

Is It Over Now? (Giver's Version): Financial Giving, Economic Shocks, and Resilience to Depression in Older Europeans

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Is It Over Now? (Giver's Version): Financial Giving, Economic Shocks, and Resilience to Depression in Older Europeans

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Abstract

This study examines whether providing financial transfers influences depressive symptoms among older European adults and explores whether income or wealth shocks moderate this relationship. Using longitudinal data from the Survey of Health, Aging, and Retirement in Europe (SHARE) and a staggered dynamic Difference-in-Differences approach, this work assesses the psychological consequences of financial giving across diverse socioeconomic contexts. Results indicate that while giving initially leads to a decline in mental well-being, this effect diminishes over time, suggesting an adjustment process rather than lasting distress. The negative impact is strongest among women and those still employed, while retirees experience weaker effects. Contrary to expectations, negative income and wealth shocks do not significantly amplify depressive symptoms, implying that financial strain alone does not drive the relationship between giving and mental health. Instead, financial giving appear to be shaped by long-term social commitments, moral obligations, and ingrained norms rather than short-term economic considerations. These findings remain robust when combining propensity score matching with the staggered dynamic Difference-in-Differences estimation.

Keywords: Intergenerational Transfers, Financial Transfers, Mental Health, Wealth Shocks, Income Shocks

JEL classification: J14; I31; D64; C23

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1 INTRODUCTION

Elderly individuals are not just recipients of care but also active economic agents in their role as financial providers. Financial giving, whether in the form of one-time, regular, or emergency-based support, serve as an informal safety net within families and contribute to essential expenses such as housing, education, and healthcare (Dalton and LaFave, 2017). Financial giving is deeply shaped by intergenerational expectations, cultural norms and notions of reciprocity (Attias-Donfut et al., 2005). In this context, giving is more than an economic transaction. It strengthens autonomy, social purpose, and familial ties (Appleton et al., 2024; Cao et al., 2022; Roll and Litwin, 2010; Yuan et al., 2022).

Financial giving is increasingly taking place in the context of aging populations and rising economic pressures across Europe. Between 2015 and 2050, the old-age dependency ratio in Europe is projected to increase from 26% to 49%, placing time and financial caregiving roles on a shrinking base of working-age population (IMF, 2019). At the same time, aging individuals face increasing financial instability, driven by weaker pension systems, volatile markets, and rising healthcare costs (Borboudaki et al., 2024; Kentikelenis and Papanicolas, 2012; Legido-Quigley et al., 2016). Many individuals experience income shocks — such as reduced pensions or job loss — and wealth shocks, recently taking the form of depleted savings due to high out-of-pocket (OOP) healthcare costs (WHO, 2024). Despite these pressures, they might still continue to provide financial support to others (Litwin et al., 2008; Von Saenger et al., 2025). Unlike younger adults who have greater opportunities to recover from financial losses, older adults — especially retirees — often lack the resources or time horizon to rebuild their economic resilience (Pool, 2016). In such contexts, financial transfers may no longer represent social capital, but rather economic vulnerability and psychological distress. These dynamics complicate financial decision-making among older adults, who must face intergenerational expectations while protecting their own financial and mental well-being.

This tension raises two key questions: does financial giving affect mental health in aging populations overtime, and to what extent do income and wealth shocks shape this relationship among those who give? This study focuses on adults aged 50 and over, examining how financial giving, and the experience of income or wealth shocks, affects depressive symptoms. While prior research has underscored the emotional rewards of giving, little is known about how economic adversity interacts with financial giving and depression in older populations. This paper offers a better understanding of the mental health trade-offs of generational support, showing that financial giving can also be a source of emotional strain.

Using nearly two decades of data (2004-2021) from the Survey of Health, Aging, and Retirement in Europe (SHARE), this study makes three key contributions, addressing two gaps in the literature and one in methodology. First, it adds to the smaller pool of literature that highlights aging adults' role as active economic agents rather than passive beneficiaries. Second, the study distinguishes between income shocks and wealth shocks, recognizing that these disruptions may have distinct implications for depression. Income shocks introduce short-term pressures that may be particularly destabilizing for older individuals with fewer opportunities to recover financially (Pool, 2016). In contrast, wealth shocks threaten long-term security in older adults, as wealth is often tied to less liquid assets, and because their income tends to be fixed or limited nearing or at retirement. This nuanced approach addresses the lack of research on how income and wealth shocks affect financial givers, an area often underexplored in the context of aging populations (Appleton et al., 2024; Roll and Litwin, 2010). Third, this study uses a staggered dynamic difference-in-differences (DiD) estimator, a quasi-experimental approach that captures evolving treatment effects over time (De Chaisemartin and d'Haultfoeuille, 2020,2). Traditional econometric models often assume static, linear effects, which risk oversimplifying the dynamic effects in mental health of financial giving. By leveraging variations in treatment timing, this DiD estimator allows for heterogeneous effects across individuals and periods, providing a more accurate understanding of how depressive symptoms manifest immediately or accumulate over time. This contribution responds to the methodological gap in existing research, which typically relies on cross-sectional data and does not capture the evolving impact of financial giving (Appleton et al., 2024; Ong et al., 2018; Roll and Litwin, 2010).

The results suggest that financial giving is associated with a short-term increase in depressive symptoms, particularly among women and employed individuals. However, this effect weakens over time and disappears after adjusting for observable differences through Propensity Score Matching (PSM). This indicates that depressive symptoms of giving are likely driven by the characteristics of givers rather than the act of giving itself. Income and wealth shocks do not significantly worsen mental health among givers, including after applying a PSM. The findings highlight that financial giving in later life reflects long-term commitments and social expectations more than financial conditions.

The paper is structured as follows. Section 2 reviews the literature on aging, financial giving, and depression. Section 3 presents the research hypotheses. Section 4 describes the data. Section 5 presents the empirical strategy. Section 6 highlights results and discusses them. Section 7 details the robustness strategy and its findings. Section 8 concludes.

2 LITERATURE REVIEW

While much of the literature has emphasized the emotional and social benefits of giving, its effects of financial giving on mental health are more complex and remain insufficiently understood. Financial giving is associated with stronger social ties, lower psychological distress, and greater life satisfaction. Older adults who provide financial support to family members often experience a heightened sense of belonging, potentially reducing risks of loneliness and social isolation (Lee et al., 2014; Roll and Litwin, 2010). Neuroeconomic research highlights the psychological rewards of generosity, showing that financial giving activates reward-related neural pathways associated with stress relief, social bonding, and resilience, also known as the “helper’s high” (Dossey, 2018; Moll et al., 2006). These effects align with the Warm Glow Giving Hypothesis, which suggests that individuals derive emotional satisfaction from the act of giving itself (Andreoni, 1989,9). Thus, giving may serve not only a relational or moral function, but also contribute positively to mental health over time.

While financial giving is often linked to emotional satisfaction and social connection, its effects are not always positive. For many older adults — particularly those facing economic uncertainty — giving can become a source of stress rather than fulfillment. When the decision to give is shaped by family pressure or unevenly shared responsibilities, it can strain both finances and mental health (McGarrigle et al., 2014; Roll and Litwin, 2010). Those with lower incomes are more affected by this burden, especially when they lack savings to absorb the cost. Within families, giving obligations are often unevenly distributed based on gender, role, or perceived capacity (Ron, 2008; Zuo et al., 2014). Women, in particular, tend to take on both financial and emotional caregiving roles, seeing giving as a duty rather than a choice (Albertini, 2016; McGarrigle et al., 2014; Revenson et al., 2016; Wong et al., 2020). This gendered burden is reflected in financial giving patterns in this paper’s dataset: among interviewees who received money from their parents, mothers accounted for 10% of transfers, compared to only 4.5% from fathers, suggesting that women are more likely to serve as financial providers within families. This dynamic — compounded by lower average earnings and longer life expectancy — helps explain persistent gender disparities in depression among older adults.

These emotional and economic pressures are further shaped by the structure of social networks, embedded in relationships defined by trust, norms, and expectations. Granovetter’s concept of embeddedness and Putnam’s distinction between bonding and bridging social capital offer useful frameworks (Granovetter, 1973; Putnam, 2000). Bonding social capital — common in close family networks — pro-

motes helping each other, but can keep financial stress within the same group, passing it around instead of easing it. This is especially true in Mediterranean and Eastern European countries, where giving is often seen as a family duty (Litwin, 2009). In contrast, bridging social capital connects individuals across broader networks, offering access to more resources but weaker norms of reciprocity — making giving more discretionary and less emotionally taxing. Institutional context reinforces these dynamics. In countries with family-based or mixed long-term care (LTC) systems, where public support is limited, bonding norms dominate and financial transfers might be a substitute for formal care (Litwin, 2009). This increases emotional strain and limits the autonomy of givers. Conversely, in universal LTC systems, robust public provisions allow financial giving to remain voluntary and less burdensome.

Economic instability adds another layer of risk. While income provides short-term resources, wealth offers longer-term security—but it is also more susceptible to sudden loss. A negative wealth shock—such as housing devaluation, market downturns, or depleted savings—can have deep and lasting effects, especially for older adults with limited time to recover. These shocks may affect mental health through two pathways: directly, by generating stress and anxiety about future insecurity, and indirectly, by reducing access to healthcare and opportunities for social engagement (Pool, 2016). These effects are intensified by behavioral asymmetries: as Kahneman and others have shown, losses have a stronger negative impact on well-being than gains have positive effects (Kahneman, 1979). Recent studies support this, showing that even modest income losses can cause disproportionate declines in mental health (Thomson et al., 2022), and that major financial losses are linked to increased depressive symptoms (Tancredi et al., 2022; Wilkinson, 2016).

Despite a growing literature on the intersection of financial instability and mental health, few studies explicitly examine how financial giving—particularly under economic stress—shapes depressive symptoms.

3 RESEARCH HYPOTHESES

Building on the existing literature and the theoretical perspectives outlined in the previous section, this study investigates (1) the impact of financial giving on depressive symptoms, and (2) the impact of a negative income or wealth shock on depressive symptoms among financial givers. Three hypotheses guide this research. **Hypothesis 1 (H1)** posits that financial giving improves depressive symptoms over time. Older Europeans who begin giving money may experience an initial decline in mental health

due to short-term financial strain, but this is expected to improve over time to reflect the long-term mental health benefits such as strengthened social ties. **Hypothesis 2 (H2)** suggests that the mental health effects of financial giving are moderated by the strength of LTC systems. In countries with more generous LTC systems that rely less on family-based caregiving, financial giving is likely to be less harmful and more voluntary. In contrast, in countries with weaker systems or that rely heavily on family-driven caregiving, financial giving may be motivated by necessity, intensifying its emotional harm. **Hypothesis 3 (H3)** suggests that the combination of financial giving and a negative income or wealth shock increases depressive symptoms. When individuals give money after experiencing a financial shock, the act of giving may exacerbate stress, worsening depression outcomes.

4 DATA AND DESCRIPTIVE STATISTICS

This study uses data from the Survey of Health, Aging and Retirement in Europe (SHARE), a comprehensive biennial panel survey with data from 2004 until 2021. SHARE provides detailed information on health, socio-economic status, family dynamics, and social networks. The dataset spans 28 European countries¹ and Israel, with over 140,000 respondents across multiple waves.

4.1 Sample Selection

The sample is restricted to individuals aged 50 and over at their first observation. This aged threshold captures key life stages that are later examined in the heterogeneity analysis. The “younger old” (aged 50 to 64) often belong to the “pivot generation,” supporting both their young adult children and aging parents (Attias-Donfut et al., 2005; Brenna, 2021). The “older old” (aged 65 and over) are more likely to face retirement transitions, pension reliance, rising healthcare costs, and end-of-life planning.

To improve measurement validity, older adults reporting zero income or zero wealth² in the data are excluded. This represents a 1% reduction in the sample and a 4% reduction in the total observations. These cases are often linked to missing data or misreporting that distort the relative change in income or wealth, used to measure financial shocks. Excluding them ensures that income and wealth variations do not reflect statistical artifacts.

¹ Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, and Switzerland.

²Income and/or wealth value is zero, not missing.

The sample is restricted to aging adults who did not report giving financial transfers in 2004 and/or 2006, providing a clean pre-treatment window to strengthen causal interpretation and establish baseline trends. Excluding early givers also reduces selection bias from systematically different pre-treatment behaviors. While broader macroeconomic events likely influenced household finances at some time in the sample (e.g. the Great Recession or the European Sovereign Debt Crisis), this study focuses on individual-level shocks such as job loss or asset devaluation, rather than aggregate downturns.

The sample includes elderly individuals observed in at least two waves. After all restrictions, the final analytical sample includes 57,730 individuals and 179,579 person-wave observations across 28 countries from Waves 1 (2004) to 9 (2021) (Appendix [A.1](#)).

4.2 Dependent Variable

Mental health is measured using the EURO-D scale, a widely used 12-item instrument to assess depressive symptoms ([Albertini, 2016](#); [Litwin et al., 2008](#)). In this paper, the EURO-D scale is modeled as a continuous variable, ranging from 0 (no depressive symptoms) to 12 (severe depression), to capture the full range of symptom severity and detect subtle changes. Depression is measured at time t , as it is highly responsive to recent events, making contemporaneous measurement appropriate for capturing its interaction with financial transfers ([Ohrnberger et al., 2017](#)).

4.3 Variable of Interest

Financial transfers are defined as monetary gifts above 250€³ given to anyone outside or inside the household in the past 12 months. The threshold is consistent with prior SHARE studies ([Albertini, 2016](#); [Albertini et al., 2007](#); [Attias-Donfut et al., 2005](#); [Bonsang, 2007](#)), capturing transfers with likely financial and emotional significance. Smaller gifts are excluded, as are loans and charitable donations, which lack the discretionary and reciprocal nature of personal support⁴.

4.4 Covariates

Covariates include demographic, socioeconomic, health, and social factors. Gender, age, and education, capture key individual traits. Income and wealth quartiles and job situation (employed, retired, home-maker etc.) account for economic status. Self-assessed health, and Instrumental Activities of Daily

³This threshold is determined by the SHARE survey protocol.

⁴Again, this is determined by SHARE.

Living (IADL) scores capture physical health and functional ability. Social context is measured through living arrangement (living alone or not), urbanicity, and family network size, reflecting access to support. Two binary indicators capture informal care provision and receipt, recognizing the dual role of caregiving and dependence in shaping depression outcomes. Year and country fixed effects are included to account for temporal and national variations. Countries are grouped in four regions — North, South, East, and West — based on UN classifications⁵, enabling cross-regional comparisons in economic and cultural influences on depression.

4.5 Descriptive Statistics

After applying sample selection criteria, the sample includes 57,730 individuals, contributing total of 179,579 person-wave observations. The average respondent is 69 years old ($SD = 9.97$), with ages ranging from 50 to 103 and 16.38% of respondents aged 80 or above. The sample consists of 41% men and 59% women. The EURO-D scale averages 2.45 ($SD = 2.25$), indicating generally low depressive symptoms. However, 17.6% of the sample scores 4 or higher, the threshold for clinically significant depression, with prevalence higher among women and older individuals. Financial giving is widespread: 28.09% report at least two transfers above 250€ in the past year. Financial giving is strongly linked to wealth: 38.6% of individuals in the top wealth quartile report giving, compared to just 16.2% in the lowest quartile. Household structure is also relevant: 33.91% of respondents live alone, a known risk factor for isolation and depression. The average family size is 5.6 members. In the subsample of givers used for the income and wealth shock analysis (10,472 individuals, 26,079 observations), the average EURO-D score is 2.17. The group is 48.85% male, 64.21% retired, and 29.6% employed. Within the subsample, 48.45% experienced an income shock and 45.56% a wealth shock.

⁵See United Nations Statistics Division, Standard Country or Area Codes for Statistical Use: <https://unstats.un.org/unsd/methodology/m49/>.

	Non-Givers		Givers		Overall Sample		t-stat
	Mean	SD	Mean	SD	Mean	SD	
EURO-D (0-12)	2.50	2.30	2.28	2.07	2.45	2.25	17.36
Age Category							
50-54	0.07	0.25	0.06	0.25	0.07	0.25	3.60
55-59	0.12	0.33	0.13	0.34	0.12	0.33	-6.19
60-64	0.16	0.37	0.19	0.39	0.17	0.37	-13.52
65-69	0.18	0.38	0.20	0.40	0.18	0.38	-9.87
70-74	0.16	0.37	0.16	0.37	0.16	0.37	-0.79
75-79	0.14	0.34	0.12	0.33	0.13	0.34	7.39
80+	0.18	0.38	0.13	0.34	0.17	0.37	20.7
Education							
Low Education	0.43	0.49	0.25	0.43	0.39	0.49	65.07
Medium Education	0.38	0.48	0.40	0.49	0.38	0.49	-6.96
High Education	0.19	0.39	0.35	0.48	0.23	0.42	-67.7
Job Situation							
Retired	0.64	0.48	0.63	0.48	0.64	0.48	4.47
Employed or Self-Employed	0.19	0.4	0.28	0.45	0.21	0.41	-36.89
Unemployed	0.02	0.15	0.01	0.11	0.02	0.15	13.59
Permanently Sick or Disabled	0.03	0.17	0.02	0.13	0.03	0.17	14.03
Homemaker	0.08	0.28	0.04	0.20	0.08	0.26	28.12
Income Quartile							
Quartile 1	0.28	0.45	0.13	0.34	0.25	0.43	60.13
Quartile 2	0.27	0.44	0.19	0.39	0.25	0.43	31.09
Quartile 3	0.24	0.43	0.28	0.45	0.25	0.43	-14.92
Quartile 4	0.21	0.41	0.40	0.49	0.25	0.43	-76.28
Wealth Quartile							
Quartile 1	0.27	0.45	0.15	0.36	0.25	0.43	48.78
Quartile 2	0.27	0.44	0.20	0.40	0.25	0.43	27.98
Quartile 3	0.25	0.43	0.26	0.44	0.25	0.43	-1.91
Quartile 4	0.21	0.41	0.39	0.49	0.25	0.43	-75.22
Instrumental Activities of Daily Living (IADL) (0-9)	0.44	1.22	0.25	0.85	0.40	1.15	29.16
Self-Reported Health							
Poor Health	0.10	0.30	0.06	0.24	0.09	0.29	23.49
Fair Health	0.30	0.46	0.25	0.43	0.29	0.45	18.99
Good Health	0.38	0.48	0.38	0.49	0.38	0.48	-2.65
Very Good Health	0.16	0.37	0.21	0.41	0.17	0.38	-23.67
Excellent Health	0.07	0.25	0.09	0.29	0.07	0.26	-19.85
Family Social Network (0-12)	5.55	2.66	5.74	2.45	5.59	2.62	-12.85
Region							
North	0.21	0.41	0.24	0.43	0.22	0.41	-12.61
South	0.27	0.45	0.19	0.40	0.26	0.44	32.19
East	0.12	0.32	0.10	0.29	0.11	0.32	13.25
West	0.39	0.49	0.47	0.50	0.41	0.49	-26.44
Gender	0.61	0.49	0.53	0.50	0.59	0.49	27.01
Urbanicity	0.25	0.44	0.28	0.45	0.26	0.44	-10.91
Observations	139,710		39,869		179,579		

Source: SHARE, Waves 1 through 9.

Field: 57,730 individuals aged 50 and over.

Reading Guide: The table reports means and standard deviations (SD) by group. For binary variables, the mean indicates the proportion in that category (e.g., 43% of non-givers have low education, compared to 25% of givers). T-statistics test for significant differences in means; values above 1.96 (in absolute terms) suggest a significant difference at the 5% level. For example, the EURO-D score is significantly lower for givers (2.28) than non-givers (2.50), with a t-stat of 17.36.

5 EMPIRICAL STRATEGY

This study applies a staggered dynamic Difference-in-Differences (DiD) estimator developed by de Chaisemartin and d'Haultfoeuille, which accounts for treatment that begins at different times across individuals and estimates time-varying (i.e. dynamic) effects, overcoming limitations of standard two-way fixed effects (TWFE) models (De Chaisemartin and d'Haultfoeuille, 2020). While often used for evaluating public policy interventions, this method is increasingly applied in health economics to study endogenous shocks such as disability onset or health deterioration (Bergeot et al., 2024; Bondoux, 2024).

The treatment, financial giving, is modeled as a binary, time-varying event. Individuals are considered treated only in years when they report financial giving. The estimator compares changes in depressive symptoms for individuals who start giving with those who have not yet started but are expected to begin around the same time. This ensures comparisons within cohorts with similar treatment timing expectations, allowing for group-specific pre-trends and dynamic treatment effects.

Identification relies on the parallel trends assumption. For this, placebo tests are conducted using leads of treatment. These coefficients should be close to zero if the identifying assumptions hold, further supported by the clean pre-treatment window.

The main estimating equation is:

$$Y_{i,c,t} = \sum_{\ell \neq -1} \beta_{\ell} \cdot \text{EventTime}_{i,c,t}^{\ell} + X'_{i,c,t} \theta + \gamma_i + \lambda_t + \phi_c + \varepsilon_{i,c,t}$$

Where β_{ℓ} represents the treatment effect at time ℓ , $X_{i,c,t}$ includes time-varying covariates and fixed effects (γ_i , ϕ_c and λ_t) control for individual-, region-, and year-specific heterogeneity. Following De Chaisemartin and d'Haultfoeuille (2023), treatment effect at event time ℓ is computed as:

$$\text{DID}_{g,\ell} = Y_{g,F_g+\ell} - Y_{g,F_g-1} - \frac{1}{N_{g,\ell}^F} \sum_{g': F_{g'} > F_g + \ell} (Y_{g',F_g+\ell} - Y_{g',F_g-1})$$

The average effect across all groups is:

$$\text{DID}_{\ell} = \frac{1}{N_{\ell}} \sum_g \text{DID}_{g,\ell}$$

The first part of the analysis evaluates the average effect of financial giving on depressive symptoms in the general population aged 50 and over. The second part looks at givers only. Restricting to givers allows for a better understanding of how economic adversity affects depression of those who are participating in financial transfers. Only givers deal with the emotional and financial hardships involved in helping others while managing their own well-being. This approach avoids confounding due to potential differences between givers and non-givers, ensuring a cleaner interpretation of how economic adversity affects the mental health costs of financial giving.

Negative Income Shock Analysis

Negative income shocks primarily affect short-term liquidity, hindering a person's ability to meet immediate needs. I compare outcomes in depression among givers who have experienced an income shock with those who have not. A binary variable is built to indicate the presence or absence of a shock, which is then used as the treatment in a difference-in-differences framework parallel to the baseline model. The control group consists of givers observed before experiencing an income shock, along with individuals who give but never experience a shock. Income⁶ is defined as total net household income, including public and occupational pensions (old age, disability, and sickness), social assistance, insurance payments, private annuities, alimony, and additional monetary inflows such as earnings, rental income, dividends, and interest. Income shocks are measured as the relative change in net household income between two consecutive waves (Hawkey et al., 2020):

$$\Delta \text{Income}_{i,c,t} = \frac{\text{Income}_{i,c,t} - \text{Income}_{i,c,t-1}}{\text{Income}_{i,c,t-1}} \quad (1)$$

A negative $\Delta \text{Income}_{i,c,t}$ represents an income decline.

Negative Wealth Shock Analysis

Negative wealth shocks affect long-term security and are often linked to asset devaluation (Pool, 2016). Similarly to the income shock analysis, I compare outcomes in depression among givers who have not, using a binary variable as treatment to indicate the presence or absence of a shock. The control group consists of givers observed before experiencing a wealth shock, along with individuals who give but never experience a shock. Wealth⁷ is defined as total household net worth, including financial

⁶This definition aligns with that used in the U.S. Health and Retirement Study (HRS); see (Hawkey et al., 2020) and the SHARE Release Guide for more details: https://share-eric.eu/fileadmin/user_upload/Release_Guides/SHARE_release_guide_9-0-0.pdf.

⁷See previous footnote for the definition of wealth in SHARE.

assets (bank accounts, stocks, bonds, mutual funds, and long-term savings) and real assets (value of the main residence, additional property, business equity, and vehicles), minus liabilities. Wealth shocks are measured using the following relative change formula (Hawkley et al., 2020):

$$\Delta\text{Wealth}_{i,c,t} = \frac{\text{Wealth}_{i,c,t} - \text{Wealth}_{i,c,t-1}}{\text{Wealth}_{i,c,t-1}} \quad (2)$$

A negative $\Delta\text{Wealth}_{i,c,t}$ indicates a decline in net wealth.

Heterogeneity Analysis Strategy

The mental health impacts of financial giving may vary across socio-economic and socio-demographic groups. I examine whether financial giving, as well as income and wealth shocks in givers, vary by age group, gender, employment status, and long-term care (LTC) regime types. Countries are grouped into four LTC regime types, following classifications proposed in the literature (Damiani et al., 2011; Kraus et al., 2010; Nies et al., 2013). While no single typology is universally accepted, this framework reflects the most widely adopted grouping, based on the organization of formal and informal care (Appendix A.2). Universal Public regimes (e.g., Sweden, Denmark, Netherlands) are characterized by strong formal care systems with low reliance on family caregiving. Insurance-Based regimes (e.g., Germany, France, Austria) combine formal care with private or family contributions. Family-Based regimes (e.g., Italy, Spain, Greece) rely strongly on informal caregiving. Mixed or Transitional regimes (e.g., Poland, Romania, Hungary) are defined by weaker formal infrastructure and a stronger reliance informal care.

6 RESULTS

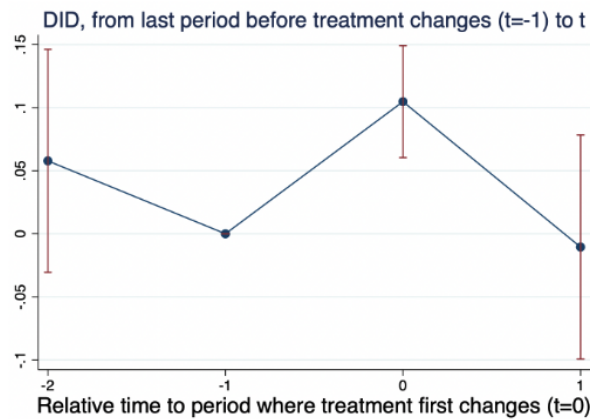
The following sections present the findings from the staggered dynamic DiD analysis.

6.1 Baseline

The results support the parallel trends assumption (see Figure 1). Following the onset of financial giving, depressive symptoms show a statistically significant increase, indicating a short-term psychological cost. The effect is statistically insignificant in the following period. On average, giving is associated with a small but statistically significant rise in depressive symptoms. This can be interpreted as evidence that giving is psychologically burdensome. This result challenges the narrative that financial

giving is beneficial for mental health, invalidating H1. It supports research that finds that financial giving, when experienced as obligatory, unevenly distributed, or economically precarious, can undermine mental health (McGarrigle et al., 2014; Roll and Litwin, 2010; Ron, 2008; Zuo et al., 2014).

Figure 1: Effect of Financial Giving on Depression: Staggered Dynamic DiD Estimates



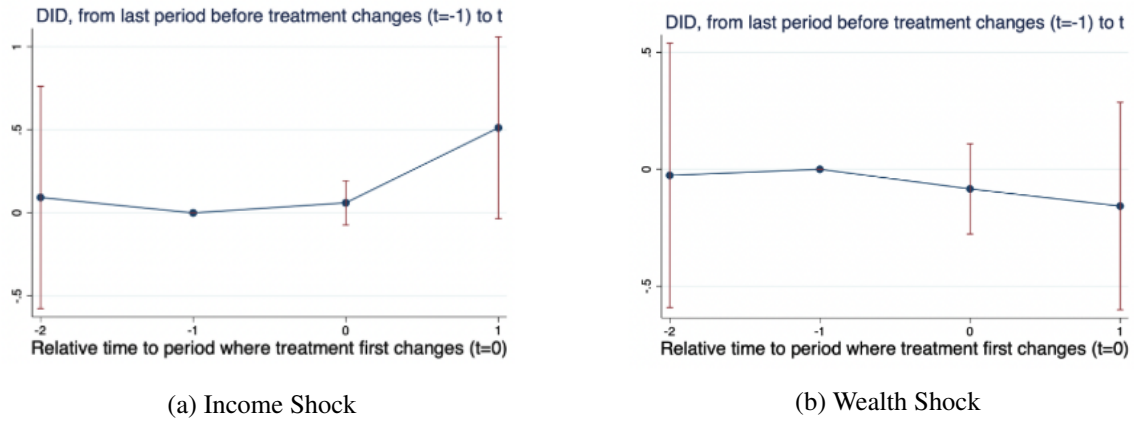
Notes: The figure plots the average effect of financial giving on depressive symptoms among older adults. The x-axis represents time relative to the first observed instance of giving ($t = 0$), with values before zero serving as placebo periods. The y-axis shows the estimated effect relative to the baseline ($t = -1$). Error bars indicate 95% confidence intervals. Values after $t = 0$ reflect dynamic treatment effects.

6.2 Income and Wealth Shocks

This section examines whether a negative income or wealth shock affects depressive symptoms among financial givers. Placebo estimates of both types of shocks validate the parallel trends assumption (see Figure 2). In the income shock subgroup, depressive symptoms rose slightly post-treatment, but all effects are statistically insignificant (see Figure 2a). Similarly, among those experiencing a wealth shock, no significant depression effects are observed (see Figure 2b). These results do not support H3, as they suggest that the mental health consequences of giving are not driven by short-term economic constraints, challenging predictions from Loss Aversion Theory (Kahneman, 1979). Older adults may engage in financial giving not as a function of disposable income or wealth, but as a way of modeling prosocial behavior and fulfilling social norms and obligations, supporting the Demonstration Effect Hypothesis (Cox and Stark, 1994, 2005). The decision to give is not only driven by economic capacity but also by a desire for older adults to affirm their role as a provider and moral exemplar within the family realm. These results can also be linked to the Socioemotional Selectivity Theory (Carstensen, 1992), which posits that as individuals age, they dedicate more time towards emotionally meaningful relationships. For older adults, financial giving may function as a way to expression affection and relationship main-

tenance, to help preserve bonds and find purpose in later life. The fact that this behavior remains stable even under economic adversity suggests that financial giving may serve a deeper psychological function that outweighs material concerns.

Figure 2: Effect of Financial Giving on Depression After Economic Shocks: Staggered Dynamic DiD Estimates



Notes: The figures plot the average effect of income shocks and wealth shocks on depressive symptoms among older givers. The x-axis represents time relative to the first observed instance of giving ($t = 0$), with values before zero serving as placebo periods. The y-axis shows the estimated effect relative to the baseline ($t = -1$). Error bars indicate 95% confidence intervals. Post- $t = 0$ values reflect dynamic treatment effects.

6.3 Heterogeneity Analyses

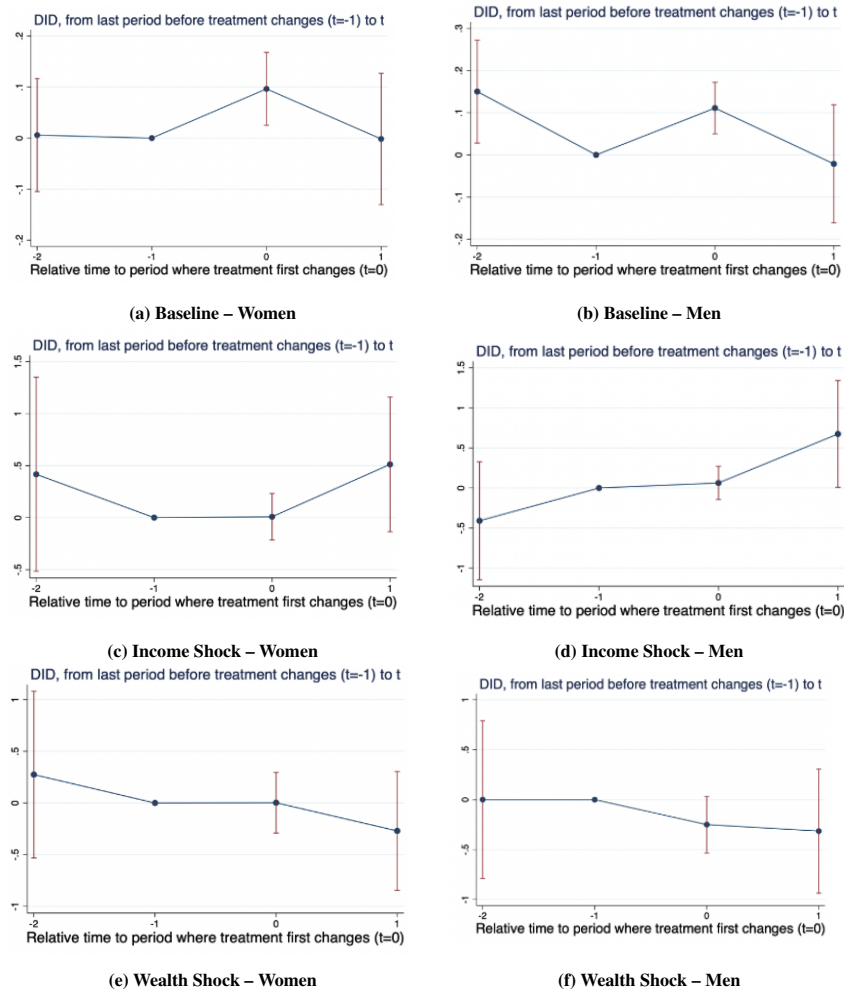
I explore heterogeneity in the effects across gender, employment status, age category, and LTC regime.

Gender

When splitting the sample into women and men, Figure 3 shows that placebo estimates hold in baseline results for women, validating the parallel trends. Giving is associated with a short-lived increase in depressive symptoms in women, suggesting temporary emotional strain (see Figure 3a). The results for women are in line with the hypothesis of role-based emotional strain, with women facing a disproportionate caregiving burden (Brenna, 2021; McGarrigle et al., 2014; Steiner and Fletcher, 2017). For men, evidence of pre-treatment imbalance complicates interpretation (see Figure 3b). Still, depressive symptoms increase immediately after giving and later decline, though a moderate average effect remains. Financial or caregiving responsibilities are traditionally associated with women, challenging conventional masculine roles, potentially causing emotional dissonance and distress in men (Zygouri et al., 2021). This may exacerbate emotional responses. In the case of income and wealth shocks, no consistent or significant patterns emerged for either group (see Figures 3c through 3f). Among both women

and men, the depressive impact of giving after an income or a wealth shock is minimal and statistically insignificant. This may seem counterintuitive given that women in the subsample are overrepresented in lower income and wealth quartiles. Only 36.46% of women fall in the top income quartile (compared to 54.47% of men) and just 38.44% in the top wealth quartile (versus 51.37% of men). Conversely, only 6.4% of men fall in the lowest income quartile (compared to 13.22% of women) and 9.38% in the lowest wealth quartile (versus 15.97% of women). There are two potential explanations for these results. Firstly, those who give under economic adversity may represent a more resilient subgroup with greater coping resources. Secondly, women may normalize strain under-report distress since they are more accustomed to caregiving expectations.

Figure 3: Effect of Financial Giving on Depression by Gender: Staggered Dynamic DiD Estimates

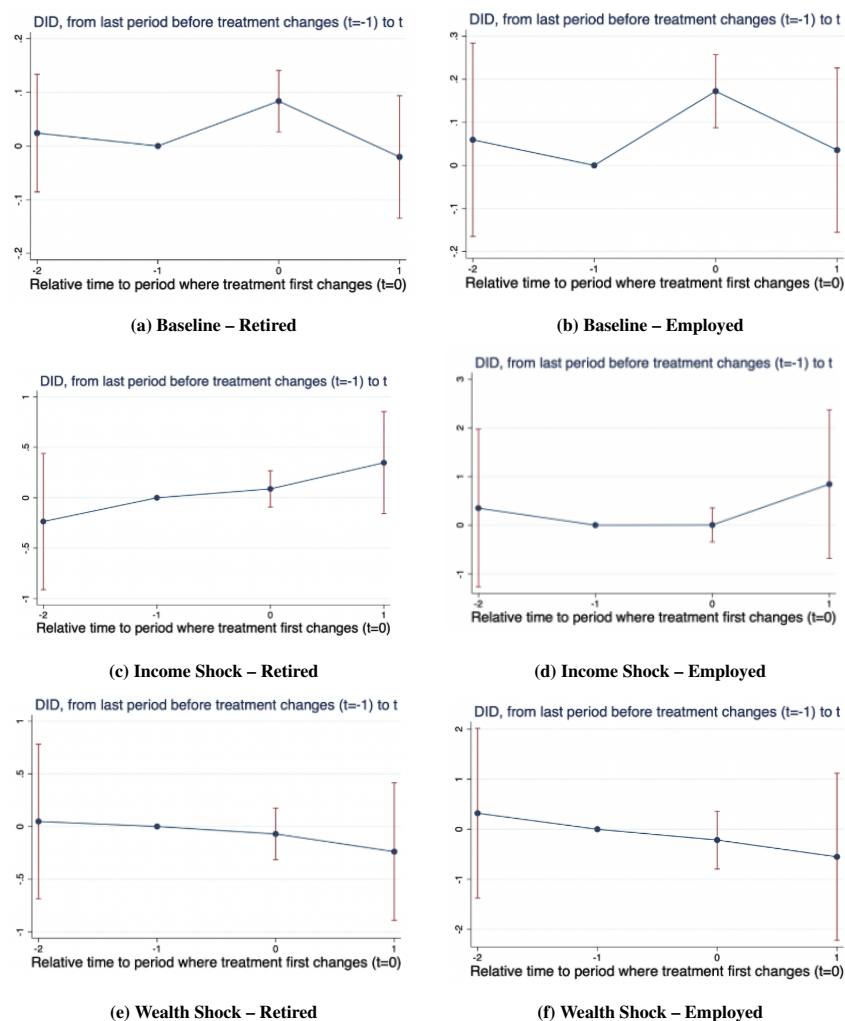


Notes: Figures show the estimated effect of financial giving (panels a and b) and income and wealth shocks (panels c through f) on depressive symptoms by gender. The x-axis indicates time relative to the first observed giving episode ($t = 0$), while $t < 0$ periods serve as placebo baselines. The y-axis displays effect sizes relative to the pre-treatment period ($t = -1$). Error bars represent 95% confidence intervals.

Employment Status

A deeper dive is made for retired and employed individuals. In both groups, financial giving is associated with a statistically significant increase in depressive symptoms, the magnitude of the effect appears somewhat larger among employed individuals (see Figure 4a and 4b), though the effect fades and becomes non-significant in the following period. In the context of income and wealth shocks, givers, retired or employed, do not experience significant changes in depressive symptoms (see Figures 4c to 4f). Like women, employed individuals often have caregiving roles. As part of the “pivot generation,” they support both aging parents and financially dependent adult children (Brenna, 2021). In this context, giving may reflect duty more than the emotional rewards of voluntary generosity.

Figure 4: Effect of Financial Giving on Depression by Employment Status: Staggered Dynamic DiD Estimates

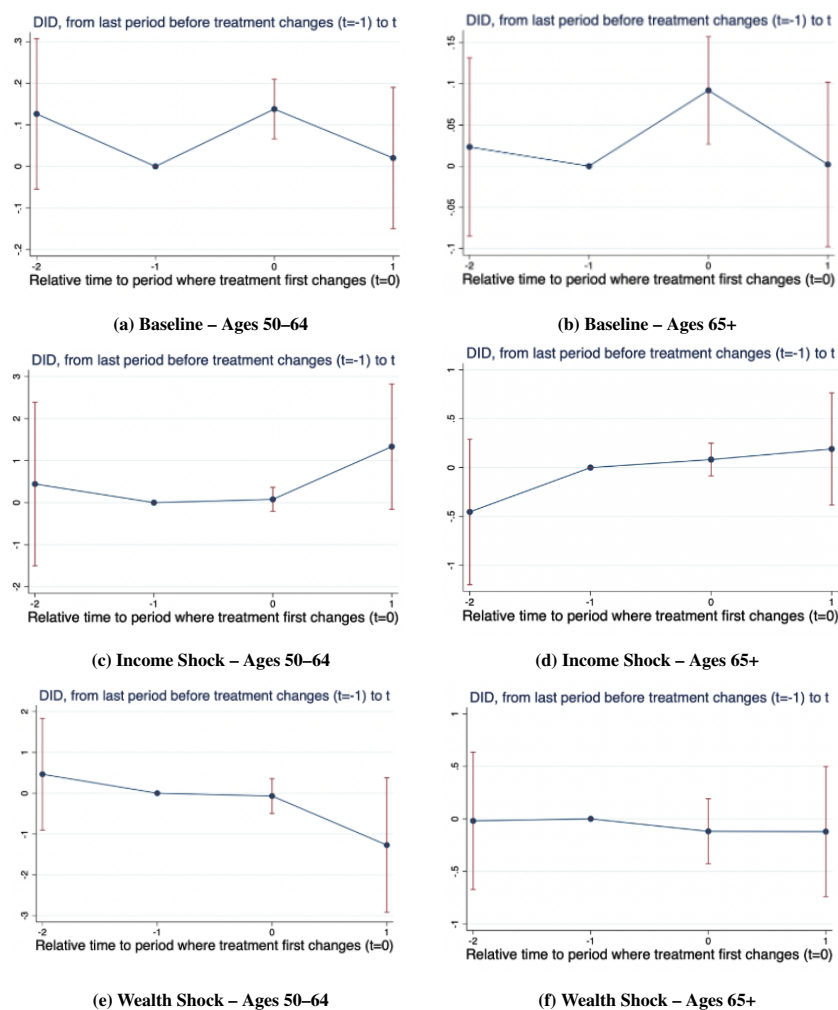


Notes: Figures show the estimated effect of financial giving (panels a and b) and income and wealth shocks (panels c through f) on depressive symptoms by employment status. The x-axis shows time relative to the first giving event ($t = 0$), with earlier periods serving as placebo checks. The y-axis shows treatment effects relative to $t = -1$. 95% confidence intervals are plotted.

Age Category

The sample is divided into two age groups: 50–64 and 65 and over (see Section 4.1 for justification). In both groups, financial giving is associated with a statistically significant short-term increase in depressive symptoms, which fades in the following period (see Figures 5a and 5b). Under income and wealth shocks, however, givers in both age categories exhibit no significant change in depressive symptoms (see Figures 5c to 5f). These results echo patterns found in the baseline and employment subgroup analyses, suggesting similar interpretative mechanisms (Attias-Donfut et al., 2005; Brenna, 2021). The absence of significant effects under financial strain may signal resilience, or reflect Socioemotional Selectivity Theory: older adults may be giving to emotionally close recipients, buffering potential distress (Carstensen, 1992).

Figure 5: Effect of Financial Giving on Depression by Age Group: Staggered Dynamic DiD Estimates

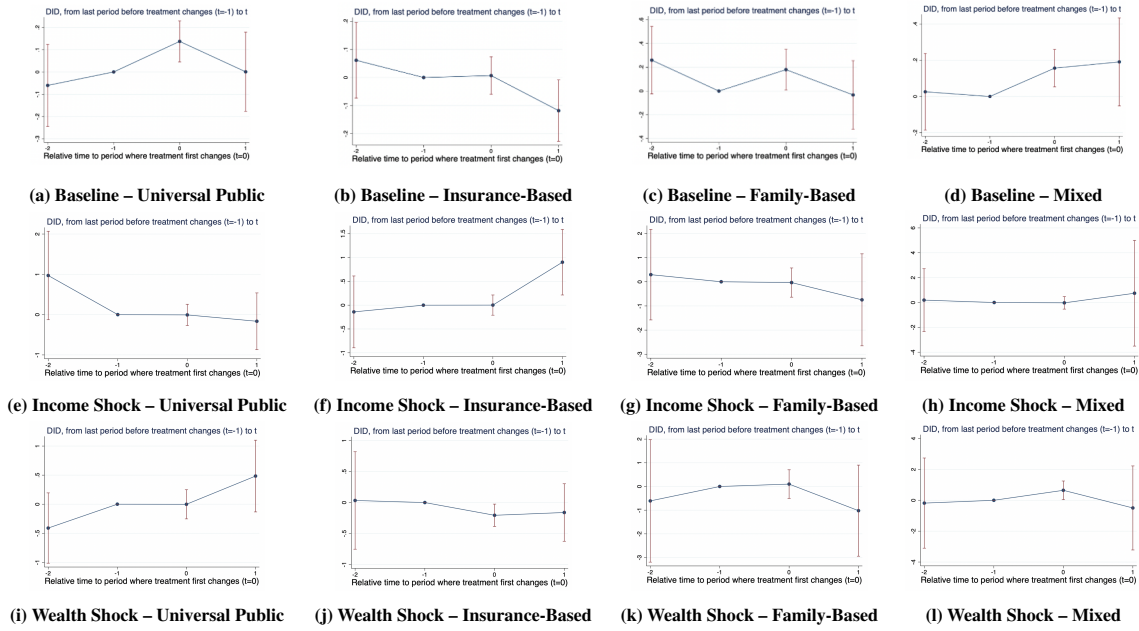


Notes: Dynamic effects of financial giving and income/wealth shocks on depressive symptoms by age group. The x-axis shows time relative to the giving event ($t = 0$); $t < 0$ are placebo periods. The y-axis plots effects relative to $t = -1$. Error bars: 95% confidence intervals.

LTC Regime

LTC regime types are detailed in the empirical strategy section of this paper (see Section 5 and Appendix A.2). Across LTC regimes, financial giving is associated with short-term increases in depressive symptoms, though the persistence and significance of these effects vary (see Figure 6). In Universal Public systems, the short-term effect at $t = 0$ is statistically significant but quickly fades, while the average treatment effect across post-treatment periods ($t \geq 0$) remains statistically significant. In Family-Based systems, financial giving is followed by a larger statistically non-significant. In Mixed systems, both short-term and average effects are significant. In Insurance-Based systems, the effects are not statistically significant. When income or wealth shocks are considered, patterns are generally muted: most regimes show statistically insignificant effects throughout, with the exception of Mixed systems, where giving under a wealth shock is associated with a sustained increase in depressive symptoms. Interestingly, in Insurance-Based systems, under an income shock, depressive symptoms increase in the long-term rather than the short term. The findings partially confirm H2. No single LTC regime fully predicts emotional costs, reflecting the deeply person, context-dependent nature of financial giving in later life. In Universal Public systems, generous public pensions may reduce the need to save, however, high levels of wealth inequality and employment-dependent safety nets can leave financial givers with limited resources (Skopek et al., 2014). The income and wealth shock results might indicate that the subsample includes individuals with comparable giving capacity, making the emotional impact of financial stress less pronounced. In Insurance-Based systems, the lack of effects might also reflect generous public pensions systems. The delayed onset of depressive symptoms under an income shock suggests that financial stress might build up gradually — especially when benefits are targeted at those receiving care rather than the givers (Calvó-Perxas et al., 2018; Skopek et al., 2014). In Mixed systems, the results likely reflect economic vulnerability. The subsample shows strong over-representation in the lowest income quartile (70%) and in the first and second wealth quartiles (32% and 41% respectively). These countries often have weaker institutions and higher reliance on informal caregiving. Financial giving may therefore be more a matter of necessity rather than choice. Historical legacies (i.e. post-Soviet transitions) may have further distorted wealth accumulation. No single LTC regime predicts emotional outcomes.

Figure 6: Effect of Financial Giving on Depression by LTC Regime: Staggered Dynamic DiD Estimates



Notes: Figures show the estimated effect of financial giving on depressive symptoms across LTC regimes. The x-axis shows time relative to the first giving event ($t = 0$). Estimates at $t < 0$ serve as placebo tests. The y-axis represents estimated changes in depressive symptoms. Error bars show 95% confidence intervals.

7 ROBUSTNESS

Robustness is assessed using a combination of Propensity Score Matching (PSM) coupled with a staggered, dynamic DiD analysis. While PSM paired with traditional DiD is widely used in health economics (Bondoux, 2024; Marsaudon and Rochaix, 2010), the integration of PSM with staggered and dynamic DiD has only recently emerged (Moran et al., 2024). To control for observable characteristics predicting the probability of financial giving, I employ PSM using nearest-neighbor matching with replacement, following (Moran et al., 2024; Stuart et al., 2014). The propensity score is estimated using a fully saturated model that includes all socio-demographic, economic and health-related covariates. While more parsimonious specifications may be more efficient, a comprehensive model better captures the multidimensional determinants of financial giving and depression. Restricting the analysis to matched observations enhances internal validity by ensuring that treatment effects are estimated among individuals with comparable observed profiles.

PSM is applied before DiD estimation. Matching was implemented using one-to-one nearest neighbor matching with a caliper of 0.02, excluding observations outside the region of common support, as recommended in the applied health economics and public health literature (Austin, 2011; Garrido et al.,

2014; Moran et al., 2024; Stuart et al., 2014). Appendix B.1 displays estimates of the propensity scores for treated and control individuals before and after matching. Prior to matching, the distributions diverge moderately, reflecting imbalances in covariate profiles. After matching, the overlap improves substantially, indicating that the matched treated and control groups are more comparable. Appendix B.2 presents the standardized percentage bias across all covariates. Pre-matching imbalances are notable. Post-matching, nearly all covariates exhibit standardized differences, with a mean bias reduction from 4.6% to 0.8%, suggesting a good covariate balance (Appendix B.3 and B.4). These diagnostics collectively confirm that the matching procedure was successful in reducing observable differences between treated and control groups, thereby reinforcing the credibility of the subsequent causal analysis.

The PSM-adjusted staggered dynamic DiD estimates shows no statistically significant effect of financial giving on depressive symptoms (Appendix B.5). This contrasts with pre-PSM estimates, which indicated a significant association. The loss of significance after matching suggests that the baseline results were likely influenced by selection bias. For givers who experienced income or wealth shocks, the post-matching DiD estimates also show no statistically significant effects on depressive symptoms. The placebo tests again confirm parallel trends. Robustness is further confirmed using World Bank Consumer Price Index (CPI) adjustments, with both income and wealth shock remaining statistically insignificant – whether or not PSM is applied.

The disappearance of the treatment effect after PSM suggests consistency with the literature cited earlier. Financial giving does not occur randomly across individuals but is embedded within social roles and relational structures that shape both the likelihood of giving and mental health (Attias-Donfut et al., 2005; Litwin et al., 2008). Individuals who provide financial support are more likely to occupy positions characterized by family obligations, caregiving responsibilities, and gendered expectations of support, which are themselves associated with higher levels of psychological strain (McGarrigle et al., 2014; Revenson et al., 2016; Wong et al., 2020). Once individuals with comparable socioeconomic and demographic characteristics are matched through PSM, the estimated effect disappears indicating that the baseline association between financial giving and depressive symptoms was driven by selection into giving rather than by the act of giving itself.

8 CONCLUSION

This study finds that giving is neither improves nor worsens depressive symptoms. Baseline estimates indicate a small but statistically significant rise in depressive symptoms in financial givers, particularly among women and employed individuals. However, once individuals are matched on observables, these effects disappear. The study also finds that financial giving does not worsen depression among financial givers who face negative or wealth shocks, contradicting behavioral expectations of increased distress under economic pressure. Financial giving in later life appears to be less linked to disposable resources and emotional gratification. It is more a reflection of internalized social obligations and norms, suggesting a pattern shaped more by duty and context rather than by pure or impure altruism in the Andreoni sense.

The depressive costs of financial giving are likely to worsen in the coming decades in light of structural trends across Europe. OOP expenses are rising, with a recent WHO report showing that nearly one in five European households has experienced catastrophic health spending ([WHO, 2024](#)). As populations age and chronic illnesses become more prevalent, families, and women in particular, will be called upon to bridge the widening gap between needs and provision. Financial giving will be expected to become less of a discretionary act and more a coping mechanism for systemic failure. Furthermore, generational shifts are likely to reshape both the frequency and meaning of financial giving. This study's sample comprises mainly of Boomers and older Gen-Xers — generations raised in contexts of stronger family cohesion with clearer generational roles and higher fertility. Younger Gen-Xers, Millennials and Gen-Zers are aging into different realities: reduced homeownership, lower fertility, rising individualism and historical high levels of mental health distress. They may be less able to or not wish to engage in intergenerational financial support. In the same vein, women are redefining their role in society, with eroding gendered dynamics that underpin much of today's financial giving. They might become less morally obligatory, less common, and less available to those in need.

This study has several limitations. First, the analysis lacks data on the amount of money given and the motivations for giving. Such variables are only available in the first two waves of SHARE, hindering more granularity to support the binary indicator used here, that cannot fully capture the motivations or substantial or symbolic nature of financial giving. Secondly, endogeneity remains a limitation. The staggered dynamic DiD does not fully address potential reverse causality or omitted variable bias. However, placebo tests support the parallel trends assumption, and the use of PSM improves covariate balance

between givers and non-givers, reducing concerns about selection on observables and pre-treatment differences. Instrumental variable methods could further address the issue, but valid instruments are difficult to identify in this context, as research cautions ([Appleton et al., 2024](#)). Regarding omitted variable bias, while the model controls for a broad set of observable socioeconomic and health characteristics, it cannot fully account for unobserved emotional or motivational drivers of financial giving. To assess the potential influence of unobserved confounding, future analyses could apply Oster’s method, which estimates the degree of selection on unobservables needed to explain away observed effects ([Oster, 2019](#)). Third, while the study accounts for individual-level income and wealth-shocks, it does not explicitly control for broader macroeconomic conditions, particularly when the pre-treatment window precedes major macroeconomic disruptions such as the Great Recession and the European Debt Crisis. Further work could integrate country-level indicators (e.g. GDP growth), to help disentangle micro-level financial stressors from systemic economic influences. Nonetheless, the lack of significant effects in income and wealth shock suggests that macro-level conditions are unlikely driving the core findings.

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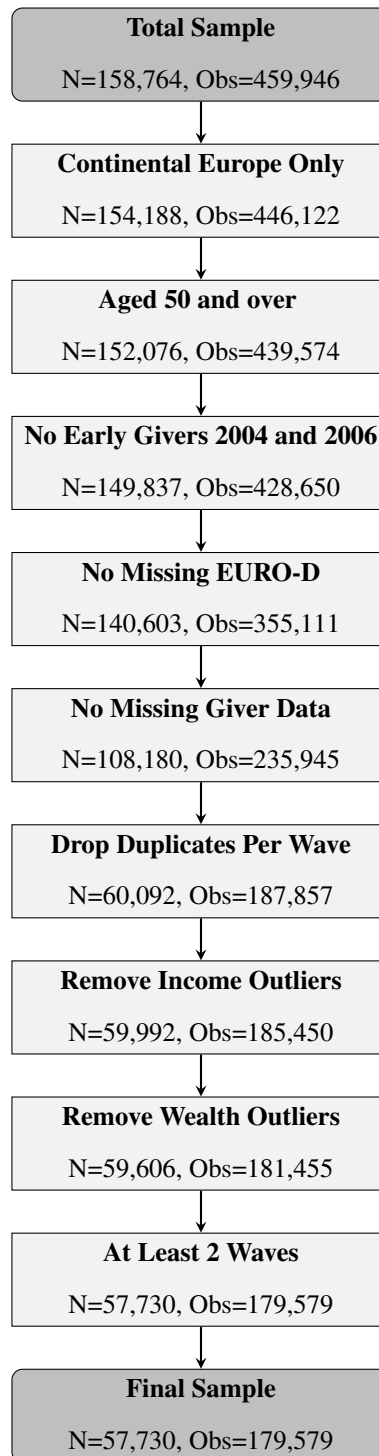
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APPENDIX

A Sample Selection and Long-Term Care Regime Classification

A.1 Sample Selection Flowchart

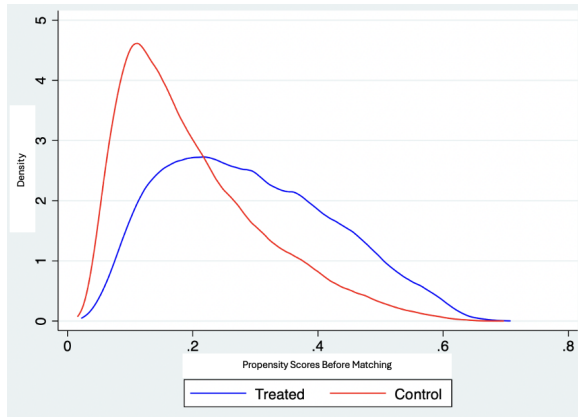


A.2 Long-Term Care Regime Classification

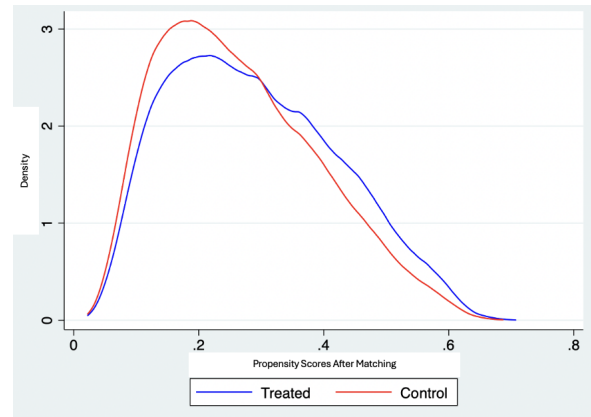
LTC Regime	Countries	Key Characteristics
Universal Public	Sweden, Denmark, Finland, Netherlands	Extensive formal care, limited family reliance
Insurance-Based	Austria, Germany, France, Switzerland, Belgium, Luxembourg	Mix of formal support and private/family contribution
Family-Based	Spain, Italy, Greece, Portugal, Cyprus, Malta	Strong informal care, limited state involvement
Mixed/Transitional	Czech Republic, Poland, Hungary, Slovenia, Estonia, Croatia, Lithuania, Latvia, Romania, Slovakia	Informal care predominant, weak institutions

B Robustness: Propensity Score Matching and Staggered Dynamic DiD Estimates

B.1 Distribution of Propensity Scores Before and After Matching

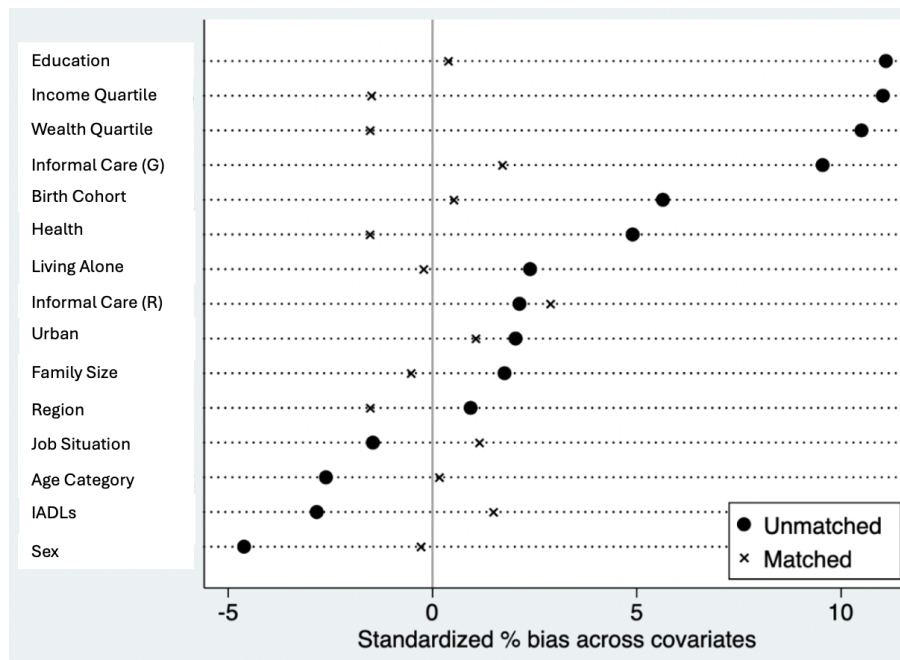


Panel A: Propensity Scores Before Matching



Panel B: Propensity Scores After Matching

B.2 Graphical Evidence of Matching Quality



B.3 Covariate Balance Before and After Matching

Variable	Before Matching			After Matching			
	Treated	Control	P-value	Treated	Control	% Bias	P-value
Job Situation	0.5401	0.5470	0.402	0.5401	0.5342	0.6	0.428
Education	1.0860	1.0033	0.000	1.0860	1.0825	0.5	0.551
IADLS	0.1846	0.1976	0.003	0.1846	0.1759	1.7	0.024
Self-Reported Health	2.0162	1.9564	0.000	2.0162	2.0150	0.1	0.883
Living Alone	0.8618	0.8472	0.009	0.8618	0.8686	-1.0	0.185
Family Size	5.9754	5.9925	0.395	5.9754	6.0254	-2.1	0.006
Age Category	3.1815	3.2595	0.000	3.1815	3.1926	-0.6	0.411
Region	1.8020	1.7911	0.294	1.8020	1.8112	-0.7	0.337
Given Informal Care	0.3897	0.3448	0.000	0.3897	0.3851	1.0	0.212
Received Informal Care	0.2374	0.2316	0.103	0.2374	0.2336	0.9	0.245
Sex	0.5482	0.5672	0.000	0.5482	0.5465	0.4	0.640
Urban	0.2844	0.2685	0.000	0.2844	0.2771	1.6	0.036
Income Quartile	2.9399	2.8178	0.000	2.9399	2.9478	-0.8	0.320
Wealth Quartile	2.8721	2.7510	0.000	2.8721	2.8697	0.2	0.772
Wave	6.2897	6.3033	0.352	6.2897	6.2858	0.2	0.768

B.4 Matching Quality Summary Statistics

Sample	Ps R ²	LR χ^2	p-value	Mean Bias	Median Bias	B	R	% Var
Unmatched	0.005	432.14	0.000	4.6	3.7	17.4	1.03	58
Matched	0.000	23.65	0.097	0.8	0.7	3.7	1.02	8

B.5 PSM-Adjusted Staggered Dynamic DiD Estimates

