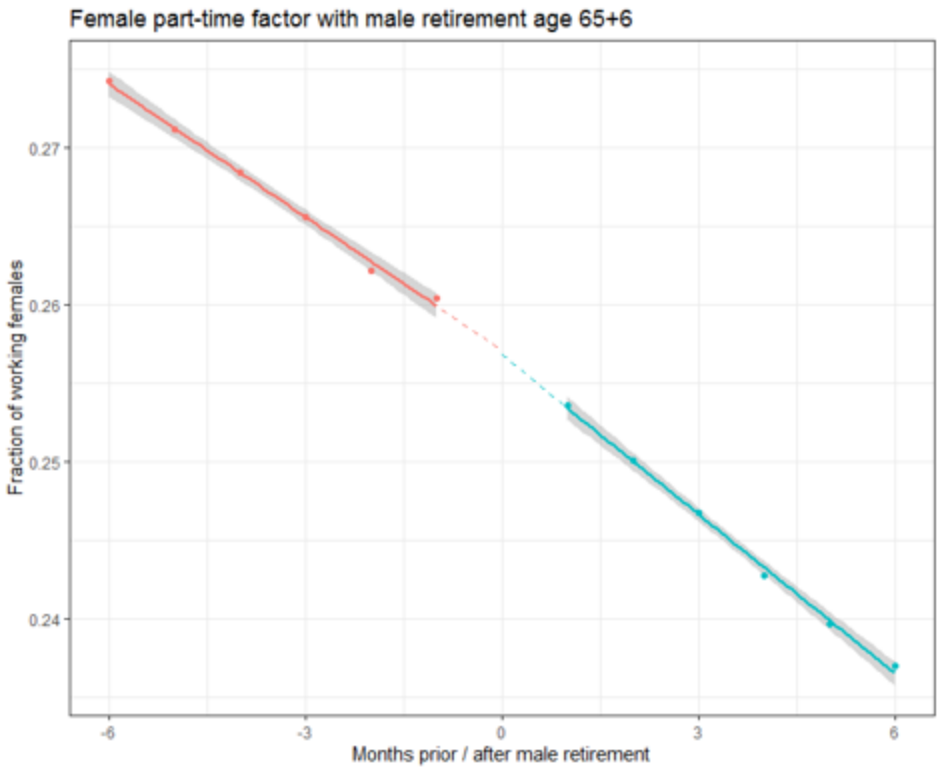

Figure 17 Average part-time factor of the younger female partner with male statutory retirement age of 65 years and 3 months. The red (blue) line indicates the average part-time factor of the female partner 6 months prior (after) the statutory retirement age of the older spouse.

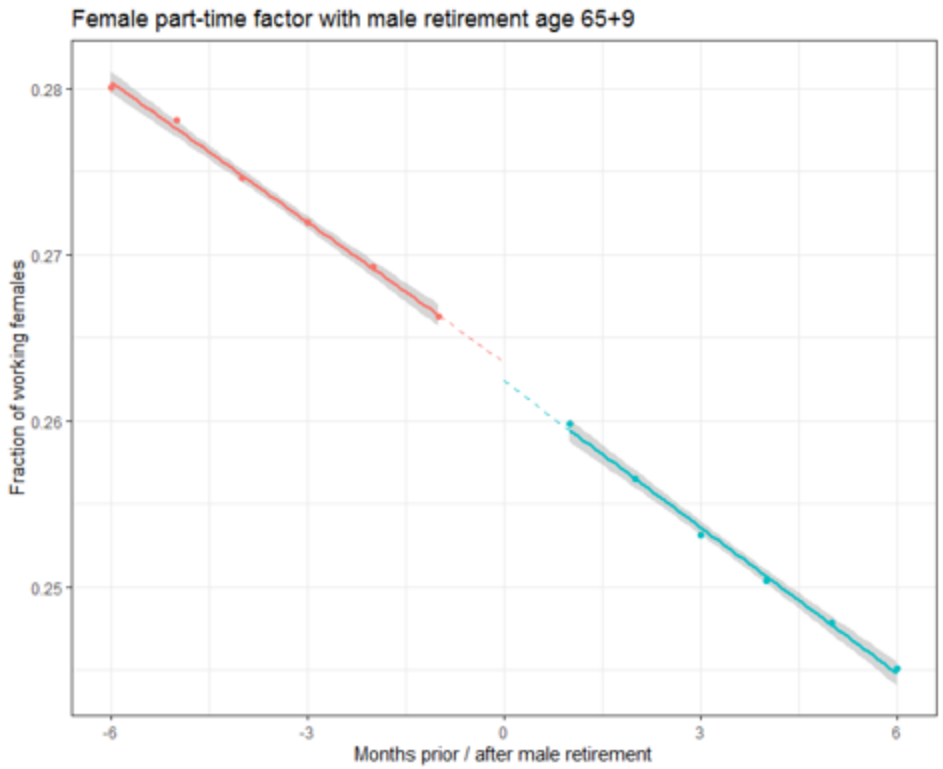

Figure 18 Average part-time factor of the younger female partner with male statutory retirement age of 65 years and 9 months. The red (blue) line indicates the average part-time factor of the female partner 6 months prior (after) the statutory retirement age of the older spouse.

B Additional regression output

In appendix B.1, we provide the regression output per regression cohort of equation (1). Tables with robust standard errors and clustered standard errors at the household level are presented, respectively. The first tables provide the regression output with spousal labor supply of the youngest spouse as the dependent variable. In the upper left cell of each table we write down the gender of the oldest spouse as well as the pension cohort the oldest spouse belongs to. Cohort 1 refers to a pension eligibility age of 65 years and 3 months. Cohort 2 and cohort 3 refer to a pension eligibility age of 65 years and 6 months and 65 years and 9 months, respectively. The main variables we use from these tables are the coefficients for R^o and R^y.

In appendix B.2, show the regression output with the net labor supply of the oldest spouse as the dependent variable. Here we use the coefficient of R^o to calculate the ratios to determine whether joint retirement increases or decreases for different cohorts.

In appendix B.3, we show our regression results when we split the households into a low- and high wage income group. In appendix B.4 we show the regression results for the part-time factor of the younger spouse as the dependent variable. The references to the cohorts are the same as in appendix B1.

Lastly, in appendix B.5 we display the full regression output when we check for a social norm effect at the initial statutory retirement age of 65.

B.1 Net labor force participation for the youngest spouse

Male = old in cohort 1	(1)	(2)	(3)	(4)
α	0.278***	0.274***	0.247***	0.352***
	(0.001)	(0.001)	(0.004)	(0.008)
R^y	-0.178***	-0.178***	-0.175***	-0.140***
	(0.001)	(0.001)	(0.001)	(0.002)
R^o	-0.020***	-0.020***	-0.011***	-0.009***
	(0.002)	(0.002)	(0.002)	(0.002)
$Age^o - Age(R^o)$	-0.011***	-0.010***	-0.004	-0.009***
	(0.002)	(0.002)	(0.002)	(0.002)
$Age^y - Age(R^y)$	-0.033***	-0.034***	-0.034***	-0.021***
	(0.0001)	(0.0001)	(0.0001)	(0.0004)
$(Age^y - Age(R^y)) * R^y$	0.006***	0.006***	0.004***	0.0185***
	(0.001)	(0.001)	(0.001)	(0.001)
$(Age^o - Age(R^o)) * R^o$	0.011***	0.010***	0.011***	0.004
	(0.002)	(0.002)	(0.003)	(0.003)
Controls	NO	YES	YES	YES
Year dummies	NO	NO	YES	YES
Cohort dummies	NO	NO	NO	YES
Adj. R^2	12.6%	12.8%	12.8%	13.3%
Households	21,148	21,148	21,148	21,148

*Table 13 The effect of male pension eligibility (male = oldest spouse) on female net labor supply. Robust standard errors are between parentheses. ***denotes significance at the 1%-level, ** denotes significance at the 5% level, and * denotes significance at the 10% level.*

Male = old in cohort 1	(1)	(2)	(3)	(4)
α	0.278***	0.274***	0.247***	0.352***
	(0.005)	(0.005)	(0.014)	(0.051)
R^y	-0.178***	-0.178***	-0.175***	-0.140***
	(0.004)	(0.004)	(0.004)	(0.004)
R^o	-0.020***	-0.020***	-0.011***	-0.009***
	(0.002)	(0.002)	(0.001)	(0.001)
$Age^o - Age(R^o)$	-0.011***	-0.010***	-0.004	-0.009
	(0.002)	(0.002)	(0.006)	(0.006)
$Age^y - Age(R^y)$	-0.033***	-0.034***	-0.034***	-0.021***
	(0.001)	(0.001)	(0.001)	(0.003)
$(Age^y - Age(R^y)) * R^y$	0.006***	0.006***	0.004**	0.0185***
	(0.002)	(0.002)	(0.002)	(0.003)
$(Age^o - Age(R^o)) * R^o$	0.011***	0.010***	0.011***	0.004
	(0.002)	(0.002)	(0.004)	(0.004)
Controls	NO	YES	YES	YES
Year dummies	NO	NO	YES	YES
Cohort dummies	NO	NO	NO	YES
Adj. R^2	12.6%	12.8%	12.8%	13.3%
Households	21,148	21,148	21,148	21,148

*Table 14 The effect of male pension eligibility (male = oldest spouse) on female net labor supply. Clustered standard errors at the household level are between parentheses. ***denotes significance at the 1%-level, ** denotes significance at the 5% level, and * denotes significance at the10% level.*

Male = old in cohort 2	(1)	(2)	(3)	(4)
α	0.293***	0.293***	0.286***	0.354***
	(0.001)	(0.001)	(0.004)	(0.007)
R^y	-0.178***	-0.177***	-0.176***	-0.138***
	(0.002)	(0.002)	(0.002)	(0.002)
R^o	-0.014***	-0.014***	-0.010***	-0.008***
	(0.002)	(0.002)	(0.002)	(0.002)
$Age^o - Age(R^o)$	-0.016***	-0.016***	-0.017***	-0.022***
	(0.001)	(0.001)	(0.002)	(0.002)
$Age^y - Age(R^y)$	-0.030***	-0.030***	-0.030***	-0.021***
	(0.0001)	(0.0001)	(0.0001)	(0.0004)
$(Age^y - Age(R^y)) * R^y$	-0.023***	-0.023***	-0.024***	-0.0121***
	(0.002)	(0.002)	(0.002)	(0.002)
$(Age^o - Age(R^o)) * R^o$	0.012***	0.012***	0.015***	0.009***
	(0.001)	(0.001)	(0.003)	(0.003)
Controls	NO	YES	YES	YES
Year dummies	NO	NO	YES	YES
Cohort dummies	NO	NO	NO	YES
Adj. R^2	8.9%	9.0%	9.0%	9.5%
Households	20,224	20,224	20,224	20,224

*Table 15 The effect of male pension eligibility (male = oldest spouse) on female net labor supply. Robust standard errors are between parentheses. ***denotes significance at the 1%-level, ** denotes significance at the 5% level, and * denotes significance at the10% level.*

Male = old in cohort 2	(1)	(2)	(3)	(4)
α	0.293***	0.293***	0.286***	0.354***
	(0.005)	(0.005)	(0.011)	(0.044)
R^y	-0.178***	-0.177***	-0.176***	-0.138***
	(0.005)	(0.005)	(0.005)	(0.004)
R^o	-0.014***	-0.014***	-0.010***	-0.008***
	(0.002)	(0.002)	(0.001)	(0.001)
$Age^o - Age(R^o)$	-0.016***	-0.016***	-0.017***	-0.022***
	(0.001)	(0.001)	(0.006)	(0.006)
$Age^y - Age(R^y)$	-0.030***	-0.030***	-0.030***	-0.021***
	(0.0001)	(0.001)	(0.001)	(0.003)
$(Age^y - Age(R^y)) * R^y$	-0.023***	-0.023***	-0.024***	-0.0121**
	(0.004)	(0.004)	(0.004)	(0.005)
$(Age^o - Age(R^o)) * R^o$	0.012***	0.012***	0.015***	0.009**
	(0.003)	(0.002)	(0.004)	(0.004)
Controls	NO	YES	YES	YES
Year dummies	NO	NO	YES	YES
Cohort dummies	NO	NO	NO	YES
Adj. R^2	8.9%	9.0%	9.0%	9.5%
Households	20,224	20,224	20,224	20,224

*Table 16 The effect of male pension eligibility (male = oldest spouse) on female net labor supply. Clustered standard errors at the household level are between parentheses. ***denotes significance at the 1%-level, ** denotes significance at the 5% level, and * denotes significance at the10% level.*

Male = old in cohort 3	(1)	(2)	(3)	(4)
α	0.32***	0.315***	0.315***	0.4678***
	(0.001)	(0.001)	(0.003)	(0.006)
R^y	-0.150***	-0.148***	-0.148***	-0.0904***
	(0.006)	(0.006)	(0.006)	(0.006)
R^o	-0.010***	-0.010***	-0.009***	-0.008***
	(0.002)	(0.002)	(0.002)	(0.002)
$Age^o - Age(R^o)$	-0.012***	-0.011***	-0.006***	-0.012***
	(0.001)	(0.002)	(0.002)	(0.002)
$Age^y - Age(R^y)$	-0.028***	-0.029***	-0.029***	-0.015***
	(0.0001)	(0.0001)	(0.0001)	(0.0003)
$(Age^y - Age(R^y)) * R^y$	-0.163***	-0.161***	-0.161***	-0.169***
	(0.013)	(0.013)	(0.013)	(0.013)
$(Age^o - Age(R^o)) * R^o$	0.001	0.00001	-0.006**	-0.012***
	(0.002)	(0.02)	(0.003)	(0.003)
Controls	NO	YES	YES	YES
Year dummies	NO	NO	YES	YES
Cohort dummies	NO	NO	NO	YES
Adj. R^2	6.4%	6.8%	6.8%	7.3%
Households	19,665	19,665	19,665	19,665

*Table 17 The effect of male pension eligibility (male = oldest spouse) on female net labor supply. Robust standard errors are between parentheses. ***denotes significance at the 1%-level, ** denotes significance at the 5% level, and * denotes significance at the10% level.*

Male = old in cohort 3	(1)	(2)	(3)	(4)
α	0.32***	0.315***	0.315***	0.4678***
	(0.005)	(0.005)	(0.003)	(0.0368)
R^y	-0.150***	-0.148***	-0.148***	-0.0904***
	(0.007)	(0.007)	(0.007)	(0.006)
R^o	-0.010***	-0.010***	-0.009***	-0.008***
	(0.002)	(0.002)	(0.001)	(0.001)
$Age^o - Age(R^o)$	-0.012***	-0.011***	-0.006	-0.012**
	(0.001)	(0.001)	(0.006)	(0.006)
$Age^y - Age(R^y)$	-0.028***	-0.029***	-0.029***	-0.015***
	(0.001)	(0.001)	(0.001)	(0.004)
$(Age^y - Age(R^y)) * R^y$	-0.163***	-0.161***	-0.161***	-0.169***
	(0.02)	(0.015)	(0.016)	(0.016)
$(Age^o - Age(R^o)) * R^o$	0.001	0.00001	-0.006	-0.012***
	(0.003)	(0.003)	(0.004)	(0.004)
Controls	NO	YES	YES	YES
Year dummies	NO	NO	YES	YES
Cohort dummies	NO	NO	NO	YES
Adj. R^2	6.4%	6.8%	6.8%	7.3%
Households	19,665	19,665	19,665	19,665

*Table 18 The effect of male pension eligibility (male = oldest spouse) on female net labor supply. Clustered standard errors at the household level are between parentheses. ***denotes significance at the 1%-level, ** denotes significance at the 5% level, and * denotes significance at the10% level.*

Female = old in cohort 1	(1)	(2)	(3)	(4)
α	0.464***	0.466***	0.410***	0.475***
	(0.004)	(0.004)	(0.012)	(0.021)
R^y	-0.294***	-0.293***	-0.288***	-0.244***
	(0.004)	(0.004)	(0.004)	(0.004)
R^o	-0.021***	-0.020***	-0.007	-0.003
	(0.005)	(0.005)	(0.006)	(0.005)
$Age^o - Age(R^o)$	-0.024***	-0.023***	-0.0002	-0.008
	(0.004)	(0.004)	(0.006)	(0.006)
$Age^y - Age(R^y)$	-0.038***	-0.038***	-0.038***	-0.026***
	(0.0003)	(0.0003)	(0.0003)	(0.001)
$(Age^y - Age(R^y)) * R^y$	0.006**	0.005**	0.001	0.021***
	(0.003)	(0.003)	(0.003)	(0.003)
$(Age^o - Age(R^o)) * R^o$	0.022***	0.022***	0.014*	0.003
	(0.005)	(0.005)	(0.08)	(0.007)
Controls	NO	YES	YES	YES
Year dummies	NO	NO	YES	YES
Cohort dummies	NO	NO	NO	YES
Adj. R^2	22.2%	22.5%	22.6%	23.3%
Households	2,663	2,663	2,663	2,663

*Table 19 The effect of female pension eligibility (female = oldest spouse) on male net labor supply. Robust standard errors are between parentheses. ***denotes significance at the 1%-level, ** denotes significance at the 5% level, and * denotes significance at the10% level.*

Female = old in cohort 1	(1)	(2)	(3)	(4)
α	0.464***	0.466***	0.410***	0.475***
	(0.013)	(0.013)	(0.037)	(0.118)
R^y	-0.294***	-0.293***	-0.288***	-0.244***
	(0.011)	(0.011)	(0.011)	(0.011)
R^o	-0.021***	-0.020***	-0.007	-0.003
	(0.006)	(0.006)	(0.005)	(0.005)
$Age^o - Age(R^o)$	-0.024***	-0.023***	-0.0002	-0.008
	(0.006)	(0.006)	(0.015)	(0.016)
$Age^y - Age(R^y)$	-0.038***	-0.038***	-0.038***	-0.026***
	(0.002)	(0.002)	(0.002)	(0.007)
$(Age^y - Age(R^y)) * R^y$	0.006	0.005	0.001	0.021***
	(0.006)	(0.006)	(0.007)	(0.008)
$(Age^o - Age(R^o)) * R^o$	0.0216**	0.0216***	0.014	0.003
	(0.008)	(0.008)	(0.013)	(0.013)
Controls	NO	YES	YES	YES
Year dummies	NO	NO	YES	YES
Cohort dummies	NO	NO	NO	YES
Adj. R^2	22.2%	22.5%	22.6%	23.3%
Households	2,663	2,663	2,663	2,663

*Table 20 The effect of female pension eligibility (female = oldest spouse) on male net labor supply. Clustered standard errors at the household level are between parentheses. ***denotes significance at the 1%-level, ** denotes significance at the 5% level, and * denotes significance at the10% level.*

Female = old in cohort 2	(1)	(2)	(3)	(4)
α	0.493***	0.485***	0.484***	0.599***
	(0.003)	(0.004)	(0.010)	(0.023)
R^y	-0.287***	-0.286***	-0.283***	-0.224***
	(0.005)	(0.006)	(0.006)	(0.006)
R^o	-0.031***	-0.031***	-0.022***	-0.017***
	(0.005)	(0.005)	(0.006)	(0.006)
$Age^o - Age(R^o)$	-0.024***	-0.023***	-0.016***	-0.029***
	(0.002)	(0.002)	(0.005)	(0.005)
$Age^y - Age(R^y)$	-0.032***	-0.032***	-0.032***	-0.011***
	(0.0004)	(0.0004)	(0.0004)	(0.001)
$(Age^y - Age(R^y)) * R^y$	-0.049***	-0.049***	-0.052***	-0.024***
	(0.006)	(0.006)	(0.006)	(0.006)
$(Age^o - Age(R^o)) * R^o$	0.042***	0.041***	0.031***	0.015**
	(0.0035)	(0.0035)	(0.007)	(0.007)
Controls	NO	YES	YES	YES
Year dummies	NO	NO	YES	YES
Cohort dummies	NO	NO	NO	YES
Adj. R^2	14.7%	15.3%	15.3%	16.9%
Households	2,526	2,526	2,526	2,526

*Table 21 The effect of female pension eligibility (female = oldest spouse) on male net labor supply. Robust standard errors are between parentheses. ***denotes significance at the 1%-level, ** denotes significance at the 5% level, and * denotes significance at the10% level.*

Female = old in cohort 2	(1)	(2)	(3)	(4)
α	0.493***	0.493***	0.484***	0.599***
	(0.014)	(0.014)	(0.030)	(0.137)
R^y	-0.287***	-0.287***	-0.283***	-0.224***
	(0.012)	(0.012)	(0.012)	(0.011)
R^o	-0.031***	-0.031***	-0.022***	-0.017***
	(0.006)	(0.006)	(0.005)	(0.005)
$Age^o - Age(R^o)$	-0.024***	-0.024***	-0.016	-0.029*
	(0.005)	(0.005)	(0.0014)	(0.016)
$Age^y - Age(R^y)$	-0.032***	-0.032***	-0.032***	-0.011
	(0.0003)	(0.0003)	(0.003)	(0.009)
$(Age^y - Age(R^y)) * R^y$	-0.049***	-0.049***	-0.052***	-0.024*
	(0.011)	(0.011)	(0.011)	(0.012)
$(Age^o - Age(R^o)) * R^o$	0.042***	0.042***	0.031***	0.015
	(0.007)	(0.007)	(0.012)	(0.013)
Controls	NO	YES	YES	YES
Year dummies	NO	NO	YES	YES
Cohort dummies	NO	NO	NO	YES
Adj. R^2	14.7%	15.3%	15.3%	16.9%
Households	2,526	2,526	2,526	2,526

*Table 22 The effect of female pension eligibility (female = oldest spouse) on male net labor supply. Clustered standard errors at the household level are between parentheses. ***denotes significance at the 1%-level, ** denotes significance at the 5% level, and * denotes significance at the10% level.*

Female = old in cohort 3	(1)	(2)	(3)	(4)
α	0.515***	0.513***	0.497***	0.618***
	(0.003)	(0.003)	(0.008)	(0.017)
R^y	-0.186***	-0.187***	-0.185***	-0.137***
	(0.014)	(0.014)	(0.014)	(0.014)
R^o	-0.026***	-0.026***	-0.020***	-0.017***
	(0.006)	(0.006)	(0.006)	(0.006)
$Age^o - Age(R^o)$	-0.024***	-0.023***	-0.029***	-0.039***
	(0.001)	(0.001)	(0.003)	(0.004)
$Age^y - Age(R^y)$	-0.030***	-0.030***	-0.030***	-0.014***
	(0.0003)	(0.0003)	(0.0003)	(0.001)
$(Age^y - Age(R^y)) * R^y$	-0.274***	-0.275***	-0.280***	-0.284***
	(0.031)	(0.031)	(0.031)	(0.031)
$(Age^o - Age(R^o)) * R^o$	0.006	0.006	0.021**	0.010
	(0.006)	(0.006)	(0.008)	(0.008)
Controls	NO	YES	YES	YES
Year dummies	NO	NO	YES	YES
Cohort dummies	NO	NO	NO	YES
Adj. R^2	9.9%	10.4%	10.4%	11.5%
Households	2,473	2,473	2,473	2,473

*Table 23 The effect of female pension eligibility (female = oldest spouse) on male net labor supply. Robust standard errors are between parentheses. ***denotes significance at the 1%-level, ** denotes significance at the 5% level, and * denotes significance at the10% level.*

Female = old in cohort 3	(1)	(2)	(3)	(4)
α	0.515***	0.513***	0.497***	0.618***
	(0.013)	(0.014)	(0.020)	(0.104)
R^y	-0.186***	-0.187***	-0.185***	-0.137***
	(0.016)	(0.016)	(0.016)	(0.014)
R^o	-0.026***	-0.026***	-0.020***	-0.017***
	(0.007)	(0.007)	(0.005)	(0.005)
$Age^o - Age(R^o)$	-0.024***	-0.023***	-0.029**	-0.039***
	(0.003)	(0.003)	(0.014)	(0.015)
$Age^y - Age(R^y)$	-0.030***	-0.030***	-0.030***	-0.014*
	(0.002)	(0.002)	(0.002)	(0.007)
$(Age^y - Age(R^y)) * R^y$	-0.274***	-0.275***	-0.280***	-0.284***
	(0.034)	(0.034)	(0.035)	(0.035)
$(Age^o - Age(R^o)) * R^o$	0.006	0.006	0.021	0.010
	(0.010)	(0.010)	(0.013)	(0.014)
Controls	NO	YES	YES	YES
Year dummies	NO	NO	YES	YES
Cohort dummies	NO	NO	NO	YES
Adj. R^2	9.9%	10.4%	10.4%	11.5%
Households	2,473	2,473	2,473	2,473

*Table 24 The effect of female pension eligibility (female = oldest spouse) on male net labor supply. Clustered standard errors at the household level are between parentheses. ***denotes significance at the 1%-level, ** denotes significance at the 5% level, and * denotes significance at the10% level.*

B.2 Labor supply of the oldest spouse

Male = old in cohort 1 (own labor supply)	(1)	(2)	(3)	(4)
α	0.469*** (0.001)	0.468*** (0.002)	0.451*** (0.004)	0.433*** (0.007)
R^y	0.002 (0.002)	0.0002 (0.002)	0.005** (0.002)	0.009*** (0.002)
R^o	-0.301*** (0.002)	-0.301*** (0.002)	-0.267*** (0.002)	-0.267*** (0.002)
$Age^o - Age(R^o)$	-0.063*** (0.002)	-0.063*** (0.002)	-0.063*** (0.002)	-0.062*** (0.002)
$Age^y - Age(R^y)$	-0.008*** (0.0001)	-0.006*** (0.0001)	-0.006*** (0.0001)	-0.007*** (0.0004)
$(Age^y - Age(R^y)) * R^y$	0.005*** (0.001)	0.004*** (0.001)	-0.003** (0.001)	0.007*** (0.001)
$(Age^o - Age(R^o)) * R^o$	0.040*** (0.002)	0.040*** (0.002)	0.037*** (0.003)	0.035*** (0.003)
Controls	NO	YES	YES	YES
Year dummies	NO	NO	YES	YES
Cohort dummies	NO	NO	NO	YES
Adj. R^2	18.6%	18.8%	18.9%	18.9%
Households	21,148	21,148	21,148	21,148

*Table 25 The effect of male pension eligibility (male = oldest spouse) on male net labor supply. Robust standard errors are between parentheses. ***denotes significance at the 1%-level, ** denotes significance at the 5% level, and * denotes significance at the10% level.*

Male = old in cohort 1 (own labor supply)	(1)	(2)	(3)	(4)
α	0.469*** (0.005)	0.468*** (0.005)	0.451*** (0.011)	0.433*** (0.036)
R^y	0.002 (0.004)	0.0002 (0.004)	0.005 (0.004)	0.009*** (0.003)
R^o	-0.301*** (0.003)	-0.301*** (0.003)	-0.267*** (0.003)	-0.267*** (0.003)
$Age^o - Age(R^o)$	-0.063*** (0.002)	-0.063*** (0.002)	-0.063*** (0.006)	-0.062*** (0.006)
$Age^y - Age(R^y)$	-0.008*** (0.001)	-0.006*** (0.001)	-0.006*** (0.001)	-0.007*** (0.002)
$(Age^y - Age(R^y)) * R^y$	0.005* (0.003)	0.004 (0.003)	-0.003 (0.003)	0.007** (0.003)
$(Age^o - Age(R^o)) * R^o$	0.040*** (0.002)	0.040*** (0.002)	0.037*** (0.006)	0.035*** (0.006)
Controls	NO	YES	YES	YES
Year dummies	NO	NO	YES	YES
Cohort dummies	NO	NO	NO	YES
Adj. R^2	18.6%	18.8%	18.9%	18.9%
Households	21,148	21,148	21,148	21,148

*Table 26 The effect of male pension eligibility (male = oldest spouse) on male net labor supply. Clustered standard errors at the household level are between parentheses. ***denotes significance at the 1%-level, ** denotes significance at the 5% level, and * denotes significance at the10% level.*

Male = old in cohort 2 (own labor supply)	(1)	(2)	(3)	(4)
α	0.488*** (0.001)	0.484*** (0.001)	0.452*** (0.003)	0.4865*** (0.006)
R^y	0.001 (0.002)	-0.001 (0.003)	0.004 (0.003)	0.019*** (0.003)
R^o	-0.304*** (0.002)	-0.304*** (0.002)	-0.278*** (0.002)	-0.277*** (0.002)
$Age^o - Age(R^o)$	-0.064*** (0.001)	-0.065*** (0.001)	-0.083*** (0.002)	-0.084*** (0.002)
$Age^y - Age(R^y)$	-0.010*** (0.0001)	-0.008*** (0.0001)	-0.008*** (0.0001)	-0.005*** (0.0004)
$(Age^y - Age(R^y)) * R^y$	0.00002 (0.003)	-0.001 (0.003)	-0.011*** (0.003)	-0.002 (0.002)
$(Age^o - Age(R^o)) * R^o$	0.032*** (0.001)	0.032*** (0.001)	0.055*** (0.002)	0.053*** (0.002)
Controls	NO	YES	YES	YES
Year dummies	NO	NO	YES	YES
Cohort dummies	NO	NO	NO	YES
Adj. R^2	22.3%	22.5%	22.6%	22.6%
Households	20,224	20,224	20,224	20,224

*Table 27 The effect of male pension eligibility (male = oldest spouse) on male net labor supply. Robust standard errors are between parentheses. ***denotes significance at the 1%-level, ** denotes significance at the 5% level, and * denotes significance at the10% level.*

Male = old in cohort 2 (own labor supply)	(1)	(2)	(3)	(4)
α	0.488***	0.484***	0.452***	0.4865***
	(0.005)	(0.005)	(0.009)	(0.032)
R^y	0.001	-0.001	0.004	0.019***
	(0.005)	(0.005)	(0.005)	(0.005)
R^o	-0.304***	-0.304***	-0.278***	-0.277***
	(0.003)	(0.003)	(0.003)	(0.003)
$Age^o - Age(R^o)$	-0.064***	-0.065***	-0.083***	-0.084***
	(0.001)	(0.001)	(0.005)	(0.006)
$Age^y - Age(R^y)$	-0.010***	-0.008***	-0.008***	-0.005**
	(0.001)	(0.001)	(0.001)	(0.002)
$(Age^y - Age(R^y)) * R^y$	0.00002	-0.001	-0.011**	-0.002
	(0.005)	(0.005)	(0.005)	(0.006)
$(Age^o - Age(R^o)) * R^o$	0.032***	0.032***	0.055***	0.053***
	(0.002)	(0.002)	(0.006)	(0.006)
Controls	NO	YES	YES	YES
Year dummies	NO	NO	YES	YES
Cohort dummies	NO	NO	NO	YES
Adj. R^2	22.3%	22.5%	22.6%	22.6%
Households	20,224	20,224	20,224	20,224

*Table 28 The effect of male pension eligibility (male = oldest spouse) on male net labor supply. Clustered standard errors at the household level are between parentheses. ***denotes significance at the 1%-level, ** denotes significance at the 5% level, and * denotes significance at the 10% level.*

Male = old in cohort 3 (own labor supply)	(1)	(2)	(3)	(4)
α	0.509***	0.507***	0.469***	0.487***
	(0.001)	(0.001)	(0.003)	(0.005)
R^y	0.004	-0.0003	0.002	0.016***
	(0.007)	(0.007)	(0.006)	(0.007)
R^o	-0.288***	-0.289***	-0.276***	-0.275***
	(0.002)	(0.002)	(0.002)	(0.002)
$Age^o - Age(R^o)$	-0.061***	-0.062***	-0.076***	-0.077***
	(0.0005)	(0.0005)	(0.001)	(0.001)
$Age^y - Age(R^y)$	-0.011***	-0.009***	-0.009***	-0.006***
	(0.0001)	(0.0001)	(0.0001)	(0.0003)
$(Age^y - Age(R^y)) * R^y$	0.030*	0.029*	0.018	0.016
	(0.016)	(0.016)	(0.016)	(0.016)
$(Age^o - Age(R^o)) * R^o$	-0.018***	-0.018***	0.017***	0.016***
	(0.002)	(0.002)	(0.003)	(0.003)
Controls	NO	YES	YES	YES
Year dummies	NO	NO	YES	YES
Cohort dummies	NO	NO	NO	YES
Adj. R^2	21.6%	21.9%	21.9%	22.0%
Households	19,665	19,665	19,665	19,665

*Table 29 The effect of male pension eligibility (male = oldest spouse) on male net labor supply. Robust standard errors are between parentheses. ***denotes significance at the 1%-level, ** denotes significance at the 5% level, and * denotes significance at the10% level.*

Male = old in cohort 3 (own labor supply)	(1)	(2)	(3)	(4)
α	0.509*** (0.005)	0.507*** (0.005)	0.469*** (0.006)	0.487*** (0.026)
R^y	0.004 (0.008)	-0.0003 (0.008)	0.002 (0.008)	0.016* (0.009)
R^o	-0.288*** (0.003)	-0.289*** (0.003)	-0.276*** (0.003)	-0.275*** (0.003)
$Age^o - Age(R^o)$	-0.061*** (0.001)	-0.062*** (0.001)	-0.076*** (0.005)	-0.077*** (0.001)
$Age^y - Age(R^y)$	-0.011*** (0.001)	-0.009*** (0.001)	-0.009*** (0.001)	-0.006*** (0.002)
$(Age^y - Age(R^y)) * R^y$	0.030 (0.02)	0.029 (0.019)	0.018 (0.019)	0.016 (0.019)
$(Age^o - Age(R^o)) * R^o$	-0.018*** (0.003)	-0.018*** (0.003)	0.017*** (0.006)	0.016*** (0.006)
Controls	NO	YES	YES	YES
Year dummies	NO	NO	YES	YES
Cohort dummies	NO	NO	NO	YES
Adj. R^2	21.6%	21.9%	21.9%	22.0%
Households	19,665	19,665	19,665	19,665

*Table 30 The effect of male pension eligibility (male = oldest spouse) on male net labor supply. Clustered standard errors at the household level are between parentheses. ***denotes significance at the 1%-level, ** denotes significance at the 5% level, and * denotes significance at the10% level.*

Female = old in cohort 1 (own labor supply)	(1)	(2)	(3)	(4)
α	0.505***	0.498***	0.482***	0.388***
	(0.004)	(0.004)	(0.008)	(0.021)
R^y	-0.014***	-0.013***	-0.002	-0.010***
	(0.003)	(0.003)	(0.003)	(0.003)
R^o	-0.346***	-0.346***	-0.298***	-0.298***
	(0.005)	(0.005)	(0.005)	(0.005)
$Age^o - Age(R^o)$	-0.079***	-0.079***	-0.069***	-0.065***
	(0.004)	(0.004)	(0.007)	(0.007)
$Age^y - Age(R^y)$	-0.0003	0.0002	0.0003	-0.005***
	(0.0003)	(0.0003)	(0.0003)	(0.001)
$(Age^y - Age(R^y)) * R^y$	0.020***	0.020***	0.008***	0.009***
	(0.002)	(0.002)	(0.002)	(0.002)
$(Age^o - Age(R^o)) * R^o$	0.038***	0.037***	0.022***	0.023***
	(0.005)	(0.005)	(0.007)	(0.007)
Controls	NO	YES	YES	YES
Year dummies	NO	NO	YES	YES
Cohort dummies	NO	NO	NO	YES
Adj. R^2	27.7%	27.9%	28.1%	28.2%
Households	2,663	2,663	2,663	2,663

*Table 31 The effect of female pension eligibility (female = oldest spouse) on female net labor supply. Robust standard errors are between parentheses. ***denotes significance at the 1%-level, ** denotes significance at the 5% level, and * denotes significance at the10% level.*

Female = old in cohort 1 (own labor supply)	(1)	(2)	(3)	(4)
α	0.505***	0.498***	0.482***	0.388***
	(0.012)	(0.012)	(0.025)	(0.112)
R^y	-0.014***	-0.013*	-0.002	-0.010
	(0.007)	(0.007)	(0.007)	(0.007)
R^o	-0.346***	-0.346***	-0.298***	-0.298***
	(0.009)	(0.009)	(0.008)	(0.008)
$Age^o - Age(R^o)$	-0.079***	-0.079***	-0.069***	-0.065***
	(0.006)	(0.006)	(0.016)	(0.017)
$Age^y - Age(R^y)$	-0.0003	0.0002	0.0003	-0.005
	(0.002)	(0.002)	(0.002)	(0.007)
$(Age^y - Age(R^y)) * R^y$	0.020***	0.020***	0.008	0.009
	(0.005)	(0.005)	(0.016)	(0.006)
$(Age^o - Age(R^o)) * R^o$	0.038***	0.037***	0.022	0.023
	(0.007)	(0.007)	(0.023)	(0.016)
Controls	NO	YES	YES	YES
Year dummies	NO	NO	YES	YES
Cohort dummies	NO	NO	NO	YES
Adj. R^2	27.7%	27.9%	28.1	28.2%
Households	2,663	2,663	2,663	2,663

*Table 32 The effect of female pension eligibility (female = oldest spouse) on female net labor supply. Clustered standard errors at the household level are between parentheses. ***denotes significance at the 1%-level, ** denotes significance at the 5% level, and * denotes significance at the10% level.*

Female = old in cohort 2 (own labor supply)	(1)	(2)	(3)	(4)
α	0.492***	0.484***	0.427***	0.362***
	(0.004)	(0.004)	(0.008)	(0.021)
R^y	-0.023***	-0.023***	-0.015***	-0.005
	(0.004)	(0.004)	(0.004)	(0.004)
R^o	-0.323***	-0.324***	-0.291***	-0.290***
	(0.004)	(0.004)	(0.005)	(0.005)
$Age^o - Age(R^o)$	-0.086***	-0.084***	-0.066***	-0.066***
	(0.002)	(0.002)	(0.005)	(0.005)
$Age^y - Age(R^y)$	-0.001**	-0.0005	-0.0004	-0.002
	(0.0003)	(0.0003)	(0.0004)	(0.001)
$(Age^y - Age(R^y)) * R^y$	0.018***	0.018***	0.005	0.016***
	(0.005)	(0.005)	(0.005)	(0.005)
$(Age^o - Age(R^o)) * R^o$	0.040***	0.039***	0.036***	0.032***
	(0.003)	(0.003)	(0.006)	(0.006)
Controls	NO	YES	YES	YES
Year dummies	NO	NO	YES	YES
Cohort dummies	NO	NO	NO	YES
Adj. R^2	27.5%	28.0%	28.1%	28.2%
Households	2,526	2,526	2,526	2,526

*Table 33 The effect of female pension eligibility (female = oldest spouse) on female net labor supply. Robust standard errors are between parentheses. ***denotes significance at the 1%-level, ** denotes significance at the 5% level, and * denotes significance at the10% level.*

Female = old in cohort 2 (own labor supply)	(1)	(2)	(3)	(4)
α	0.492***	0.484***	0.427***	0.362***
	(0.012)	(0.013)	(0.021)	(0.115)
R^y	-0.023**	-0.023**	-0.015*	-0.005
	(0.008)	(0.008)	(0.009)	(0.009)
R^o	-0.323***	-0.324***	-0.291***	-0.290***
	(0.009)	(0.009)	(0.008)	(0.008)
$Age^o - Age(R^o)$	-0.086***	-0.084***	-0.066***	-0.066***
	(0.004)	(0.004)	(0.015)	(0.016)
$Age^y - Age(R^y)$	-0.001**	-0.0005	-0.0004	-0.002
	(0.002)	(0.002)	(0.002)	(0.008)
$(Age^y - Age(R^y)) * R^y$	0.018**	0.018**	0.005	0.016*
	(0.007)	(0.008)	(0.008)	(0.009)
$(Age^o - Age(R^o)) * R^o$	0.040***	0.039***	0.036**	0.032**
	(0.006)	(0.006)	(0.016)	(0.016)
Controls	NO	YES	YES	YES
Year dummies	NO	NO	YES	YES
Cohort dummies	NO	NO	NO	YES
Adj. R^2	27.5%	28.0%	28.1%	28.2%
Households	2,526	2,526	2,526	2,526

*Table 34 The effect of female pension eligibility (female = oldest spouse) on female net labor supply. Clustered standard errors at the household level are between parentheses. ***denotes significance at the 1%-level, ** denotes significance at the 5% level, and * denotes significance at the10% level.*

Female = old in cohort 3 (own labor supply)	(1)	(2)	(3)	(4)
α	0.522***	0.516***	0.471***	0.596***
	(0.003)	(0.003)	(0.006)	(0.019)
R^y	-0.022**	-0.023**	-0.018*	-0.004
	(0.010)	(0.010)	(0.010)	(0.009)
R^o	-0.301***	-0.302***	-0.284***	-0.284***
	(0.010)	(0.005)	(0.006)	(0.006)
$Age^o - Age(R^o)$	-0.077***	-0.076***	-0.086***	-0.092***
	(0.001)	(0.001)	(0.004)	(0.004)
$Age^y - Age(R^y)$	-0.003***	-0.002***	-0.002***	0.008***
	(0.0004)	(0.0004)	(0.0004)	(0.001)
$(Age^y - Age(R^y)) * R^y$	0.076***	0.075***	0.063***	0.057**
	(0.023)	(0.023)	(0.023)	(0.023)
$(Age^o - Age(R^o)) * R^o$	-0.038***	-0.038***	-0.006	-0.008
	(0.004)	(0.005)	(0.007)	(0.007)
Controls	NO	YES	YES	YES
Year dummies	NO	NO	YES	YES
Cohort dummies	NO	NO	NO	YES
Adj. R^2	24.9%	25.2%	25.3%	25.4%
Households	2,473	2,473	2,473	2,473

*Table 35 The effect of female pension eligibility (female = oldest spouse) on female net labor supply. Robust standard errors are between parentheses. ***denotes significance at the 1%-level, ** denotes significance at the 5% level, and * denotes significance at the10% level.*

Female = old in cohort 3 (own labor supply)	(1)	(2)	(3)	(4)
α	0.522***	0.516***	0.471***	0.596***
	(0.012)	(0.013)	(0.016)	(0.019)
R^y	-0.022*	-0.023*	-0.018	-0.004
	(0.012)	(0.012)	(0.012)	(0.014)
R^o	-0.301***	-0.302***	-0.284***	-0.284***
	(0.009)	(0.009)	(0.008)	(0.008)
$Age^o - Age(R^o)$	-0.077***	-0.076***	-0.086***	-0.092***
	(0.004)	(0.004)	(0.014)	(0.015)
$Age^y - Age(R^y)$	-0.003	-0.002	-0.002	0.008
	(0.002)	(0.002)	(0.002)	(0.007)
$(Age^y - Age(R^y)) * R^y$	0.076***	0.075***	0.063**	0.057**
	(0.026)	(0.026)	(0.027)	(0.027)
$(Age^o - Age(R^o)) * R^o$	-0.038***	-0.038***	-0.006	-0.008
	(0.008)	(0.008)	(0.02)	(0.017)
Controls	NO	YES	YES	YES
Year dummies	NO	NO	YES	YES
Cohort dummies	NO	NO	NO	YES
Adj. R^2	24.9%	25.2%	25.3%	25.4%
Households	2,473	2,473	2,473	2,473

*Table 36 The effect of female pension eligibility (female = oldest spouse) on female net labor supply. Clustered standard errors at the household level are between parentheses. ***denotes significance at the 1%-level, ** denotes significance at the 5% level, and * denotes significance at the10% level.*

B.3 Regression tables for low wage and high wage income households

In the regression tables below, we run the same regression as equation (1) after splitting our data into rich and poor households for each pension cohort of the older spouse. To do so, we use the household wage income in January 2014. The results are presented below.

Male = old in cohort 1 (female labor supply)	Low wage income	High wage income
α	0.220*** (0.074)	0.488*** (0.066)
R^y	-0.094*** (0.004)	-0.221*** (0.007)
R^o	-0.003* (0.002)	-0.018*** (0.002)
$Age^o - Age(R^o)$	0.002 (0.008)	-0.015* (0.009)
$Age^y - Age(R^y)$	-0.022*** (0.004)	-0.017*** (0.004)
$\left(Age^y - Age(R^y)\right) * R^y$	0.019*** (0.003)	0.007 (0.005)
$(Age^o - Age(R^o) * R^o)$	-0.003 (0.005)	0.011* (0.006)
Controls	YES	YES
Year Dummies	YES	YES
Cohort dummies	YES	YES
Adj. R^2	9.2%	17.2%
Households	11,936	9,212

*Table 37 The effect of male pension eligibility (male = oldest spouse) on female net labor supply for different wage income groups. Clustered standard errors at the household level are between parentheses. ***denotes significance at the 1%-level, ** denotes significance at the 5% level, and * denotes significance at the 10% level.*

Male = old in cohort 2 (female labor supply)	Low wage income	High wage income
α	0.175**	0.497***
	(0.072)	(0.048)
R^y	-0.097***	-0.205***
	(0.005)	(0.007)
R^o	-0.003*	-0.016***
	(0.002)	(0.002)
$Age^o - Age(R^o)$	-0.004	-0.020**
	(0.008)	(0.008)
$Age^y - Age(R^y)$	-0.018***	-0.018***
	(0.005)	(0.003)
$\left(Age^y - Age(R^y)\right) * R^y$	-0.008	-0.025***
	(0.006)	(0.009)
$(Age^o - Age(R^o) * R^o)$	0.002	0.010
	(0.005)	(0.006)
Controls	YES	YES
Year Dummies	YES	YES
Cohort dummies	YES	YES
Adj. R^2	5.6%	14.1%
Households	11,036	9,188

*Table 38 The effect of male pension eligibility (male = oldest spouse) on female net labor supply for different wage income groups. Clustered standard errors at the household level are between parentheses. ***denotes significance at the 1%-level, ** denotes significance at the 5% level, and * denotes significance at the10% level.*

Male = old in cohort 3 (female labor supply)	Low wage income	High wage income
α	0.385***	0.553***
	(0.054)	(0.041)
R^y	-0.059***	-0.143***
	(0.007)	(0.011)
R^o	-0.006***	-0.011***
	(0.002)	(0.003)
$Age^o - Age(R^o)$	0.002	-0.019**
	(0.008)	(0.008)
$Age^y - Age(R^y)$	-0.012***	-0.016***
	(0.003)	(0.003)
$\left(Age^y - Age(R^y)\right) * R^y$	-0.144***	-0.216***
	(0.018)	(0.029)
$(Age^o - Age(R^o) * R^o)$	-0.013***	-0.014**
	(0.005)	(0.007)
Controls	YES	YES
Year Dummies	YES	YES
Cohort dummies	YES	YES
Adj. R^2	4.8%	10.8%
Households	11,037	8,628

*Table 39 The effect of male pension eligibility (male = oldest spouse) on female net labor supply for different wage income groups. Clustered standard errors at the household level are between parentheses. ***denotes significance at the 1%-level, ** denotes significance at the 5% level, and * denotes significance at the10% level.*

Male = old in cohort 1 (male own labor supply)	Low wage income	High wage income
α	0.234***	0.692***
	(0.051)	(0.046)
R^y	-0.000	-0.014***
	(0.004)	(0.005)
R^o	-0.138***	-0.436***
	(0.003)	(0.005)
$Age^o - Age(R^o)$	-0.021**	-0.096***
	(0.003)	(0.006)
$Age^y - Age(R^y)$	-0.004	-0.005**
	(0.003)	(0.003)
$\left(Age^y - Age(R^y)\right) * R^y$	0.005*	-0.009*
	(0.003)	(0.005)
$(Age^o - Age(R^o) * R^o)$	0.012*	0.050***
	(0.007)	(0.007)
Controls	YES	YES
Year Dummies	YES	YES
Cohort dummies	YES	YES
Adj. R^2	6.7%	41.3%
Households	11,936	9,212

*Table 40 The effect of male pension eligibility (male = oldest spouse) on male net labor supply for different wage income groups. Clustered standard errors at the household level are between parentheses. ***denotes significance at the 1%-level, ** denotes significance at the 5% level, and * denotes significance at the10% level.*

Male = old in cohort 2 (male own labor supply)	Low wage income	High wage income
α	0.376***	0.593***
	(0.053)	(0.037)
R^y	0.019***	-0.006
	(0.006)	(0.007)
R^o	-0.193***	-0.380***
	(0.004)	(0.005)
$Age^o - Age(R^o)$	-0.061***	-0.078***
	(0.008)	(0.005)
$Age^y - Age(R^y)$	-0.004	-0.003
	(0.003)	(0.002)
$\left(Age^y - Age(R^y)\right) * R^y$	-0.003	-0.010
	(0.007)	(0.008)
$(Age^o - Age(R^o) * R^o)$	0.037***	0.042***
	(0.008)	(0.007)
Controls	YES	YES
Year Dummies	YES	YES
Cohort dummies	YES	YES
Adj. R^2	11.2%	43.2%
Households	11,036	9,188

*Table 41 The effect of male pension eligibility (male = oldest spouse) on male net labor supply for different wage income groups. Clustered standard errors at the household level are between parentheses. ***denotes significance at the 1%-level, ** denotes significance at the 5% level, and * denotes significance at the10% level.*

Male = old in cohort 3 (male own labor supply)	Low wage income	High wage income
α	0.408***	0.570***
	(0.040)	(0.029)
R^y	0.015	0.002
	(0.011)	(0.012)
R^o	-0.240***	-0.322***
	(0.004)	(0.005)
$Age^o - Age(R^o)$	-0.069***	-0.075***
	(0.008)	(0.005)
$Age^y - Age(R^y)$	-0.007***	-0.003*
	(0.003)	(0.002)
$\left(Age^y - Age(R^y)\right) * R^y$	0.031	-0.010
	(0.025)	(0.030)
$(Age^o - Age(R^o) * R^o)$	0.016**	0.004
	(0.008)	(0.008)
Controls	YES	YES
Year Dummies	YES	YES
Cohort dummies	YES	YES
Adj. R^2	14.0%	38.1%
Households	11,037	8,628

*Table 42 The effect of male pension eligibility (male = oldest spouse) on male net labor supply for different wage income groups. Clustered standard errors at the household level are between parentheses. ***denotes significance at the 1%-level, ** denotes significance at the 5% level, and * denotes significance at the10% level.*

Female = old in cohort 1 (male labor supply)	Low wage income	High wage income
α	0.315	0.775***
	(0.201)	(0.100)
R^y	-0.146***	-0.382***
	(0.013)	(0.016)
R^o	-0.002	-0.007
	(0.006)	(0.008)
$Age^o - Age(R^o)$	0.024	-0.045***
	(0.023)	(0.012)
$Age^y - Age(R^y)$	-0.034***	-0.008
	(0.012)	(0.005)
$\left(Age^y - Age(R^y)\right) * R^y$	0.010	0.002
	(0.010)	(0.012)
$(Age^o - Age(R^o) * R^o)$	-0.014	0.026
	(0.016)	(0.018)
Controls	YES	YES
Year Dummies	YES	YES
Cohort dummies	YES	YES
Adj. R^2	15.2%	38.4%
Households	1,451	1,212

*Table 43 The effect of female pension eligibility (female = oldest spouse) on male net labor supply for different wage income groups. Clustered standard errors at the household level are between parentheses. ***denotes significance at the 1%-level, ** denotes significance at the 5% level, and * denotes significance at the10% level.*

Female = old in cohort 2 (male labor supply)	Low wage income	High wage income
α	0.435**	0.509***
	(0.199)	(0.133)
R^y	-0.152***	-0.337***
	(0.013)	(0.017)
R^o	-0.013**	-0.023***
	(0.006)	(0.008)
$Age^o - Age(R^o)$	-0.027	-0.024*
	(0.023)	(0.014)
$Age^y - Age(R^y)$	-0.013	-0.030***
	(0.013)	(0.009)
$\left(Age^y - Age(R^y)\right) * R^y$	0.003	-0.074***
	(0.016)	(0.018)
$(Age^o - Age(R^o) * R^o)$	0.022	0.016
	(0.016)	(0.018)
Controls	YES	YES
Year Dummies	YES	YES
Cohort dummies	YES	YES
Adj. R^2	12.6%	27.6%
Households	1,374	1,152

*Table 44 The effect of female pension eligibility (female = oldest spouse) on male net labor supply for different wage income groups. Clustered standard errors at the household level are between parentheses. ***denotes significance at the 1%-level, ** denotes significance at the 5% level, and * denotes significance at the10% level.*

Female = old in cohort 3 (male labor supply)	Low wage income	High wage income
α	0.626***	0.544***
	(0.148)	(0.111)
R^y	-0.085***	-0.212***
	(0.018)	(0.020)
R^o	-0.012*	-0.026***
	(0.006)	(0.008)
$Age^o - Age(R^o)$	-0.008	-0.045***
	(0.021)	(0.015)
$Age^y - Age(R^y)$	-0.013	-0.020**
	(0.010)	(0.008)
$\left(Age^y - Age(R^y)\right) * R^y$	-0.244***	-0.344***
	(0.049)	(0.051)
$(Age^o - Age(R^o) * R^o)$	-0.011	0.025
	(0.017)	(0.022)
Controls	YES	YES
Year Dummies	YES	YES
Cohort dummies	YES	YES
Adj. R^2	9.2%	19.2%
Households	1,339	1,134

*Table 45 The effect of female pension eligibility (female = oldest spouse) on male net labor supply for different wage income groups. Clustered standard errors at the household level are between parentheses. ***denotes significance at the 1%-level, ** denotes significance at the 5% level, and * denotes significance at the10% level.*

Female = old in cohort 1 (female own labor supply)	Low wage income	High wage income
α	0.395*** (0.130)	0.449*** (0.169)
R^y	-0.021** (0.009)	-0.013 (0.011)
R^o	-0.244*** (0.010)	-0.366*** (0.012)
$Age^o - Age(R^o)$	-0.050** (0.023)	-0.091*** (0.023)
$Age^y - Age(R^y)$	0.006 (0.008)	-0.011 (0.010)
$\left(Age^y - Age(R^y)\right) * R^y$	-0.005 (0.008)	0.015 (0.010)
$(Age^o - Age(R^o) * R^o)$	0.013 (0.021)	0.039* (0.023)
Controls	YES	YES
Year Dummies	YES	YES
Cohort dummies	YES	YES
Adj. R^2	21.9%	37.4%
Households	1,451	1,212

*Table 46 The effect of female pension eligibility (female = oldest spouse) on female net labor supply for different wage income groups. Clustered standard errors at the household level are between parentheses. ***denotes significance at the 1%-level, ** denotes significance at the 5% level, and * denotes significance at the10% level.*

Female = old in cohort 2 (female own labor supply)	Low wage income	High wage income
α	0.246* (0.145)	0.463*** (0.167)
R^y	-0.007 (0.012)	-0.019 (0.014)
R^o	-0.253*** (0.011)	-0.335*** (0.013)
$Age^o - Age(R^o)$	-0.046** (0.023)	-0.088*** (0.022)
$Age^y - Age(R^y)$	-0.009 (0.009)	0.004 (0.011)
$\left(Age^y - Age(R^y)\right) * R^y$	0.011 (0.013)	0.017 (0.014)
$(Age^o - Age(R^o) * R^o)$	0.019 (0.022)	0.051** (0.022)
Controls	YES	YES
Year Dummies	YES	YES
Cohort dummies	YES	YES
Adj. R^2	22.1%	37.0%
Households	1,374	1,152

*Table 47 The effect of female pension eligibility (female = oldest spouse) on female net labor supply for different wage income groups. Clustered standard errors at the household level are between parentheses. ***denotes significance at the 1%-level, ** denotes significance at the 5% level, and * denotes significance at the10% level.*

Female = old in cohort 3 (female own labor supply)	Low wage income	High wage income
α	0.627***	0.462***
	(0.137)	(0.149)
R^y	0.005	-0.020
	(0.019)	(0.019)
R^o	-0.271***	-0.301***
	(0.011)	(0.019)
$Age^o - Age(R^o)$	-0.099***	-0.057***
	(0.022)	(0.020)
$Age^y - Age(R^y)$	0.013	-0.005
	(0.009)	(0.011)
$\left(Age^y - Age(R^y)\right) * R^y$	0.044	0.071*
	(0.037)	(0.040)
$(Age^o - Age(R^o) * R^o)$	-0.007	-0.021
	(0.023)	(0.023)
Controls	YES	YES
Year Dummies	YES	YES
Cohort dummies	YES	YES
Adj. R^2	20.9%	33.0%
Households	1,339	1,134

*Table 48 The effect of female pension eligibility (female = oldest spouse) on female net labor supply for different wage income groups. Clustered standard errors at the household level are between parentheses. ***denotes significance at the 1%-level, ** denotes significance at the 5% level, and * denotes significance at the10% level.*

B.4 Part-time factor

Male = old in cohort 1	(1)	(2)	(3)	(4)
α	0.139***	0.136***	0.122***	0.200***
	(0.001)	(0.001)	(0.003)	(0.006)
R^y	-0.095***	-0.094***	-0.093***	-0.077***
	(0.001)	(0.0001)	(0.001)	(0.001)
R^o	-0.010***	-0.010***	-0.006***	-0.005***
	(0.001)	(0.001)	(0.001)	(0.001)
$Age^o - Age(R^o)$	-0.003***	-0.002**	0.001	-0.003**
	(0.001)	(0.001)	(0.002)	(0.002)
$Age^y - Age(R^y)$	-0.026***	-0.026***	-0.026***	-0.018***
	(0.0001)	(0.0001)	(0.0001)	(0.0003)
$(Age^y - Age(R^y)) * R^y$	0.009***	0.010***	0.008***	0.014***
	(0.0005)	(0.0005)	(0.0005)	(0.001)
$(Age^o - Age(R^o)) * R^o$	0.004***	0.004***	0.005**	0.002
	(0.001)	(0.001)	(0.002)	(0.002)
Controls	NO	YES	YES	YES
Year dummies	NO	NO	YES	YES
Cohort dummies	NO	NO	NO	YES
Adj. R^2	13.4%	13.5%	13.5%	13.8%
Households	21,148	21,148	21,148	21,148

*Table 49 The effect of male pension eligibility (male = oldest spouse) on female's part-time factor. Robust standard errors are between parentheses. ***denotes significance at the 1%-level, ** denotes significance at the 5% level, and * denotes significance at the10% level.*

Male = old in cohort 1	(1)	(2)	(3)	(4)
α	0.139***	0.136***	0.122***	0.200***
	(0.004)	(0.003)	(0.010)	(0.040)
R^y	-0.095***	-0.094***	-0.093***	-0.077***
	(0.003)	(0.003)	(0.003)	(0.002)
R^o	-0.010***	-0.010***	-0.006***	-0.005***
	(0.001)	(0.001)	(0.001)	(0.001)
$Age^o - Age(R^o)$	-0.003**	-0.002*	0.001	-0.003
	(0.002)	(0.002)	(0.004)	(0.004)
$Age^y - Age(R^y)$	-0.026***	-0.026***	-0.026***	-0.018***
	(0.001)	(0.001)	(0.001)	(0.002)
$(Age^y - Age(R^y)) * R^y$	0.009***	0.010***	0.008***	0.014***
	(0.001)	(0.001)	(0.001)	(0.002)
$(Age^o - Age(R^o)) * R^o$	0.004***	0.004**	0.005*	0.002
	(0.001)	(0.001)	(0.003)	(0.003)
Controls	NO	YES	YES	YES
Year dummies	NO	NO	YES	YES
Cohort dummies	NO	NO	NO	YES
Adj. R^2	13.4%	13.5%	13.5%	13.8%
Households	21,148	21,148	21,148	21,148

*Table 50 The effect of male pension eligibility (male = oldest spouse) on female's part-time factor. Clustered standard errors at the household level are between parentheses. ***denotes significance at the 1%-level, ** denotes significance at the 5% level, and * denotes significance at the10% level.*

Male = old in cohort 2	(1)	(2)	(3)	(4)
α	0.149***	0.147***	0.133***	0.167***
	(0.001)	(0.001)	(0.002)	(0.005)
R^y	-0.092***	-0.091***	-0.090***	-0.071***
	(0.001)	(0.001)	(0.001)	(0.001)
R^o	-0.010***	-0.010***	-0.005***	-0.005***
	(0.001)	(0.001)	(0.001)	(0.001)
$Age^o - Age(R^o)$	-0.005***	-0.005***	-0.002*	-0.005***
	(0.001)	(0.001)	(0.001)	(0.001)
$Age^y - Age(R^y)$	-0.024***	-0.025***	-0.024***	-0.019***
	(0.0001)	(0.0001)	(0.0001)	(0.0003)
$(Age^y - Age(R^y)) * R^y$	-0.008***	-0.008***	-0.009***	-0.005***
	(0.001)	(0.001)	(0.001)	(0.001)
$(Age^o - Age(R^o)) * R^o$	0.004***	0.004***	0.007***	0.004**
	(0.001)	(0.001)	(0.002)	(0.002)
Controls	NO	YES	YES	YES
Year dummies	NO	NO	YES	YES
Cohort dummies	NO	NO	NO	YES
Adj. R^2	10.1%	10.3%	10.3%	10.6%
Households	20,224	20,224	20,224	20,224

*Table 51 The effect of male pension eligibility (male = oldest spouse) female's part-time factor. Robust standard errors are between parentheses. ***denotes significance at the 1%-level, ** denotes significance at the 5% level, and * denotes significance at the10% level.*

Male = old in cohort 2	(1)	(2)	(3)	(4)
α	0.149***	0.147***	0.133***	0.167***
	(0.004)	(0.004)	(0.007)	(0.034)
R^y	-0.092***	-0.091***	-0.090***	-0.071***
	(0.003)	(0.003)	(0.003)	(0.003)
R^o	-0.010***	-0.010***	-0.005***	-0.005***
	(0.001)	(0.001)	(0.001)	(0.001)
$Age^o - Age(R^o)$	-0.005***	-0.005***	-0.002	-0.005***
	(0.001)	(0.001)	(0.003)	(0.004)
$Age^y - Age(R^y)$	-0.024***	-0.025***	-0.024***	-0.019***
	(0.001)	(0.001)	(0.001)	(0.002)
$(Age^y - Age(R^y)) * R^y$	-0.008***	-0.008***	-0.009***	-0.005***
	(0.002)	(0.002)	(0.002)	(0.003)
$(Age^o - Age(R^o)) * R^o$	0.004***	0.004***	0.007***	0.004**
	(0.001)	(0.001)	(0.003)	(0.003)
Controls	NO	YES	YES	YES
Year dummies	NO	NO	YES	YES
Cohort dummies	NO	NO	NO	YES
Adj. R^2	10.1%	10.3%	10.3%	10.6%
Households	20,224	20,224	20,224	20,224

*Table 52 The effect of male pension eligibility (male = oldest spouse) female's part-time factor. Clustered standard errors at the household level are between parentheses. ***denotes significance at the 1%-level, ** denotes significance at the 5% level, and * denotes significance at the10% level.*

Male = old in cohort 3	(1)	(2)	(3)	(4)
α	0.167***	0.164***	0.164***	0.311***
	(0.001)	(0.001)	(0.002)	(0.004)
R^y	-0.072***	-0.071***	-0.071***	-0.040***
	(0.004)	(0.004)	(0.004)	(0.004)
R^o	-0.006***	-0.006***	-0.005***	-0.005***
	(0.001)	(0.001)	(0.002)	(0.002)
$Age^o - Age(R^o)$	-0.004***	-0.003***	0.0002	-0.005***
	(0.0004)	(0.0004)	(0.001)	(0.001)
$Age^y - Age(R^y)$	-0.023***	-0.023***	-0.023***	-0.012***
	(0.0001)	(0.0001)	(0.0001)	(0.0003)
$(Age^y - Age(R^y)) * R^y$	-0.103***	-0.101***	-0.100***	-0.108***
	(0.008)	(0.008)	(0.008)	(0.008)
$(Age^o - Age(R^o)) * R^o$	-0.001	-0.002	-0.007***	-0.010***
	(0.001)	(0.001)	(0.002)	(0.002)
Controls	NO	YES	YES	YES
Year dummies	NO	NO	YES	YES
Cohort dummies	NO	NO	NO	YES
Adj. R^2	7.3%	7.5%	7.5%	8.0%
Households	19,665	19,665	19,665	19,665

*Table 53 The effect of male pension eligibility (male = oldest spouse) on female's part-time factor. Robust standard errors are between parentheses. ***denotes significance at the 1%-level, ** denotes significance at the 5% level, and * denotes significance at the10% level.*

Male = old in cohort 3	(1)	(2)	(3)	(4)
α	0.167***	0.164***	0.164***	0.311***
	(0.004)	(0.004)	(0.005)	(0.029)
R^y	-0.072***	-0.071***	-0.071***	-0.040***
	(0.005)	(0.005)	(0.005)	(0.004)
R^o	-0.006***	-0.006***	-0.005***	-0.005***
	(0.001)	(0.001)	(0.001)	(0.001)
$Age^o - Age(R^o)$	-0.004***	-0.003***	0.0002	-0.005***
	(0.001)	(0.001)	(0.004)	(0.004)
$Age^y - Age(R^y)$	-0.023***	-0.023***	-0.023***	-0.012***
	(0.001)	(0.001)	(0.001)	(0.002)
$(Age^y - Age(R^y)) * R^y$	-0.103***	-0.101***	-0.100***	-0.108***
	(0.009)	(0.009)	(0.010)	(0.010)
$(Age^o - Age(R^o)) * R^o$	-0.001	-0.002	-0.007***	-0.010***
	(0.002)	(0.002)	(0.003)	(0.003)
Controls	NO	YES	YES	YES
Year dummies	NO	NO	YES	YES
Cohort dummies	NO	NO	NO	YES
Adj. R^2	7.3%	7.5%	7.5%	8.0%
Households	19,665	19,665	19,665	19,665

*Table 54 The effect of male pension eligibility (male = oldest spouse) on female's part-time factor. Clustered standard errors at the household level are between parentheses. ***denotes significance at the 1%-level, ** denotes significance at the 5% level, and * denotes significance at the10% level.*

Female = old in cohort 1	(1)	(2)	(3)	(4)
α	0.40***	0.396***	0.336***	0.369***
	(0.004)	(0.004)	(0.010)	(0.020)
R^y	-0.279***	-0.278***	-0.273***	-0.230***
	(0.003)	(0.003)	(0.003)	(0.004)
R^o	-0.021***	-0.021***	-0.008	-0.004
	(0.005)	(0.004)	(0.005)	(0.005)
$Age^o - Age(R^o)$	-0.022***	-0.021***	0.002	-0.005
	(0.004)	(0.004)	(0.006)	(0.006)
$Age^y - Age(R^y)$	-0.040***	-0.040***	-0.040***	-0.030***
	(0.0003)	(0.0003)	(0.0003)	(0.001)
$(Age^y - Age(R^y)) * R^y$	0.007***	0.006***	0.002	0.023***
	(0.002)	(0.002)	(0.002)	(0.002)
$(Age^o - Age(R^o)) * R^o$	0.022***	0.021***	0.015**	0.004
	(0.004)	(0.004)	(0.007)	(0.007)
Controls	NO	YES	YES	YES
Year dummies	NO	NO	YES	YES
Cohort dummies	NO	NO	YES	YES
Adj. R^2	25.4%	25.7%	25.7%	26.6%
Households	2,663	2,663	2,663	2,663

*Table 55 The effect of female pension eligibility (female = oldest spouse) on male's part-time factor. Robust standard errors are between parentheses. ***denotes significance at the 1%-level, ** denotes significance at the 5% level, and * denotes significance at the10% level.*

Female = old in cohort 1	(1)	(2)	(3)	(4)
α	0.40***	0.396***	0.336***	0.369***
	(0.011)	(0.012)	(0.032)	(0.117)
R^y	-0.279***	-0.278***	-0.273*	-0.230***
	(0.010)	(0.010)	(0.010)	(0.010)
R^o	-0.021***	-0.021***	-0.008*	-0.004
	(0.005)	(0.005)	(0.004)	(0.004)
$Age^o - Age(R^o)$	-0.022***	-0.021***	0.002	-0.005
	(0.006)	(0.006)	(0.015)	(0.015)
$Age^y - Age(R^y)$	-0.040***	-0.040***	-0.040***	-0.030***
	(0.002)	(0.002)	(0.002)	(0.007)
$(Age^y - Age(R^y)) * R^y$	0.007	0.006	0.002	0.023***
	(0.007)	(0.004)	(0.004)	(0.007)
$(Age^o - Age(R^o)) * R^o$	0.022***	0.021***	0.015**	0.004
	(0.007)	(0.007)	(0.012)	(0.012)
Controls	NO	YES	YES	YES
Year dummies	NO	NO	YES	YES
Cohort dummies	NO	NO	YES	YES
Adj. R^2	25.4%	25.7%	25.7%	26.6%
Households	2,663	2,663	2,663	2,663

*Table 56 The effect of female pension eligibility (female = oldest spouse) on male's part-time factor. Clustered standard errors at the household level are between parentheses. ***denotes significance at the 1%-level, ** denotes significance at the 5% level, and * denotes significance at the10% level.*

Female = old in cohort 2	(1)	(2)	(3)	(4)
α	0.418***	0.412***	0.393***	0.476***
	(0.003)	(0.003)	(0.009)	(0.022)
R^y	-0.277***	-0.276***	-0.273***	-0.218***
	(0.005)	(0.005)	(0.005)	(0.005)
R^o	-0.026***	-0.026***	-0.018***	-0.013**
	(0.005)	(0.005)	(0.006)	(0.006)
$Age^o - Age(R^o)$	-0.023***	-0.021***	-0.010**	-0.022***
	(0.002)	(0.002)	(0.005)	(0.005)
$Age^y - Age(R^y)$	-0.034***	-0.034***	-0.034***	-0.015***
	(0.0004)	(0.0004)	(0.0004)	(0.001)
$(Age^y - Age(R^y)) * R^y$	-0.041***	-0.041***	-0.044***	-0.017***
	(0.004)	(0.004)	(0.005)	(0.005)
$(Age^o - Age(R^o)) * R^o$	0.033***	0.031***	0.026***	0.011
	(0.003)	(0.003)	(0.007)	(0.006)
Controls	NO	YES	YES	YES
Year dummies	NO	NO	YES	YES
Cohort dummies	NO	NO	YES	YES
Adj. R^2	16.8%	17.5%	17.5%	19.1%
Households	2,526	2,526	2,526	2,526

*Table 57 The effect of female pension eligibility (female = oldest spouse) on male's part-time factor. Robust standard errors are between parentheses. ***denotes significance at the 1%-level, ** denotes significance at the 5% level, and * denotes significance at the10% level.*

Female = old in cohort 2	(1)	(2)	(3)	(4)
α	0.418***	0.412***	0.393***	0.476***
	(0.013)	(0.013)	(0.027)	(0.136)
R^y	-0.277***	-0.276***	-0.273***	-0.218***
	(0.011)	(0.011)	(0.010)	(0.009)
R^o	-0.026***	-0.026***	-0.018***	-0.013***
	(0.005)	(0.005)	(0.004)	(0.004)
$Age^o - Age(R^o)$	-0.023***	-0.021***	-0.010	-0.022
	(0.004)	(0.004)	(0.014)	(0.016)
$Age^y - Age(R^y)$	-0.034***	-0.034***	-0.034***	-0.015
	(0.003)	(0.003)	(0.003)	(0.009)
$(Age^y - Age(R^y)) * R^y$	-0.041***	-0.041***	-0.044***	-0.017*
	(0.007)	(0.007)	(0.007)	(0.009)
$(Age^o - Age(R^o)) * R^o$	0.033***	0.031***	0.026**	0.011
	(0.006)	(0.006)	(0.012)	(0.012)
Controls	NO	YES	YES	YES
Year dummies	NO	NO	YES	YES
Cohort dummies	NO	NO	YES	YES
Adj. R^2	16.8%	17.5%	17.5%	19.1%
Households	2,526	2,526	2,526	2,526

*Table 58 The effect of female pension eligibility (female = oldest spouse) on male's part-time factor. Clustered standard errors at the household level are between parentheses. ***denotes significance at the 1%-level, ** denotes significance at the 5% level, and * denotes significance at the10% level.*

Female = old in cohort 3	(1)	(2)	(3)	(4)
α	0.441***	0.439***	0.417***	0.521***
	(0.003)	(0.003)	(0.007)	(0.017)
R^y	-0.197***	-0.197***	-0.195***	-0.144***
	(0.011)	(0.011)	(0.006)	(0.011)
R^o	-0.027***	-0.027***	-0.020***	-0.016***
	(0.005)	(0.005)	(0.006)	(0.006)
$Age^o - Age(R^o)$	-0.026***	-0.025***	-0.022***	-0.031***
	(0.001)	(0.001)	(0.004)	(0.004)
$Age^y - Age(R^y)$	-0.031***	-0.031***	-0.031***	-0.016***
	(0.0003)	(0.0003)	(0.0003)	(0.001)
$(Age^y - Age(R^y)) * R^y$	-0.230***	-0.232***	-0.238***	-0.241***
	(0.023)	(0.023)	(0.023)	(0.024)
$(Age^o - Age(R^o)) * R^o$	0.012**	0.012**	0.021***	0.010
	(0.006)	(0.005)	(0.008)	(0.008)
Controls	NO	YES	YES	YES
Year dummies	NO	NO	YES	YES
Cohort dummies	NO	NO	YES	YES
Adj. R^2	11.2%	11.5%	11.5%	12.7%
Households	2,473	2,473	2,473	2,473

*Table 59 The effect of female pension eligibility (female = oldest spouse) on male's part-time factor. Robust standard errors are between parentheses. ***denotes significance at the 1%-level, ** denotes significance at the 5% level, and * denotes significance at the10% level.*

Female = old in cohort 3	(1)	(2)	(3)	(4)
α	0.441***	0.439***	0.417***	0.521***
	(0.013)	(0.013)	(0.018)	(0.108)
R^y	-0.197***	-0.197***	-0.195***	-0.144***
	(0.013)	(0.013)	(0.012)	(0.011)
R^o	-0.027***	-0.027***	-0.020***	-0.016***
	(0.006)	(0.006)	(0.005)	(0.005)
$Age^o - Age(R^o)$	-0.026***	-0.025***	-0.022	-0.031**
	(0.003)	(0.003)	(0.013)	(0.015)
$Age^y - Age(R^y)$	-0.031***	-0.031***	-0.031***	-0.016**
	(0.002)	(0.002)	(0.002)	(0.008)
$(Age^y - Age(R^y)) * R^y$	-0.230***	-0.232***	-0.238***	-0.241***
	(0.025)	(0.025)	(0.026)	(0.027)
$(Age^o - Age(R^o)) * R^o$	0.012	0.012	0.021	0.010
	(0.009)	(0.008)	(0.013)	(0.013)
Controls	NO	YES	YES	YES
Year dummies	NO	NO	YES	YES
Cohort dummies	NO	NO	YES	YES
Adj. R^2	11.2%	11.5%	11.5%	12.7%
Households	2,473	2,473	2,473	2,473

*Table 60 The effect of female pension eligibility (female = oldest spouse) on male's part-time factor. Clustered standard errors at the household level are between parentheses. ***denotes significance at the 1%-level, ** denotes significance at the 5% level, and * denotes significance at the10% level.*

B.5 Initial statutory retirement age of 65

We first examine whether there is any discontinuity at the age of 65. The reason for doing this is that the age of 65 has been the initial age at which older workers receive first pillar pension benefits. In line with Behaghel and Blau (2012), this point could still serve as a reference point for workers. To do so, we run the following regression:

$$Q^y = \alpha + \beta_1 R^y + \beta_2 D^y 65 + \beta_3 R^o + \beta_4 D^o 65 + \beta_5 \left(Age^y - Age(R^y)\right) + \beta_6 (Age^o - 65) + \beta_7 \left(Age^y - Age(R^y)\right) * R^y + \beta_8 \left(Age^y - Age(R^y)\right) * D^y 65 + \beta_9 (Age^o - 65) * D^o 65 + \beta_{10} (Age^o - 65) * R^o + \beta_{11} D^y 65 * R^o + \beta_{11} X + \epsilon \quad (3)$$

The regression results are displayed in Table 47 and Table 48. We observe that the coefficient $D^y 65 * R^o$ is insignificant for all cohorts except for the cohort with statutory retirement age 65+9 and the male is the oldest spouse (column 3 of Table). Therefore, we conclude that the age of 65 does not serve as a reference point for the younger partner to leave the labor force.

Male = old / female = young	(1) 65+3	(2) 65+6	(3) 65+9
α	0.370*** (0.051)	0.383*** (0.045)	0.493*** (0.039)
R^y	-0.122*** (0.004)	-0.111*** (0.004)	-0.051*** (0.005)
D^y65	-0.012 (0.049)	-0.041* (0.022)	-0.010 (0.017)
R^o	-0.012*** (0.002)	-0.013*** (0.003)	-0.002 (0.003)
D^o65	-0.000 (0.001)	-0.001 (0.002)	-0.001 (0.001)
$Age^o - 65$	-0.009 (0.006)	-0.022*** (0.006)	-0.012** (0.006)
$Age^y - Age(R^y)$	-0.021*** (0.003)	-0.019*** (0.003)	-0.014*** (0.002)
$(Age^y - Age(R^y)) * R^y$	-0.011 (0.007)	-0.039** (0.008)	-0.196*** (0.018)
$(Age^y - Age(R^y)) * D^y65$	0.025*** (0.006)	0.023*** (0.006)	0.022** (0.008)
$(Age^o - 65) * D^o65$	-0.016** (0.008)	-0.001 (0.004)	-0.001 (0.004)
$(Age^o - 65) * R^o$	0.023*** (0.007)	0.015*** (0.005)	-0.002 (0.005)
$D^y65 * R^o$	-0.023 (0.049)	-0.010 (0.022)	-0.060*** (0.015)
Controls	YES	YES	YES
Year dummies	YES	YES	YES
Cohort dummies	YES	YES	YES
Adj. R^2	13.4%	9.6%	7.4%
Households	21,148	20,224	19,665

*Table 61 The effect of spousal labor supply (male = old) when younger partner reaches the age of 65. Clustered standard errors at the household level are between parentheses. ***denotes significance at the 1%-level, ** denotes significance at the 5% level, and * denotes significance at the10% level.*

Female = old / male = young	65+3	65+6	65+9
α	0.511*** (0.117)	0.650*** (0.140)	0.696*** (0.109)
R^y	-0.210*** (0.010)	-0.169*** (0.011)	-0.096*** (0.012)
$D^y 65$	-0.022 (0.083)	-0.080* (0.040)	-0.099*** (0.032)
R^o	-0.006 (0.006)	-0.011 (0.008)	-0.005 (0.012)
$D^o 65$	0.003 (0.004)	0.001 (0.005)	-0.004 (0.005)
$Age^o - 65$	-0.009 (0.016)	-0.031* (0.016)	-0.038*** (0.015)
$Age^y - Age(R^y)$	-0.024*** (0.006)	-0.009 (0.009)	-0.011 (0.007)
$(Age^y - Age(R^y)) * R^y$	-0.027 (0.020)	-0.014 (0.021)	-0.295*** (0.041)
$(Age^y - Age(R^y)) * D^y 65$	0.040** (0.017)	-0.018 (0.017)	0.008 (0.019)
$(Age^o - 65) * D^o 65$	-0.010 (0.023)	0.021 (0.014)	0.008 (0.011)
$(Age^o - 65) * R^o$	0.019 (0.022)	-0.000 (0.017)	0.001 (0.017)
$D^y 65 * R^o$	-0.047 (0.082)	-0.026 (0.038)	0.004 (0.028)
Controls	YES	YES	YES
Year dummies	YES	YES	YES
Cohort dummies	YES	YES	YES
Adj. R^2	23.4%	17.8%	11.7%
Households	2,663	2,526	2,473

*Table 62 The effect of spousal labor supply (female = old) when younger partner reaches the age of 65. Clustered standard errors at the household level are between parentheses. ***denotes significance at the 1%-level, ** denotes significance at the 5% level, and * denotes significance at the10% level.*

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