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Spousal Retirement, Mental Health, and Household Resource Allocation: Evidence from Married Couples in China

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Abstract

This paper examines how spousal retirement affects psychological well-being in Chinese households using 2016–2020 China Family Panel Survey data. Exploiting statutory retirement ages as instruments in a two-stage least squares framework, we identify causal effects of retirement transitions. Results show clear gender asymmetries in these spillover effects. For men, a wife's retirement increases life satisfaction regardless of the husband's labor-force status, with further gains in depression and marital satisfaction once both partners retire. For women, a husband's retirement raises depressive symptoms while the wife remains employed, but this effect disappears after her own retirement, when life satisfaction significantly improves. Mechanism analyses suggest these effects operate through gender-differentiated adjustments in household labor allocation and joint consumption patterns. These findings underscore that retirement in China is a collective family-level transition rather than an individual event, highlighting the role of institutional constraints and gender norms in shaping the welfare of aging couples.

JEL classification: J26; D13; I31; J14; J12

Keywords: Spousal retirement; Mental health; Household resource allocation; Gender differences; Family process; Retirement policy

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1 Introduction

By the end of 2024, China had approximately 220 million people aged 65 or above, accounting for about 15.6% of its total population (National Bureau of Statistics of China, 2025). This share is projected to exceed 30% by 2050 (United Nations, Department of Economic and Social Affairs, Population Division, 2024). As longevity rises and the labor force contracts, the issue of retirement has gained renewed scholarly and policy attention. Retirement marks not only the cessation of individual labor supply and the transition to pension-based income, but also a profound reorganization of household life. In China, where family interdependence remains strong and statutory retirement ages differ by gender (60 for men, 55 for female cadres, and 50 for female workers), retirement often unfolds asynchronously within couples. Because wives typically retire earlier than husbands, although this difference is partly offset by age gaps at marriage, the timing of spousal retirement is frequently staggered. This institutional design implies that one partner's retirement may influence both individuals and households through financial, care-giving, and relational channels.

A large body of literature has examined the effects of retirement on economic behavior and health outcomes at the individual level. From an economic perspective, retirement generally reduces work-related expenses and alters consumption structures, with declines in food expenditure and modest increases in leisure spending (Li et al., 2016; Battistin et al., 2009). Regarding health, scholars have used diverse indicators, including self-rated health (Eibich, 2015; Rose, 2020), BMI and obesity (Feng et al., 2020; Godard, 2016; Yang et al., 2023), physiological biomarkers (Behncke, 2012; Gorry and Slavov, 2021; Bertoni et al., 2018; Zhang et al., 2018), and oral health (Chen et al., 2024), to document both beneficial and adverse effects. In the psychological domain, studies have primarily focused on depression (Rose, 2020; Eibich, 2015), life satisfaction (Gorry et al., 2018), and cognitive functioning (Lei and Liu, 2018). These outcomes are thought to respond to changes in lifestyle and social engagement after retirement, such as improvements in sleep quality and duration (Eibich, 2015; Gorry et al., 2018), increased exercise (Lei and Liu, 2018; Kämpfen and Maurer, 2016), smoking cessation

(Zhu, 2016; Gorry et al., 2018), and enhanced participation in community activities. At the same time, retirement can also yield negative consequences, such as higher alcohol consumption among men (Feng et al., 2020) and physical decline among blue-collar workers due to reduced activity (Bertoni et al., 2018). Overall, the empirical evidence underscores that retirement is a major life transition with heterogeneous effects on behavior, health, and well-being.

In contrast, the interdependent nature of retirement within couples has received relatively less attention. A growing literature on spousal retirement spillovers reveals that one partner's retirement can have significant but inconsistent effects on the other's well-being. In Western contexts, some studies report that a husband's retirement increases wives' stress, depression, or sleep deprivation (Bertoni and Brunello, 2017; Müller and Shaikh, 2018), while others find positive effects through enhanced companionship and joint leisure time (Atalay and Zhu, 2018; Zang, 2020). Evidence on wives' retirement is equally mixed: some research suggests improvements in husbands' psychological health, whereas others find negligible or even adverse effects. Recent panel studies further highlight gender asymmetries. Women's retirement tends to reduce men's leisure satisfaction in the long run, while men's retirement often diminishes women's financial satisfaction (Austen et al., 2022). In the Chinese context, the literature remains limited and inconclusive. Studies based on the China Health and Retirement Longitudinal Survey (CHARLS) show that a husband's retirement may improve his wife's self-rated health by increasing her social participation and exercise frequency (Zang, 2020), whereas other evidence indicates that it may worsen wives' subjective well-being (Chen et al., 2022). Empirical work on how wives' retirement affects their husbands is scarce, leaving a notable gap in understanding the family-level consequences of retirement transitions in China.

This paper makes four contributions to the literature on retirement and household well-being. First, it introduces a two-way analytical framework for spousal retirement effects. Whereas prior studies typically examine only one direction, either the effect of the husband's retirement on the wife or the effect of the wife's retirement on

the husband (Bertoni and Brunello, 2017; Atalay and Barrett, 2018; Zang, 2020; Chen et al., 2022), this paper analyzes both within a unified design. This approach allows us to directly compare the two sets of effects, fills an important empirical gap, and contributes to international debates on spousal spillovers of retirement.

Second, it uncovers heterogeneity by gender and the sequencing of retirement transitions. We show that husbands' retirement has little impact on employed wives but positive effects on retired wives; in contrast, wives' retirement benefits husbands even when they themselves remain employed. This asymmetry suggests that men can "pre-enjoy" retirement benefits through their wives' earlier exit from the labor force. However, women gain little from their husbands' retirement while they are still working, as they experience a contraction in shared leisure consumption without any relief from their domestic workload. These findings reflect persistent gender norms in China, where domestic responsibilities are primarily assigned to women and bread-winning to men.

Third, we examine intra-household resource allocation as a mechanism. While much of the literature focuses on individual lifestyle adjustments, less attention has been paid to household-level reallocations. We analyze how spousal retirement affects relative income, the division of household labor, satisfaction with housework arrangements, and leisure-related expenditure.

Fourth, it advances outcome measurement by adopting a multidimensional perspective on psychological health. Rather than relying solely on depression, we incorporate life satisfaction and marital satisfaction as complementary outcomes. This broader framework captures both overall subjective well-being and relationship quality, providing a more comprehensive picture of psychological effects.

To investigate these questions, we use nationally representative data from the China Family Panel Survey (CFPS, 2016–2020), which provides detailed information on household composition, income, health, and well-being. To capture both early and delayed retirement while maintaining sufficient statistical power, we restrict the baseline sample to individuals within a $\pm$10-year window around the statutory retirement

age. To address endogeneity arising from non-random retirement timing, we exploit the gender-specific SRA as instrumental variables within a two-stage least squares (2SLS) framework with wave fixed effects. This identification strategy leverages exogenous variation in retirement eligibility to estimate causal effects of both own and spousal retirement.

Our results reveal pronounced gender asymmetries in spousal spillovers of retirement. For men, wives' retirement improves life satisfaction even while they remain employed, and joint retirement further enhances psychological well-being across multiple dimensions. For women, by contrast, husbands' retirement exerts little influence during employment but becomes beneficial after their own retirement, leading to lower depression and higher life satisfaction. Mechanism analyses suggest that these effects operate primarily through reallocations of domestic labor and increased joint leisure spending driven by the husband's or wife's exit from the labor force. These patterns highlight that retirement is a coordinated household process rather than a solitary individual event.

The remainder of this paper is organized as follows. Section 2 presents the institutional background. Section 3 describes the data. Section 4 outlines the empirical strategy. Section 5 reports the main results and heterogeneity analyses. Section 6 presents robustness checks. The final section concludes.

2 Institutional Background

China's retirement system originated from a series of regulations introduced in the 1950s and 1970s, which established a compulsory retirement scheme for urban employees. Statutory retirement ages (SRA) in China vary by gender and occupation. For cadres and employees in party and government organs, public institutions, and mass organizations, the SRA is set at 60 for men and 55 for women. For workers in enterprises and public institutions, the corresponding ages are 60 for men and 50 for women. In addition, earlier retirement is permitted under specific conditions.

Individuals engaged in hazardous or physically demanding occupations are eligible to retire at ages 55 for men and 45 for women. Those who are unable to work due to work-related illness or disability may retire at even younger ages, typically 50 for men and 40 for women. Given these diverse provisions, the SRA plays a crucial role in determining retirement eligibility.

China's retirement system is characterized by three salient features. First, it enforces compulsory retirement for the majority of urban employees: with few exceptions for special occupations, workers are required to retire at the statutory age and complete formal retirement procedures. Second, the system primarily covers urban workers, while no uniform retirement scheme exists in rural areas, where individuals decide when to withdraw from the labor market based on household conditions, creating a sharp urban–rural divide. Third, unlike in many developed countries, there are few restrictions on post-retirement employment in China, and retirees may re-enter the labor market while simultaneously receiving pensions.

These institutional features make China a particularly relevant case for studying spousal retirement. The gender-based differences in SRAs often result in wives retiring earlier than husbands, generating asynchronous retirement within couples. Such institutional arrangements may have profound implications for intra-household resource allocation, the division of housework, and spousal well-being.

3 Data

3.1 Data Source

The analysis is based on the China Family Panel Survey (CFPS), a nationally representative biennial longitudinal survey of Chinese communities, families, and individuals, conducted by the Institute of Social Science Survey (ISSS) of Peking University. This study uses the 2016–2020 waves because the construction of the depression scale was standardized only from 2016 onward, ensuring consistency of the main outcome variables.

3.2 Sample Selection

Guided by the statutory retirement system in China and the purpose of this study, we construct the analytical sample according to the following criteria. First, because our research question focuses on how one spouse's retirement affects the other spouse's outcomes, we restrict the sample to married individuals whose spouses are still alive and co-residing in the household. This ensures that retirement is studied as a couple-level process rather than an individual transition. Second, we limit the analysis to urban residents. The statutory retirement scheme applies primarily to urban employees covered by formal labor contracts, while retirement timing in rural areas is largely self-determined and not governed by statutory rules. Individuals who never participated in the labor market or who are self-employed are therefore excluded from the sample. Third, to isolate institutional variation in retirement from smooth age trends, we restrict the sample to a $\pm$10-year window around the SRA (60 for men and 50/55 for women). Accordingly, the male sample covers ages 50–70, and the female sample covers ages 40–65. This choice balances precision and potential bias: a narrower window would reduce sample size, while a wider window may introduce confounding life-cycle effects. To assess robustness, we also estimate the models using alternative windows (e.g., $\pm$7, $\pm$12, and $\pm$15 years).

3.3 Variable Definitions

The key explanatory variable is retirement status. Retirement is conceptually defined as an institutional exit from the labor force, referring to the formal transition out of employment under the statutory retirement system, rather than a general withdrawal from the labor market. We construct the retirement variable using the CFPS survey question asking whether the respondent has "officially completed retirement or resignation procedures." Individuals who report having completed such procedures are coded as 1, and 0 otherwise.

Although this question includes both "retirement" and "resignation," we treat them jointly as forms of institutional exit. In the Chinese institutional context, "resig-

nation" does not typically correspond to voluntary quitting. Instead, it often refers to policy-mediated exits from formal employment, such as internal retirement arrangements or exits due to health-related reasons, which are accompanied by institutional recognition and partial benefit entitlements. These forms of exit occur within the formal employment system and frequently serve as transitional stages toward full statutory retirement. Accordingly, both "retirement" and "resignation" reflect exits governed by institutional rules, making their joint classification consistent with the structure of the retirement system in China and with our identification strategy based on statutory retirement age.

The main outcome variables capture three dimensions of psychological outcomes: depression, life satisfaction, and marital satisfaction. Depression is measured using the 8-item CES-D scale (see Table A.1), with scores ranging from 0 to 24, where higher values indicate worse mental health. Life satisfaction is assessed on a 1–5 scale, where 1 represents "not at all satisfied" and 5 represents "completely satisfied." Marital satisfaction is measured on the same 1–5 scale based on self-reported satisfaction with one's spouse and is available only in the 2018 and 2020 CFPS waves. Other time-varying variables such as income and health are excluded, as they may be endogenous to retirement decisions.

To investigate underlying mechanisms, we introduce four household-level variables. First, the income ratio is defined as the ratio of the spouse's annual income to the respondent's annual income, both measured in Chinese Yuan (CNY). To accurately capture individual income, we synthesize multiple income modules from the CFPS, replacing labor earnings with pension benefits for retirees. Second, housework satisfaction measures the respondent's evaluation of the partner's contribution to domestic labor, assessed on a 1–5 scale (higher scores indicate greater satisfaction). Third, the share of housework is calculated as the respondent's daily housework hours relative to the couple's total housework hours. Finally, travel expenditure is measured as the household's annual per capita spending on travel in CNY. To mitigate right-skewness while retaining zero-expenditure observations, this variable is specified as

$\log(\text{travel expenditure per capita} + 1)$. We retain missing values as reported in the original CFPS data and allow the estimation procedure to drop observations with missing values.

3.4 Descriptive Statistics

Table 1 presents descriptive statistics for the analytical sample, split by gender and retirement status. The sample is constructed from a matched couple-level dataset. The final sample consists of 3362 male observations (1688 non-retired and 1674 retired) and 2295 female observations (1302 non-retired and 993 retired). This discrepancy in sample sizes arises because we restrict observations strictly to individuals within a $\pm$10-year window around their gender- and occupation-specific statutory retirement age (SRA). Consequently, while an individual may fall within their own analytical window, their spouse might be excluded if they are too young or too old to meet their respective age criterion. This structure preserves the intra-household framework while allowing us to cleanly focus on individuals whose retirement status is closely linked to institutional eligibility.

We also report the distribution of spousal age differences to assess whether the window restriction affects sample representativeness. In the main sample ($\pm$10-year window), the mean spousal age difference is approximately 2.40 years. This is consistent with evidence from the 2010 Chinese Census, which documents that the spousal age gap among urban couples in China is around 2.5 to 3.5 years (Cheng et al., 2025). As shown in Appendix Figure A.1, the kernel density distributions of spousal age differences are nearly identical across alternative window specifications ($\pm$5 to $\pm$15 years), suggesting that the window restriction does not systematically distort the distribution of spousal age gaps.

Table 1: Descriptive Statistics by Gender and Retirement Status

	Male			Female		
	Not Retired	Retired	Total	Not Retired	Retired	Total
Age	55.04	62.29	58.65	51.43	54.93	52.95
	(4.07)	(4.64)	(5.67)	(3.99)	(3.69)	(4.23)
Depression	4.00	3.85	3.92	5.68	4.98	5.38
	(3.46)	(3.55)	(3.51)	(3.92)	(3.76)	(3.87)
Life Satisfaction	3.97	4.02	3.99	3.89	3.92	3.91
	(0.97)	(0.95)	(0.96)	(1.00)	(0.96)	(0.98)
Marital Satisfaction	4.69	4.70	4.69	4.40	4.42	4.41
	(0.68)	(0.63)	(0.66)	(0.89)	(0.85)	(0.87)
Income Ratio	1.02	1.16	1.09	2.79	2.60	2.70
	(1.77)	(1.95)	(1.86)	(5.21)	(3.66)	(4.52)
Housework Satisfaction	4.62	4.65	4.63	4.02	3.95	3.98
	(0.76)	(0.72)	(0.74)	(1.12)	(1.19)	(1.15)
Share of Housework	0.30	0.34	0.32	0.68	0.70	0.69
	(0.25)	(0.25)	(0.25)	(0.26)	(0.25)	(0.25)
Travel Expenditure	2.27	2.89	2.58	1.83	3.03	2.35
	(3.28)	(3.58)	(3.44)	(2.99)	(3.57)	(3.31)
Age Gap with Spouse	2.19	2.45	2.32	2.54	2.27	2.42
	(2.03)	(2.40)	(2.23)	(2.49)	(2.16)	(2.36)
Cadre/Professional Occupation	0.16	0.10	0.13	0.16	0.17	0.17
	(0.37)	(0.30)	(0.34)	(0.37)	(0.38)	(0.37)
Observations	1688	1674	3362	1302	993	2295

Notes: This table reports descriptive statistics by gender and retirement status. The sample is restricted to individuals within a $\pm$10-year window around the statutory retirement age. Marital satisfaction and housework satisfaction are only available in the 2018 and 2020 survey waves, resulting in smaller sample sizes for these variables. In particular, the total number of observations is 2124 for men and 1506 for women. For the male sample, the number of observations is 1128 for the retired group and 996 for the non-retired group. For the female sample, the corresponding numbers are 685 and 821, respectively. Travel expenditure is measured as log per capita household travel spending.

4 Empirical Strategy

Our empirical analysis proceeds in two steps. We begin with a simplified baseline model that estimates the effect of spousal retirement on individual psychological outcomes. We then extend the framework to a joint specification that simultaneously incorporates both spousal and own retirement decisions, recognizing that retirement choices within couples are not entirely independent. Both specifications are estimated using two-stage least squares (2SLS), with SRA eligibility serving as an instrument for retirement status. Since SRA is determined by national policy and depends on age, gender, and occupation-specific institutional rules, it provides plausibly exogenous variation in retirement behavior.

4.1 Baseline IV Specification

We begin by estimating the effects of retirement on individual psychological outcomes. Specifically, we consider two baseline relationships: (i) the effect of an individual's own retirement and (ii) the effect of spousal retirement on the individual's health. The baseline specifications are given by:

$$\text{Health}_{it} = \alpha_0 + \alpha_1 R_{it} + \delta_t + \epsilon_{it}, \tag{1}$$

$$\text{Health}_{it} = \beta_0 + \beta_1 R^p_{it} + \delta_t + \epsilon_{it}, \tag{2}$$

where Health_{it} denotes psychological well-being (depression, life satisfaction, or marital satisfaction) for individual i in wave t. R_{it} indicates whether the individual is retired, and R^p_{it} indicates whether the spouse is retired. We pool data from the 2016, 2018, and 2020 waves of the CFPS and include wave fixed effects (δ_t) to control for common time variation across survey rounds. Because retirement is largely irreversible and usually occurs only once for most individuals, within-individual transitions are limited. As a result, a pooled IV framework with wave fixed effects is more suitable for exploiting cross-sectional variation in statutory retirement eligibility while preserving statistical power. Retirement status is potentially endogenous: individuals

in poor health may retire earlier, confounding the estimated relationship between retirement and well-being. We therefore estimate Equations (1) and (2) by 2SLS. We instrument retirement status using eligibility for the statutory retirement age (SRA), defined as:

$$D_{it} = \mathbb{1}\{\text{age}_{it} \geq \text{SRA}_i\}, \tag{3}$$

$$D_{it}^{p} = \mathbb{1}\{\text{spouse age}_{it} \geq \text{SRA}_i^{p}\}, \tag{4}$$

where D_{it} and D_{it}^{p} are indicator variables for whether the individual and their spouse, respectively, have reached their SRA. The SRA is determined by national policy based on age, gender, and occupational status, and is defined as:

$$\text{SRA}_i = \begin{cases} 60 & \text{if male} \\ 55 & \text{if female and in cadres or professional occupations} \\ 50 & \text{if female and in worker occupations} \end{cases} \tag{5}$$

The same classification applies to spouses, with their SRA denoted by SRA_i^{p}. In the main sample, 83.4% of female respondents are classified as workers and 16.6% as cadres and professionals. Detailed occupational classification criteria are provided in Appendix Table A.2. Since the SRA is determined by national policy rules rather than individual choice, it provides plausibly exogenous variation in retirement behavior. The corresponding first-stage regressions are:

$$R_{it} = \alpha_0 + \alpha_1 D_{it} + \delta_t + u_{it}, \tag{6}$$

$$R_{it}^{p} = \beta_0 + \beta_1 D_{it}^{p} + \delta_t + v_{it}. \tag{7}$$

4.2 Modeling Individual and Spousal Retirement Simultaneously

Focusing only on one partner's retirement is not sufficient, because retirement is often a joint household decision. If a husband and wife coordinate their retirement

timing, for example to maximize shared leisure, balance income, or reallocate household responsibilities, then estimating the effect of only one spouse's retirement may conflate true spillovers with correlated household choices. Previous studies that analyze only the husband's or the wife's retirement separately cannot distinguish between these mechanisms. Existing evidence also shows that couples often coordinate their retirement decisions, and that spousal retirement can generate significant spillover effects on the partner's health and behavior (Blau and Gilleskie, 2006; Atalay and Zhu, 2018; Zang, 2020; Chen et al., 2022).

To address this limitation, we extend the baseline model to a joint specification that treats both own and spousal retirement as endogenous. This design allows us to separately identify the causal effect of a spouse's retirement and the effect of one's own retirement, thereby clarifying how the two differ. By explicitly incorporating both partners, our strategy directly responds to the research gap highlighted in the introduction: retirement should be understood as a family-level process rather than an isolated individual event. The corresponding 2SLS system is:

$$\text{Health}_{it} = \pi_0 + \pi_1 R^p_{it} + \pi_2 R_{it} + \delta_t + \omega_{it}. \tag{8}$$

Correspondingly, the first-stage equations for the joint model regress the endogenous variables on both instruments to fully capture the intra-household retirement dynamics:

$$R^p_{it} = \gamma^p_0 + \gamma^p_1 D^p_{it} + \gamma^p_2 D_{it} + \delta_t + u^p_{it}, \tag{9}$$

$$R_{it} = \gamma_0 + \gamma_1 D_{it} + \gamma_2 D^p_{it} + \delta_t + u_{it}. \tag{10}$$

This joint 2SLS system allows us to consistently identify π_1 (the spousal retirement effect) and π_2 (the own-retirement effect) within the same theoretical framework.

4.3 Instrument Validity

Instrument relevance is supported both graphically and econometrically. Figure 1 provides graphical evidence of instrument relevance. Panel A shows a sharp increase in retirement rates for men at age 60. Panel B shows a clear discontinuity for women at their occupation-specific SRA, which is 55 for cadres and professionals and 50 for workers. These patterns confirm that SRA eligibility generates substantial variation in actual retirement behavior. Table 2 presents the first-stage estimates linking

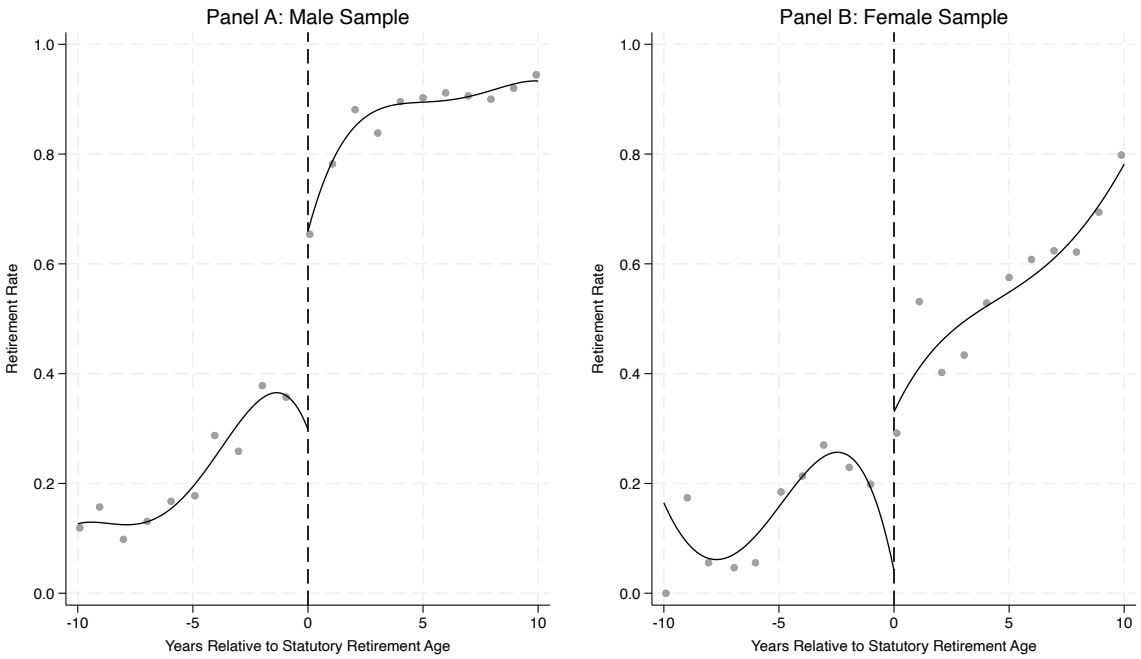

Figure 1: Discontinuity of Retirement Rates at the Statutory Retirement Age

Notes: This figure plots the retirement rate against years relative to the statutory retirement age, estimated using local polynomial regression (order 4) with a cutoff at zero. Panel A presents results for the male sample, where the statutory retirement age is 60. Panel B presents results for the female sample, where the statutory retirement age is determined by occupational classification: 55 for cadres and professionals, and 50 for workers. The sample is restricted to a $\pm$10-year window around the statutory retirement age.

SRA eligibility to actual retirement behavior. Reaching the SRA has a strong and statistically significant effect on retirement decisions. In particular, a husband's eligibility increases his own probability of retirement by 54.6 percentage points, while a wife's eligibility raises her own retirement probability by about 32.3 percentage points. We also find cross-spousal effects. A wife's eligibility increases her husband's likelihood

of retirement by 15.8 percentage points, and a husband's eligibility raises his wife's retirement probability by about 15.7 percentage points. These patterns suggest interdependence in retirement decisions within households, consistent with joint decision-making over labor supply and leisure. The Cragg–Donald Wald F-statistic of 63.07 is above the conventional threshold of 10 (Staiger and Stock, 1997), alleviating concerns about weak instruments.

Table 2: First-Stage Regression Results

	Husband Retirement (1)	Wife Retirement (2)
Husband SRA Eligibility	0.546***	0.157***
	(0.023)	(0.024)
Wife SRA Eligibility	0.158***	0.323***
	(0.022)	(0.024)
Cragg–Donald F-stat	63.07	63.07

Notes: This table reports first-stage estimates. The dependent variables are binary indicators for the husband's retirement (Column 1) and the wife's retirement (Column 2). The instrumental variables, Husband SRA Eligibility and Wife SRA Eligibility, equal one if the respective individual has reached their gender- and occupation-specific statutory retirement age. All specifications include wave fixed effects. Standard errors clustered at the individual level are reported in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

5 Empirical results

5.1 Basic Result

Table 3 reports the estimated baseline effects of own and spousal retirement on men's mental health outcomes. Men's own retirement significantly reduces their depressive symptoms and improves life satisfaction. A wife's retirement generates even larger positive spillover effects on a husband's subjective well-being. Specifically, it drives more substantial increases in his life and marital satisfaction, while also marginally reducing his depression.

Table 4 presents the corresponding baseline estimates for women. Women experience significant psychological gains following their own retirement, specifically

Table 3: Effects of Husband's and Wife's Retirement on Men's Mental Health

	Depression		Life Satisfaction		Marital Satisfaction	
	(1)	(2)	(3)	(4)	(5)	(6)
Husband's Own Retirement	-0.56***		0.23***		0.06	
	(0.22)		(0.05)		(0.05)	
Wife Retirement		-0.59*		0.40***		0.14*
		(0.32)		(0.09)		(0.08)
Observations	3362	3362	3362	3362	2124	2124
Wave Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes

Notes: This table reports the effects of own retirement and spousal retirement on men's mental health. Columns (1), (3), and (5) report the effects of own retirement, while Columns (2), (4), and (6) report the effects of wife's retirement. Higher values of life satisfaction and marital satisfaction indicate better outcomes, while higher values of depression indicate worse outcomes. All specifications include wave fixed effects. Standard errors clustered at the individual level are reported in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

through marked increases in life satisfaction and marital satisfaction. Women report significantly higher life satisfaction when their husbands retire, whereas their levels of depression and marital satisfaction remain largely unaffected by their husbands' labor-force exit.

Table 4: Effects of Wife's and Husband's Retirement on Women's Mental Health

	Depression		Life Satisfaction		Marital Satisfaction	
	(1)	(2)	(3)	(4)	(5)	(6)
Wife's Own Retirement	-0.43		0.29**		0.30**	
	(0.54)		(0.13)		(0.14)	
Husband Retirement		-0.08		0.22**		0.08
		(0.38)		(0.10)		(0.11)
Observations	2295	2295	2295	2295	1506	1506
Wave Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes

Notes: This table reports the effects of own retirement and spousal retirement on women's mental health. Columns (1), (3), and (5) report the effects of own retirement, while Columns (2), (4), and (6) report the effects of husband's retirement. Higher values of life satisfaction and marital satisfaction indicate better outcomes, while higher values of depression indicate worse outcomes. All specifications include wave fixed effects. Standard errors clustered at the individual level are reported in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

5.2 Joint Retirement Results

We estimate the joint specification described in Equation 8, which includes both partners' retirement statuses and accounts for the interdependence of household deci-

sions. This approach allows us to more accurately assess how individual well-being responds to both own and spousal labor-force exits. Tables 5 and 6 report results for men and women, respectively. In each pair of columns, the second specification (Columns 2, 4, and 6) additionally controls for the spouse's corresponding mental health outcome, allowing us to account for intra-household emotional correlation and assess whether the estimated retirement effects remain robust.

For husbands (Table 5), own retirement has no statistically significant effects on their mental health outcomes. In contrast, wives' retirement has a positive and robust effect on husbands' life satisfaction, increasing it by approximately 0.36 to 0.39 points, equivalent to roughly 0.38–0.41 standard deviations. This effect remains stable after controlling for wives' life satisfaction in Column (4), suggesting that spousal retirement plays an important role in shaping men's well-being. This finding is consistent with Szinovacz and Davey (2004), who document that spousal retirement can enhance life satisfaction through shifts in household routines and shared daily activities. To benchmark this magnitude against other major life events, involuntary job loss in China increases depressive symptoms by 0.75 to 0.91 standard deviations (Song, 2025), while major stressful life events are associated with substantially higher risks of depression (Chen et al., 2017). Unexpected health shocks also induce large and persistent mental health deteriorations for both individuals and their spouses (Wang et al., 2023). Relative to these benchmarks, the 0.38–0.41 standard deviations improvement represents a sizable effect, comparable to the spillover effects documented for health shocks. It suggests that a wife's retirement provides a meaningful buffer for her husband's psychological well-being.

For wives (Table 6), the estimates reveal a distinct pattern relative to men. Women's own retirement is associated with a significant increase in marital satisfaction, ranging from 0.34 to 0.39 points, equivalent to approximately 0.39–0.45 standard deviations. This result is consistent with Zang (2020), who document that women's retirement tends to improve relational quality within households. For context, retired high-status work unit leaders experience significantly elevated depression due to sta-

Table 5: Joint Effects of Husband's and Wife's Retirement on Men's Mental Health

	Depression		Life Satisfaction		Marital Satisfaction	
	(1)	(2)	(3)	(4)	(5)	(6)
Wife Retirement	0.35	0.41	0.39*	0.36*	0.24	0.17
	(0.78)	(0.74)	(0.21)	(0.20)	(0.16)	(0.15)
Husband's Own Retirement	-0.76	-0.66	0.01	-0.04	-0.08	-0.06
	(0.53)	(0.49)	(0.14)	(0.13)	(0.10)	(0.10)
Spouse Depression		0.29***				
		(0.02)				
Spouse Life Satisfaction				0.25***		
				(0.02)		
Spouse Marital Satisfaction						0.19***
						(0.02)
Observations	3362	3362	3362	3362	2124	2124
Wave Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes

Notes: This table reports the joint effects of own and wife's retirement on men's mental health outcomes. Columns (1)–(2) report results for depression, Columns (3)–(4) for life satisfaction, and Columns (5)–(6) for marital satisfaction. Higher values of life satisfaction and marital satisfaction indicate better outcomes, while higher values of depression indicate worse outcomes. All specifications include wave fixed effects. Standard errors clustered at the individual level are reported in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

tus loss (Zhang et al., 2025), highlighting that the 0.39–0.45 standard deviation improvement in marital satisfaction is also economically meaningful. By contrast, own retirement shows no statistically significant effects on depression or life satisfaction. We find no significant spillover from husbands' retirement, which stands in contrast to evidence from Western contexts. For instance, Szinovacz and Davey (2005) find that husbands' retirement typically enhances wives' well-being. This discrepancy indicates that the impact of spousal retirement on women's psychological outcomes likely depends on specific institutional and cultural contexts.

Across specifications in Table 5 and Table 6, we find statistically significant correlations between spouses' mental health outcomes, indicating emotional interdependence within couples. Importantly, the estimated retirement effects remain stable after including these controls, suggesting that the results are not driven by correlated spousal well-being. These estimates reveal an asymmetric response pattern by gender in the effects of retirement. For men, well-being gains are primarily associated with wives' retirement, particularly in life satisfaction. For women, gains are concentrated

Table 6: Joint Effects of Wife's and Husband's Retirement on Women's Mental Health

	Depression		Life Satisfaction		Marital Satisfaction	
	(1)	(2)	(3)	(4)	(5)	(6)
Husband Retirement	0.24	0.41	0.16	0.14	-0.11	-0.11
	(0.57)	(0.55)	(0.15)	(0.14)	(0.16)	(0.16)
Wife's Own Retirement	-0.67	-0.64	0.13	0.05	0.39*	0.34*
	(0.83)	(0.80)	(0.21)	(0.20)	(0.20)	(0.20)
Spouse Depression		0.37***				
		(0.03)				
Spouse Life Satisfaction				0.24***		
				(0.02)		
Spouse Marital Satisfaction						0.27***
						(0.04)
Observations	2295	2295	2295	2295	1506	1506
Wave Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes

Notes: This table reports the joint effects of own and husband's retirement on women's mental health outcomes. Columns (1)–(2) report results for depression, Columns (3)–(4) for life satisfaction, and Columns (5)–(6) for marital satisfaction. Higher values of life satisfaction and marital satisfaction indicate better outcomes, while higher values of depression indicate worse outcomes. All specifications include wave fixed effects. Standard errors clustered at the individual level are reported in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

in marital satisfaction and are mainly associated with their own retirement.

5.3 Heterogeneous Effects by Spousal Retirement Status

The effects of spousal retirement on individual well-being may depend on an individual's own retirement status. To examine heterogeneous effects, we stratify the sample by individuals' contemporaneous retirement status using a time-varying classification. Specifically, individuals are assigned to the "retired" group if they are retired in a given survey wave, and to the "not retired" group otherwise. This stratification is essential for identifying how spousal spillovers evolve as households transition from an "asynchronous retirement stage" (where only one spouse is retired) to a "joint retirement stage" (where both have retired). It allows us to clearly describe the shifting patterns of household resource allocation across different labor-supply configurations.

Table 7 reports the heterogeneous effects of wives' retirement on husbands'mental health by husbands' own retirement status. When husbands are still employed, wives' retirement is associated with an increase in husbands' life satisfaction by 0.63 points,

while the estimated effects on depression and marital satisfaction are small and statistically insignificant. These results are consistent with prior evidence that wives' retirement can generate positive spillover effects on husbands' subjective well-being (Szinovacz and Davey, 2004; Austen et al., 2022; Zang, 2020). Among husbands who have already retired, the estimated effects of wives' retirement are larger in magnitude and statistically significant across all outcomes. Depression decreases by 2.45 points, while life satisfaction and marital satisfaction increase by 0.76 and 0.68 points, respectively. This pattern is consistent with Xiong et al. (2024), who show that the psychological benefits of spousal retirement are stronger when both partners have retired.

Table 7: The Impact of Wife's Retirement on Mental Health (by Husband's Retirement Status)

	Husband Not Retired			Husband Retired		
	Depression	Life Satisfaction	Marital Satisfaction	Depression	Life Satisfaction	Marital Satisfaction
	(1)	(2)	(3)	(4)	(5)	(6)
Wife Retirement	-0.19	0.63***	0.09	-2.45***	0.76***	0.68**
	(0.79)	(0.22)	(0.17)	(0.91)	(0.25)	(0.28)
Observations	1688	1688	1128	1674	1674	996
Wave Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes

Notes: This table shows the impact of wife's retirement on various mental health outcomes, stratified by the husband's retirement status. Columns (1)–(3) report results for husbands who are not retired, while Columns (4)–(6) report results for husbands who are retired. Higher values of life satisfaction and marital satisfaction indicate better outcomes, while higher values of depression indicate worse outcomes. All specifications include wave fixed effects. Standard errors clustered at the individual level are reported in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 8 reports the heterogeneous effects of husbands' retirement on wives' psychological outcomes, stratified by the wife's own retirement status. Among wives who remain in the labor force (Columns 1–3), a husband's retirement is associated with a significant 1.87-point increase in his wife's depression, while no significant effects are observed for life or marital satisfaction. This finding suggests that when wives continue working, their husbands' transition out of the labor force may introduce additional household strain or role conflicts, a pattern that aligns with the "retired husband syndrome" documented in certain contexts (Bertoni and Brunello, 2017; Müller and Shaikh, 2018). For wives who have already retired (Columns 4–6), a different pattern emerges. Husbands' retirement is associated with a statistically significant 0.33-point

increase in wives' life satisfaction, indicating a meaningful improvement in subjective well-being. However, unlike the results for husbands, we find no statistically significant evidence that husbands' retirement influences retired wives' depressive symptoms or marital satisfaction in this joint framework.

Table 8: The Impact of Husband's Retirement on Mental Health (by Wife's Retirement Status)

	Wife Not Retired			Wife Retired		
	Depression	Life Satisfaction	Marital Satisfaction	Depression	Life Satisfaction	Marital Satisfaction
	(1)	(2)	(3)	(4)	(5)	(6)
Husband Retirement	1.87**	0.08	0.28	-0.49	0.33**	0.00
	(0.84)	(0.20)	(0.23)	(0.48)	(0.13)	(0.14)
Observations	1302	1302	821	993	993	685
Wave Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes

Notes: This table reports the effects of husband's retirement on mental health outcomes, stratified by the wife's retirement status. Columns (1)–(3) report results for wives who are not retired, while Columns (4)–(6) report results for wives who are retired. Higher values of life satisfaction and marital satisfaction indicate better outcomes, while higher values of depression indicate worse outcomes. All specifications include wave fixed effects. Standard errors clustered at the individual level are reported in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

To address potential concerns about asymmetric sample selection across spouses, we further restrict the sample to couples in which both partners fall within the $\pm$10-year window around their respective statutory retirement ages. This restriction yields a balanced sample of 2073 couples. The results, reported in Appendix Tables A.3 and A.4, remain broadly similar in direction and magnitude.

In sum, these heterogeneous results reveal a clear gender asymmetry in how spousal retirement affects well-being. For men, the positive spillovers from a wife's retirement are consistent and expand significantly once both partners have retired. For women, however, the impact of a husband's retirement is highly contingent on their own labor-force status, showing a negative effect on mental health while they are still working but a positive effect on life satisfaction after their own retirement. These findings suggest that the psychological consequences of retirement transitions are shaped by the combined labor-supply context of the household.

5.4 Mechanism Analysis

To shed light on why spousal retirement affects psychological well-being asymmetrically, we analyze changes in household resource allocation. Building on prior work that emphasizes intra-household bargaining and the division of domestic labor as key determinants of well-being (Lundberg and Pollak, 1993; Doss, 2013; Antman, 2014), we focus on four outcomes: the income ratio between spouses, satisfaction with the division of household work, self-reported share of housework, and household expenditure on travel.

Table 9 reports the estimated effects of wives' retirement on men's household dynamics, distinguishing between husbands who remain employed (Panel A) and those who are already retired (Panel B). For husbands who are still in the labor force (Panel A), the results indicate that a wife's retirement leads to a significant 0.17-point reduction in the husband's self-reported share of housework. This shift suggests that once wives leave the labor force, they assume a larger portion of domestic responsibilities, even while their husbands remain employed. In contrast, the estimates for income ratio, housework satisfaction, and travel expenditure in Panel A are statistically insignificant, implying that a wife's retirement does not immediately alter household finances or leisure spending during this asynchronous retirement phase. Panel B reveals a more comprehensive shift in household dynamics once the household enters the joint retirement stage. In these households, a wife's retirement is associated with a significant 0.60-point increase in the husband's satisfaction with the division of household work. Interestingly, while the husband's actual housework share remains statistically unchanged in this group, the rise in subjective satisfaction suggests an improvement in domestic harmony. Additionally, log per capita travel expenditure rises substantially by 3.01. This large coefficient represents a multi-fold increase in leisure spending, signaling a major shift toward shared consumption and travel once both partners have retired. The income ratio shows no statistically significant adjustment, indicating that the well-being gains for retired men are primarily driven by enhanced domestic satisfaction and the transition to joint leisure rather than shifts in relative

financial standing.

Table 9: Effects of Wife's Retirement on Men's Household Resource Allocation

	Income Ratio	Housework Satisfaction	Share of Housework	Travel Expenditure
	(1)	(2)	(3)	(4)
Panel A. Husband Not Retired				
Wife Retirement	-0.30	0.18	-0.17***	-0.54
	(0.39)	(0.19)	(0.06)	(0.75)
Observations	1212	1128	1668	1686
Panel B. Husband Retired				
Wife Retirement	-1.06	0.60**	0.06	3.01***
	(0.73)	(0.29)	(0.06)	(0.84)
Observations	1160	997	1657	1672
Wave Fixed Effects	Yes	Yes	Yes	Yes

Notes: This table presents the effects of wife's retirement on various household outcomes for men, stratified by the husband's own retirement status. Panel A restricts the sample to households where the husband is not retired, while Panel B restricts the sample to those where the husband is retired. The dependent variables include the income ratio (spouse-to-individual income), housework satisfaction, the share of housework, and log per capita travel expenditure. All specifications include wave fixed effects. Standard errors clustered at the individual level are reported in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 10 reports the estimated effects of husbands' retirement on wives' household dynamics. For wives who remain in the labor force (Panel A), a husband's retirement is associated with a sharp 1.72-unit reduction in log per capita travel expenditure, while no significant adjustments are observed in housework division. This contraction in leisure spending, combined with a lack of relief from domestic labor, may help explain the increase in depressive symptoms previously observed among working wives. In the joint retirement stage (Panel B), the pattern shifts toward a more equitable domestic environment. When both spouses have retired, a husband's retirement leads to a significant 0.39-point increase in the wife's housework satisfaction and a 0.09-point reduction in her actual housework share. Unlike the findings for men, retired wives' well-being improvements appear to be driven by this tangible reduction in domestic burdens rather than by increased leisure consumption or shifts in relative income.

The mechanism analysis indicates that the effects of spousal retirement on individual well-being operate primarily through gender-differentiated adjustments in household resource allocation. For men, the benefits of a wife's retirement are driven by a functional reduction in domestic labor during the asynchronous stage, followed

Table 10: Effects of Husband's Retirement on Women's Household Resource Allocation

	Income Ratio	Housework Satisfaction	Share of Housework	Travel Expenditure
	(1)	(2)	(3)	(4)
Panel A. Wife Not Retired				
Husband Retirement	-1.45	0.41	0.05	-1.72***
	(1.02)	(0.27)	(0.06)	(0.53)
Observations	859	820	1282	1299
Panel B. Wife Retired				
Husband Retirement	-0.63	0.39**	-0.09***	0.43
	(0.50)	(0.19)	(0.03)	(0.50)
Observations	809	684	988	992
Wave Fixed Effects	Yes	Yes	Yes	Yes

Notes: This table presents the effects of husband's retirement on various household outcomes for women, stratified by the wife's own retirement status. Panel A restricts the sample to households where the wife is not retired, while Panel B restricts the sample to those where the wife is retired. The dependent variables include the income ratio (spouse-to-individual income), housework satisfaction, the share of housework, and log per capita travel expenditure. All specifications include wave fixed effects. Standard errors clustered at the individual level are reported in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

by a substantial surge in shared leisure consumption once both partners have retired. For women, however, the positive effects of a husband's retirement emerge only after their own retirement, primarily through a more equitable division of housework and increased satisfaction with domestic arrangements. In contrast, when wives are still employed, a husband's retirement is associated with a contraction in leisure spending, which likely explains the negative psychological spillover observed in that group. These patterns point to gender-differentiated pathways through which retirement transitions influence household welfare in later life.

6 Robustness Check

6.1 Robustness Check: Controlling for Age

A potential concern regarding our baseline specification is the omission of individual age controls. Although wave fixed effects can absorb macroeconomic time shocks, they fail to account for individual-level aging effects. Given that age is highly correlated with both retirement probability and mental health, omitting the age variable could theoretically confound the discontinuity effect at the SRA. To rule out the possibility that our estimates merely capture a smooth aging trend rather than the true

shock of spousal retirement, we conduct a robustness check by explicitly incorporating individual age as a control variable in the model.

Table 11 presents the re-estimated results for the male sample. The inclusion of age controls does not materially alter our baseline conclusions. Consistent with our main findings, a wife's retirement continues to exert a significant and positive spillover effect on the life satisfaction and marriage satisfaction of already-retired husbands. The coefficients on the age variable itself are small in magnitude, further confirming that the spousal retirement effect we identify is entirely distinct from the smooth aging process.

Table 11: The Impact of Wife's Retirement on Mental Health: Controlling for Age Effects

	Husband Not Retired			Husband Retired		
	Depression	Life Satisfaction	Marital Satisfaction	Depression	Life Satisfaction	Marital Satisfaction
	(1)	(2)	(3)	(4)	(5)	(6)
Wife Retirement	0.55	0.25	0.20	-1.10	0.87**	0.85**
	(1.17)	(0.34)	(0.26)	(1.38)	(0.37)	(0.38)
Age	-0.03	0.02*	-0.00	-0.05	-0.00	-0.01
	(0.04)	(0.01)	(0.01)	(0.03)	(0.01)	(0.01)
Observations	1688	1688	1128	1674	1674	997
Wave Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes

Notes: This table reports the effect of wife's retirement on her husband's mental health, explicitly controlling for individual age. Columns (1)–(3) restrict the sample to husbands who have not yet retired, while Columns (4)–(6) restrict the sample to husbands who have already retired. Higher values of life satisfaction and marital satisfaction indicate better outcomes, while higher values of depression indicate worse outcomes. All specifications include wave fixed effects. Standard errors clustered at the individual level are reported in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Similarly, Table 12 reports the estimates for the female sample after controlling for age. The core results mirror our baseline findings and remain highly robust: a husband's retirement significantly increases depression among wives who are not yet retired, while significantly improving the life satisfaction of already-retired wives. Controlling for age across both samples confirms that the spousal retirement spillovers are driven by the institutional discontinuity rather than omitted aging trends, further reinforcing the validity of our baseline estimates.

Table 12: The Impact of Husband's Retirement on Mental Health: Controlling for Age Effects

	Wife Not Retired			Wife Retired		
	Depression	Life Satisfaction	Marital Satisfaction	Depression	Life Satisfaction	Marital Satisfaction
	(1)	(2)	(3)	(4)	(5)	(6)
Husband Retirement	1.78*	-0.06	0.02	0.32	0.28*	-0.08
	(1.00)	(0.24)	(0.27)	(0.65)	(0.17)	(0.17)
Age	0.01	0.01	0.02*	-0.10*	0.01	0.01
	(0.04)	(0.01)	(0.01)	(0.05)	(0.01)	(0.01)
Observations	1302	1302	821	993	993	685
Wave Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes

Notes: This table reports the impact of a husband's retirement on his wife's mental health, explicitly controlling for the individual's age. Columns (1)–(3) restrict the sample to wives who have not yet retired, while Columns (4)–(6) restrict the sample to wives who have already retired. Higher values of life satisfaction and marital satisfaction indicate better outcomes, while higher values of depression indicate worse outcomes. All specifications include wave fixed effects. Standard errors clustered at the individual level are reported in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

6.2 Sensitivity to Alternative Sample Windows

To examine whether our baseline results are sensitive to the choice of the sample window around the SRA, we re-estimate the main specifications using alternative bandwidths of ± 7, ± 12, and ± 15 years. Expanding the bandwidth allows us to assess whether the estimated effects are driven by observations close to the retirement threshold or remain stable over a broader age range. Tables 13 and 14 report the corresponding results for male and female samples, respectively.

For the male sample, among retired husbands, spousal retirement has a consistently positive and statistically significant effect on life satisfaction and marital satisfaction across all bandwidth specifications, and a negative effect on depression, which becomes statistically significant in the ± 12 and ± 15 year windows. Among non-retired husbands, spousal retirement is associated with a positive effect on life satisfaction, while its effects on depression and marital satisfaction are generally not statistically significant across specifications.

For the female sample, among retired wives, spousal retirement has a positive and statistically significant effect on life satisfaction in the ± 12 and ± 15 year windows, while its effects on depression and marital satisfaction are not statistically significant across specifications. Among non-retired wives, spousal retirement is associated with

Table 13: The Impact of Wife's Retirement on Mental Health: Bandwidth Sensitivity

	Husband Not Retired			Husband Retired		
	Depression	Life Satisfaction	Marital Satisfaction	Depression	Life Satisfaction	Marital Satisfaction
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A. Bandwidth $= \pm 7$ *Years*						
Wife Retirement	0.50	0.57*	0.29	-2.19	0.88**	1.04**
	(1.19)	(0.33)	(0.27)	(1.45)	(0.38)	(0.46)
Observations	1132	1132	778	1406	1406	806
Panel B. Bandwidth $= \pm 12$ *Years*						
Wife Retirement	-0.27	0.55***	0.09	-2.39***	0.76***	0.66**
	(0.71)	(0.19)	(0.16)	(0.83)	(0.23)	(0.27)
Observations	1839	1839	1187	1747	1747	1052
Panel C. Bandwidth $= \pm 15$ *Years*						
Wife Retirement	-0.36	0.55***	0.09	-2.47***	0.74***	0.66**
	(0.69)	(0.19)	(0.16)	(0.81)	(0.22)	(0.27)
Observations	1902	1902	1188	1765	1765	1064
Wave Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes

Notes: This table reports the effect of wife's retirement on male psychological outcomes (depression, life satisfaction, and marital satisfaction) using alternative bandwidths around the statutory retirement age. Panels A–C correspond to bandwidth choices of ± 7, ± 12, and ± 15 years, respectively. Columns (1)–(3) restrict the sample to husbands who have not yet retired, while Columns (4)–(6) restrict the sample to husbands who have already retired. Higher values of life satisfaction and marital satisfaction indicate better outcomes, while higher values of depression indicate worse outcomes. All specifications include wave fixed effects. Standard errors clustered at the individual level are reported in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

a positive effect on depression in the ± 12 and ± 15 year windows, suggesting that husbands' retirement may impose psychological pressure on wives who remain in the labor force. The effects on life satisfaction and marital satisfaction are generally not statistically significant.

Overall, the main findings are robust to alternative bandwidth choices, indicating that the results are not driven by a particular window specification. This further strengthens the credibility of the empirical findings.

6.3 Assessing the Exclusion Restriction: Pre-trend Evidence

A potential concern for our identification strategy is that individuals may adjust their behavior in anticipation of retirement eligibility. To assess this, we estimate event-study specifications based on years relative to SRA eligibility. Specifically, we include indicator variables for each year from four years before to four years after eligibility (t = -4 to t = +4), using one year prior to eligibility (t = -1) as the omitted

Table 14: The Impact of Husband's Retirement on Mental Health: Bandwidth Sensitivity

	Wife Not Retired			Wife Retired		
	Depression	Life Satisfaction	Marital Satisfaction	Depression	Life Satisfaction	Marital Satisfaction
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A. Bandwidth $= \pm 7$ *Years*						
Husband Retirement	0.17	0.16	0.27	-0.55	0.31	-0.14
	(1.13)	(0.28)	(0.37)	(0.71)	(0.20)	(0.21)
Observations	1159	1159	735	751	751	505
Panel B. Bandwidth $= \pm 12$ *Years*						
Husband Retirement	1.52*	0.19	0.30	-0.40	0.33***	0.09
	(0.79)	(0.19)	(0.22)	(0.41)	(0.10)	(0.10)
Observations	1359	1359	846	1221	1221	854
Panel C. Bandwidth $= \pm 15$ *Years*						
Husband Retirement	1.69**	0.27*	0.24	-0.33	0.35***	0.09
	(0.77)	(0.17)	(0.20)	(0.36)	(0.09)	(0.09)
Observations	1429	1429	902	1572	1572	1131
Wave Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes

Notes: This table reports the effect of husband's retirement on female psychological outcomes (depression, life satisfaction, and marital satisfaction) using alternative bandwidths around the statutory retirement age. Panels A–C correspond to bandwidth choices of ± 7, ± 12, and ± 15 years, respectively. Columns (1)–(3) restrict the sample to wives who have not yet retired, while Columns (4)–(6) restrict the sample to wives who have already retired. Higher values of life satisfaction and marital satisfaction indicate better outcomes, while higher values of depression indicate worse outcomes. All specifications include wave fixed effects. Standard errors clustered at the individual level are reported in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

reference category.

All specifications include wave fixed effects. Figures A.2 and A.3 present the results for own SRA eligibility, while Figures A.4 and A.5 report the corresponding estimates for spousal eligibility. All analyses are conducted separately for the male and female samples. Across the pre-eligibility periods (t = -4 to -2), the estimated coefficients are generally close to zero, and most confidence intervals encompass zero. We do not observe a systematic monotonic pattern as eligibility approaches. While isolated deviations appear at certain time points, they do not display a consistent directional pattern across pre-periods, suggesting that such fluctuations are more likely attributable to sampling variability than to genuine anticipatory behavioral responses. Similar patterns are observed across male and female samples, as well as for both own and spousal eligibility specifications. These findings are consistent with the validity of the exclusion restriction and alleviate concerns that psychological outcomes begin to change prior to eligibility.

Conclusion

This paper examines how spousal retirement shapes psychological well-being within Chinese households using pooled data from the China Family Panel Survey (2016–2020). By exploiting Statutory Retirement Age as instruments in a two-stage least squares framework, we address the endogeneity of retirement decisions. This design allows us to isolate the exogenous impact of retirement transitions while capturing the interdependent nature of household decision-making among older adults in China.

Our findings reveal a clear gender asymmetry in responses to spousal retirement. For men, wives' retirement is consistently associated with higher life satisfaction, regardless of the husbands' own retirement status. When both partners are retired, the effects of wives' retirement extend to reductions in depressive symptoms and improvements in marital satisfaction, suggesting that men may experience broader well-being gains from spousal retirement. For women, the effects are more state-dependent. When wives remain employed, husbands' retirement is associated with higher depressive symptoms, a pattern often referred to as the "retired husband syndrome." After wives retire, however, this negative association disappears, and husbands' retirement is instead associated with higher life satisfaction. These patterns indicate that the effects of spousal retirement depend on the sequencing of retirement within couples, with stronger and broader spillovers when both partners are retired.

Mechanism analyses suggest that these well-being shifts are associated with gender-differentiated reallocations of household resources. For men, a wife's retirement is associated with a reduction in their domestic workload, followed by increased joint leisure consumption once both partners have retired. For women, the effects of a husband's retirement depend on their own labor-force status. When wives remain employed, a husband's retirement is associated with a contraction in leisure spending, while improvements in domestic conditions emerge after wives themselves retire.

Institutional features in China play an important role in shaping these asymmetries. Staggered statutory retirement ages lead to asynchronous retirement within

couples, influencing the timing of household adjustments, while gender norms in domestic labor further reinforce these patterns by increasing women's likelihood of taking on household responsibilities after retirement. Our findings suggest that retirement in China is a household-level process with interdependent consequences for both partners, highlighting the importance of accounting for family interactions and institutional context when evaluating the welfare implications of population aging.

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Declaration of Interest

The authors declare no competing interests.

References

Antman, F. M. (2014). Spousal employment and intra-household bargaining power. *Applied economics letters*, 21(8):560–563.

Atalay, K. and Barrett, G. F. (2018). The effect of retirement on mental health: Evidence from older women in australia. *Journal of Health Economics*, 57:124–139.

Atalay, K. and Zhu, R. (2018). The effect of a wife's retirement on her husband's mental health. *Applied Economics*, 50(43):4606–4616.

Austen, S., Kalsi, J. K., and Mavisakalyan, A. (2022). Retirement and the distribution of intra-household wellbeing. *The Journal of the Economics of Ageing*, 23:100404.

Battistin, E., Brugiavini, A., Rettore, E., and Weber, G. (2009). The retirement consumption puzzle: evidence from a regression discontinuity approach. *American Economic Review*, 99(5):2209–2226.

Behncke, S. (2012). Does retirement trigger ill health? *Health Economics*, 21(3):282–300.

Bertoni, M. and Brunello, G. (2017). Pappa ante portas: The effect of the husband's retirement on the wife's mental health in japan. *Social Science & Medicine*, 175:135–142.

Bertoni, M., Maggi, S., and Weber, G. (2018). Work, retirement, and muscle strength loss in old age. *Health Economics*, 27(1):115–128.

Blau, D. M. and Gilleskie, D. B. (2006). Retirement and consumption in a life cycle model. *Journal of Labor Economics*, 24(2):249–288.

Chen, F., Wakabayashi, M., and Yuda, M. (2024). The impact of retirement on health: Empirical evidence from the change in public pensionable age in japan. *The Journal of the Economics of Ageing*, 28:100513.

Chen, S., Hao, Z., and Bärnighausen, T. (2022). The effects of a wife's retirement on her husband's mental health among older adults in china. *Applied Economics Letters*, 29(20):1891–1896.

Chen, Y. et al. (2017). Patterns and correlates of major depression in chinese adults. *Psychological Medicine*, 47(14):2455–2466.

Cheng, Y., Xu, R., Zhao, Z., and Zou, X. (2025). Housing prices and spousal age gap: Evidence from the chinese housing boom. *Journal of Asian Economics*, 97:101887.

Doss, C. (2013). Intrahousehold bargaining and resource allocation in developing countries. *World Bank Research Observer*, 28(1):52–78.

Eibich, P. (2015). Understanding the effect of retirement on health: Mechanisms and heterogeneity. *Journal of Health Economics*, 43:1–12.

Feng, J., Li, Q., and Smith, J. P. (2020). Retirement effect on health status and health behaviors in urban china. *World Development*, 126:104702.

Godard, M. (2016). Gaining weight through retirement? results from the share survey. *Journal of Health Economics*, 45:27–46.

Gorry, A., Gorry, D., and Slavov, S. N. (2018). Does retirement improve health and life satisfaction? *Health Economics*, 27(12):2067–2086.

Gorry, D. and Slavov, S. N. (2021). The effect of retirement on health biomarkers. *Economics & Human Biology*, 40:100949.

Kämpfen, F. and Maurer, J. (2016). Time to burn (calories)? the impact of retirement on physical activity among mature americans. *Journal of Health Economics*, 45:91–102.

Lei, X. and Liu, H. (2018). Gender difference in the impact of retirement on cognitive abilities: Evidence from urban china. *Journal of Comparative Economics*, 46(4):1425–1446.

Li, H., Shi, X., and Wu, B. (2016). The retirement consumption puzzle revisited: Evidence from the mandatory retirement policy in china. *Journal of Comparative Economics*, 44(3):623–637.

Lundberg, S. J. and Pollak, R. A. (1993). Husbands and wives do not pool: Income and expenditure in the united kingdom. *Economica*, 60(239):361–384.

Müller, T. and Shaikh, M. (2018). Your retirement and my health behavior: Evidence on retirement externalities from a fuzzy regression discontinuity design. *Journal of Health Economics*, 57:45–59.

National Bureau of Statistics of China (2025). China statistical yearbook 2025. `https://www.stats.gov.cn/sj/ndsj/2025/indexch.htm`. Accessed April 9, 2026.

Rose, L. (2020). Retirement and health: Evidence from england. *Journal of Health Economics*, 73:102352.

Song, Q. (2025). The (non)impact of early-life job loss on later-life depressive symptoms. *Innovation in Aging*, 9(Supplement_2).

Staiger, D. and Stock, J. H. (1997). Instrumental variables regression with weak instruments. *Econometrica*, 65(3):557–586.

Szinovacz, M. E. and Davey, A. (2004). Retirement transitions and spouse disability: Effects on depressive symptoms. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 59(6):S333–S342.

Szinovacz, M. E. and Davey, A. (2005). Predictors of perceptions of involuntary retirement. *The Gerontologist*, 45(1):36–47.

United Nations, Department of Economic and Social Affairs, Population Division (2024). World population prospects 2024. `https://population.un.org/wpp/`. Accessed April 9, 2026.

Wang, Y., Jin, Z., and Yuan, Y. (2023). The consequences of health shocks on households: Evidence from china. *China Economic Review*, 79:101969.

Xiong, X., Li, L., Li, R., Yang, H., and Feng, A. (2024). The spillover effects of the spouse's retirement on depression: Evidence from chinese middle-aged and older adult couples. *The Journals of Gerontology, Series B: Psychological Sciences and Social Sciences*, 79(4):gbad191.

Yang, H.-L., Tao, Y.-W., Cheng, S.-M., Tang, X.-Q., Cao, J.-Y., and Shen, D.-F. (2023). The effect of retirement on obesity in women: Evidence from china. *SSM-Population Health*, 22:101379.

Zang, E. (2020). Spillover effects of a husband's retirement on a woman's health: Evidence from urban china. *Social Science & Medicine*, 245:112684.

Zhang, X., Yang, Y., He, L., and Wang, Z. (2025). Fading authority, rising depression: occupational identity and mental health among china's retired danwei leaders. *Frontiers in Psychiatry*, 16:1663695.

Zhang, Y., Salm, M., and van Soest, A. (2018). The effect of retirement on healthcare utilization: Evidence from china. *Journal of Health Economics*, 62:165–177.

Zhu, R. (2016). Retirement and its consequences for women's health in australia. *Social Science & Medicine*, 163:117–125.

A Appendix

Table A.1: CES-D Scale Questions and Response Options

Question	Response Options
I am in a low spirit.	1. Never (less than one day), 2. Sometimes (1–2 days), 3. Often (3–4 days), 4. Most of the time (5–7 days)
I find it difficult to do anything.	1. Never (less than one day), 2. Sometimes (1–2 days), 3. Often (3–4 days), 4. Most of the time (5–7 days)
I cannot sleep well.	1. Never (less than one day), 2. Sometimes (1–2 days), 3. Often (3–4 days), 4. Most of the time (5–7 days)
I feel happy.	1. Never (less than one day), 2. Sometimes (1–2 days), 3. Often (3–4 days), 4. Most of the time (5–7 days)
I feel lonely.	1. Never (less than one day), 2. Sometimes (1–2 days), 3. Often (3–4 days), 4. Most of the time (5–7 days)
I have a happy life.	1. Never (less than one day), 2. Sometimes (1–2 days), 3. Often (3–4 days), 4. Most of the time (5–7 days)
I feel sad.	1. Never (less than one day), 2. Sometimes (1–2 days), 3. Often (3–4 days), 4. Most of the time (5–7 days)
I feel that I cannot continue with my life.	1. Never (less than one day), 2. Sometimes (1–2 days), 3. Often (3–4 days), 4. Most of the time (5–7 days)

Notes: This table lists the eight items used to construct the CES-D depression scale in the CFPS. Responses are coded on a four-point frequency scale based on the number of days each symptom was experienced in the past week. The depression index is calculated as the sum of the eight items, yielding a score ranging from 0 to 24, where higher values indicate worse mental health.

Table A.2: Occupational Classification and Assigned Statutory Retirement Age for Women

Broad Category	Detailed Occupations (CFPS `qg303code`)	Assigned SRA
Cadres and Professionals	Heads of state organs, party organizations, enterprises, and public institutions Professional and technical personnel	55
Workers	Clerical and administrative support personnel Commercial and service workers Agricultural, forestry, animal husbandry, fishery, and water conservancy workers Production and transportation equipment operators Other unclassified occupations Individuals with missing occupation but covered by public insurance	50

Notes: This table presents the occupational classification used to assign statutory retirement ages (SRA) for female respondents. The classification is based on the CFPS occupation variable `qg303code`, which follows the Chinese Standard Classification of Occupations (CSCO). In accordance with institutional rules in China, women in cadres and professional occupations are assigned an SRA of 55, while those in worker occupations are assigned an SRA of 50. This classification is used to construct the instrument based on statutory retirement age eligibility in the empirical analysis.

Table A.3: The Impact of Wife's Retirement on Mental Health (Symmetric Couple Sample)

	Husband Not Retired			Husband Retired		
	Depression	Life Satisfaction	Marital Satisfaction	Depression	Life Satisfaction	Marital Satisfaction
	(1)	(2)	(3)	(4)	(5)	(6)
Wife Retirement	-0.12	0.51**	0.18	-2.94**	0.97**	0.92**
	(0.91)	(0.26)	(0.17)	(1.48)	(0.41)	(0.39)
Observations	1468	1468	1038	605	605	405
Wave Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes

Notes: This table shows the impact of wife's retirement on various mental health outcomes, stratified by the husband's retirement status. Columns (1)–(3) report results for husbands who are not retired, while Columns (4)–(6) report results for husbands who are retired. The sample is restricted to couples in which both spouses are within ± 10 years of their respective statutory retirement ages. Higher values of life satisfaction and marital satisfaction indicate better outcomes, while higher values of depression indicate worse outcomes. All specifications include wave fixed effects. Standard errors clustered at the individual level are reported in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table A.4: The Impact of Husband's Retirement on Mental Health (Symmetric Couple Sample)

	Wife Not Retired			Wife Retired		
	Depression	Life Satisfaction	Marital Satisfaction	Depression	Life Satisfaction	Marital Satisfaction
	(1)	(2)	(3)	(4)	(5)	(6)
Husband Retirement	1.86**	0.06	0.24	-0.42	0.35***	0.01
	(0.86)	(0.20)	(0.24)	(0.47)	(0.13)	(0.14)
Observations	1104	1104	763	969	969	680
Wave Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes

Notes: This table reports the effects of husband's retirement on mental health outcomes, stratified by the wife's retirement status. Columns (1)–(3) report results for wives who are not retired, while Columns (4)–(6) report results for wives who are retired. The sample is restricted to couples in which both spouses are within ± 10 years of their respective statutory retirement ages. Higher values of life satisfaction and marital satisfaction indicate better outcomes, while higher values of depression indicate worse outcomes. All specifications include wave fixed effects. Standard errors clustered at the individual level are reported in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

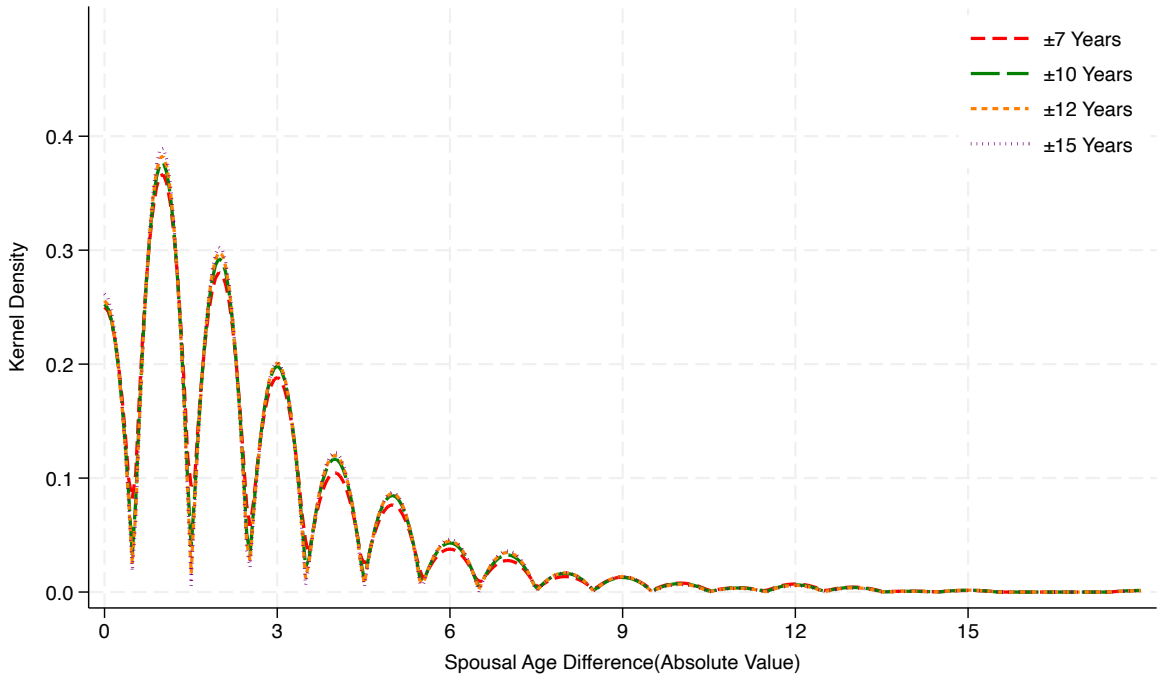

Figure A.1: Distribution of Spousal Age Differences Across Sample Windows

Notes: This figure plots the kernel density of absolute spousal age differences across four sample windows (±7, ±10, ±12, and ±15 years around the statutory retirement age). The spousal age difference is defined as the absolute value of the difference between the respondent's age and the spouse's age.

Figure A.2: Pre-trends in Outcomes Around Own Retirement Eligibility: Male Sample

Notes: This figure presents estimates for the male sample, showing the relationship between three outcome variables (depression, life satisfaction, and marital satisfaction) and years relative to statutory retirement age eligibility. Statutory retirement age is defined as 60 for men, 55 for female cadres and professionals, and 50 for female workers. Event time is measured in years relative to eligibility, and indicators are included for each year from four years before to four years after eligibility. The omitted reference category is one year prior to eligibility (t = -1). All regressions include wave fixed effects. Points represent coefficient estimates, and capped bars denote 95% confidence intervals.

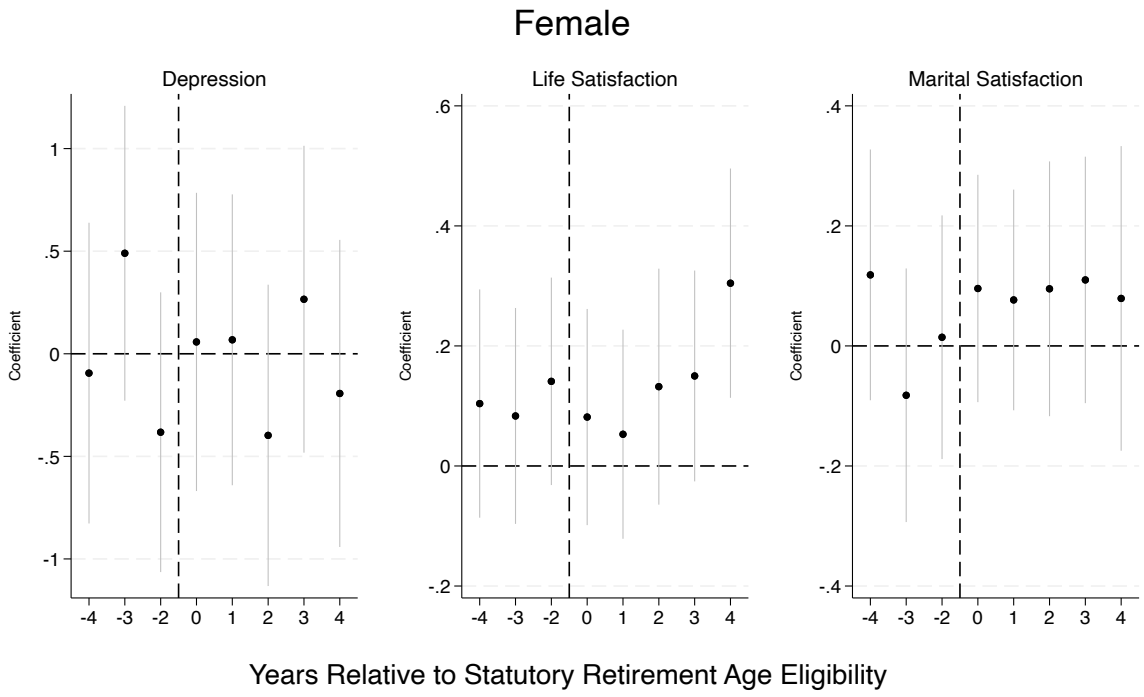

Figure A.3: Pre-trends in Outcomes Around Own Retirement Eligibility: Female Sample

Notes: This figure presents estimates for the female sample, showing the relationship between three outcome variables (depression, life satisfaction, and marital satisfaction) and years relative to statutory retirement age eligibility. Statutory retirement age is defined as 60 for men, 55 for female cadres and professionals, and 50 for female workers. Event time is measured in years relative to eligibility, and indicators are included for each year from four years before to four years after eligibility. The omitted reference category is one year prior to eligibility (t = -1). All regressions include wave fixed effects. Points represent coefficient estimates, and capped bars denote 95% confidence intervals.

Figure A.4: Pre-trends in Outcomes Around Spouse's Retirement Eligibility: Male Sample

Notes: This figure presents estimates for the male sample, showing the relationship between three outcome variables (depression, life satisfaction, and marital satisfaction) and years relative to statutory retirement age eligibility. Statutory retirement age is defined as 60 for men, 55 for female cadres and professionals, and 50 for female workers. Event time is measured in years relative to eligibility, and indicators are included for each year from four years before to four years after eligibility. The omitted reference category is one year prior to eligibility (t = -1). All regressions include wave fixed effects. Points represent coefficient estimates, and capped bars denote 95% confidence intervals.

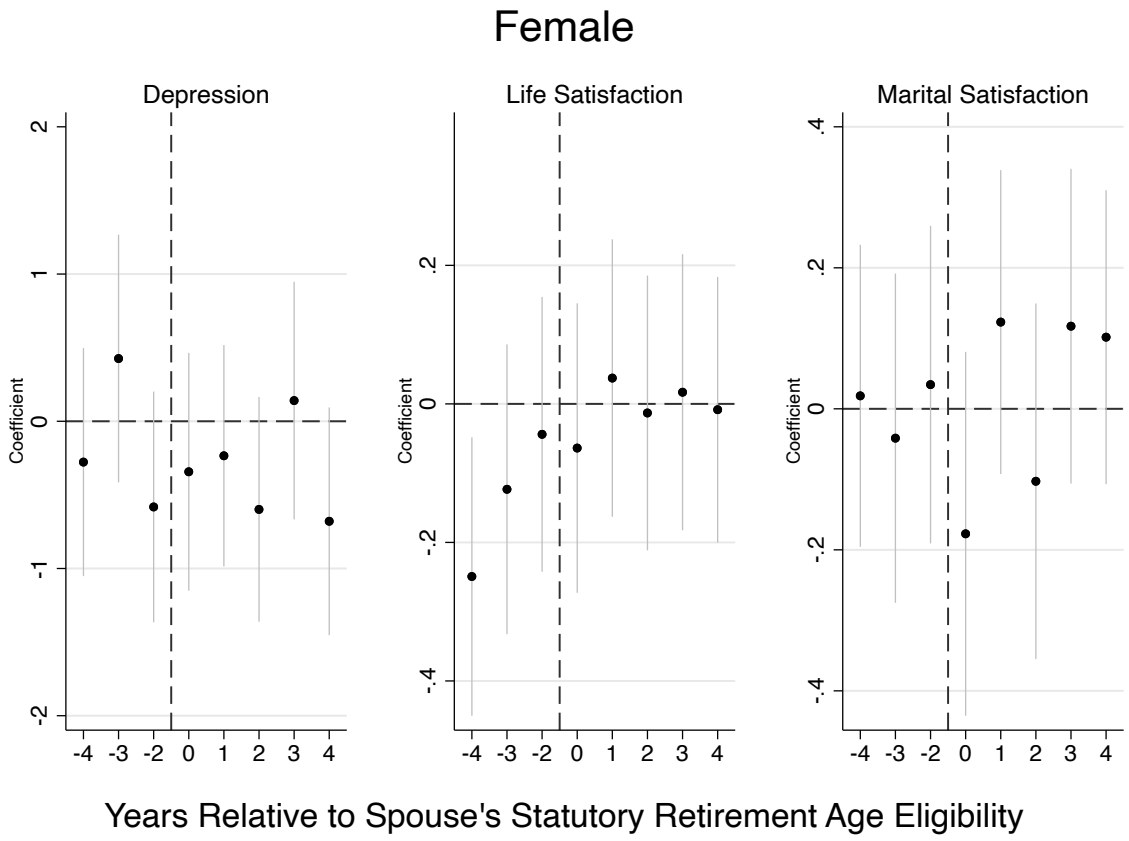

Figure A.5: Pre-trends in Outcomes Around Spouse's Retirement Eligibility: Female Sample

Notes: This figure presents estimates for the female sample, showing the relationship between three outcome variables (depression, life satisfaction, and marital satisfaction) and years relative to statutory retirement age eligibility. Statutory retirement age is defined as 60 for men, 55 for female cadres and professionals, and 50 for female workers. Event time is measured in years relative to eligibility, and indicators are included for each year from four years before to four years after eligibility. The omitted reference category is one year prior to eligibility (t = -1). All regressions include wave fixed effects. Points represent coefficient estimates, and capped bars denote 95% confidence intervals.