

# Spousal Death and Survivor's Financial Response

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# Introduction

## Motivation & Research Questions

- The loss of a spouse can lead to serious financial challenges
  - In 2019, 14.4% of widows above 65 in the U.S. were living below the poverty line – compared to 4.7% of married women and 8.9% individuals above 65
1. Do survivors adjust their consumption behavior in response to spousal death, i.e., is survivors' consumption insured?
  2. Does accumulated wealth serve as insurance mechanism in such cases?
  3. Is the degree of insurance gender-specific?

## Literature Review

- Despite its importance, there are only a few papers investigating impacts
  - Labor supply (Fadlon and Nielsen 2020)
  - Portfolio choice allocation (Doskeland and Kvaerner 2020)
  - Net wealth (Poterba and Venti 2017)
- Hubener et al. (2016): Life cycle model including divorce and spousal death predicts
  1. High effect on HH income
  2. Low effect on consumption
  3. Financial wealth increases due to life insurance
- We test these predictions empirically, and will subsequently adjust model based these findings

# **Conceptual Framework**

## Conceptual framework

- Life-cycle model of saving with stochastic family dynamics
- Individual preferences over consumption, taking into account equivalent scale
  - Intertemporally separable utility :  $u(C_t; z_t) = q(z_t) \frac{C_t^{1-\gamma}}{1-\gamma}$
  - Equivalent scale following Scholz et al. (2006):  $q(z_t) = \left( \frac{z_t^j + 0.7z_t^k}{2.7} \right)^{\frac{3}{4}}$
  - Households value bequests according to  $b(A_t+k) = \theta \frac{(A_t+k)^{1-\gamma}}{1-\gamma}$
- Spouses face uncertain life span and individual, exogenous processes for labor income
- Individuals retire exogenously at 65 and start drawing social security benefits

## Conceptual framework

The individual maximizes:

$$\max_{c, \alpha_t} \left\{ \sum_{t=0}^T \beta^t [d_t u(C_t; z_t) + (1 - d_t)b(A_t)] \right\}$$

subject to:

$$A_{t+1} = (1 + r_{t+1}^p) [A_t + Y_{t+1} - C_t - \psi \times \mathbb{1}(\alpha_t > 0)]$$

Based on this simple framework we expect:

1. Reduction in nondurable consumption, constant equivalent consumption
2. Decrease in liquid wealth, survivor adjusts wealth-to income ratio
3. The lower the income share of the surviving spouse the higher the reduction in their nondurable consumption

# **Data & Methodology**



## Data

- **HRS & CAMS:** Representative panel of elderly in the U.S. with consumption data
- **Sample:** Unbalanced panel of 4,907 observations (597 households) with 776 mortality shocks, from 2000 to 2018

Table: Summary Statistics in Period Before Death

	(1) Mean	(2) SD	(3) Min	(4) Max
Deceased Age	72.52	9.87	29	94
Deceased Male	0.64	0.48	0	1
Deceased Income share	0.66	0.29	0	1
Survivor Age	70.50	10.39	40	93
Survivor Male	0.36	0.48	0	1
Survivor Income share	0.34	0.21	0	1
Total HH Spending	41,370.93	26,552.26	6,166	140,511
Total HH Nondurable Cons.	23,972.31	16,053.53	3,805	108,229
Total HH Durable Cons.	251.1915	118.5834	75	689
Total Wealth	309,501.10	464,049.6	-29,400	3,352,972

## Identification Strategy

- Aim is to causally identify dynamic effects of fatal shocks on survivor's consumption, but. . .
  - mortality shocks likely to be correlated with past consumption patterns
  - households without fatal shocks not a suitable control group
- **Identifying assumption:** within a short period of time, conditional on year and age fixed effects, timing of fatal shock is exogenous to consumption
- Event study approach comparing affected households with those who will experience the same shock close in time

## Empirical Strategy

Event-study specification:

$$y_{it} = \sum_{j=-12}^{10} \gamma_j SDE_{i(t+j)} + \beta X_{it} + \delta_t + \eta_{it}$$

- $y_{it}$  Outcome of interest of household  $i$  at time  $t$
- $SDE_{i(t+j)}$  Event-time dummies (omitted at  $j = -2$ )
- $\gamma_j$  Effect of spousal death  $j$  periods before or after the event, relative to the year before the mortality shock
- $X_{it}$  Set of survivor characteristics (incl. dummies for age, gender, race, education, household size)
- $\delta_t$  year dummies
- $\eta_{it}$  Clustered error term (household)

# **Preliminary Results**

## Preliminary Results: Income

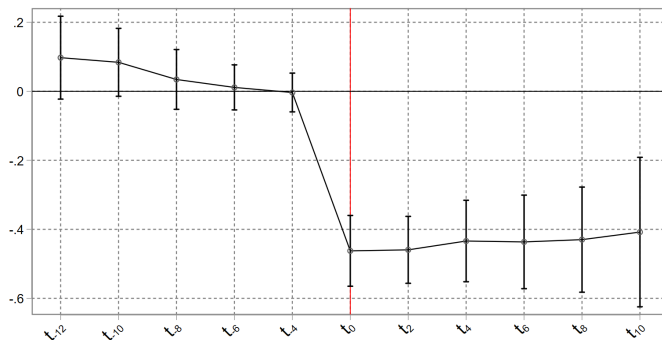


Figure: Changes in Total Household Income

## Preliminary Results: Consumption & Spending

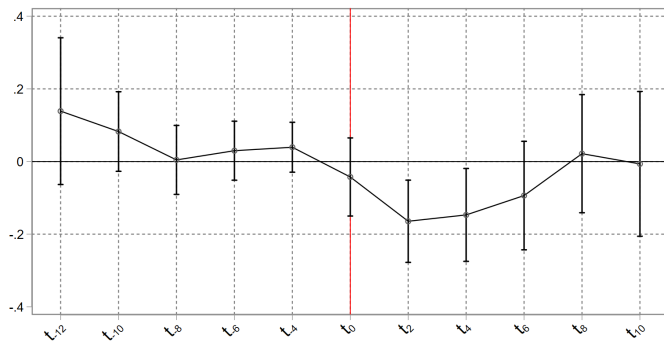


Figure: Changes in Household Nondurable Spending

▶ Total Spending

▶ Durable Consumption

## Preliminary Results: Consumption & Spending

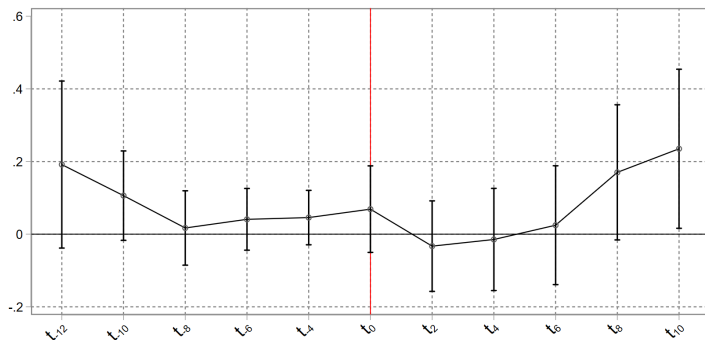


Figure: Changes in Nondurable Spending (Equivalent Scale)

## Preliminary Results: Consumption & Spending

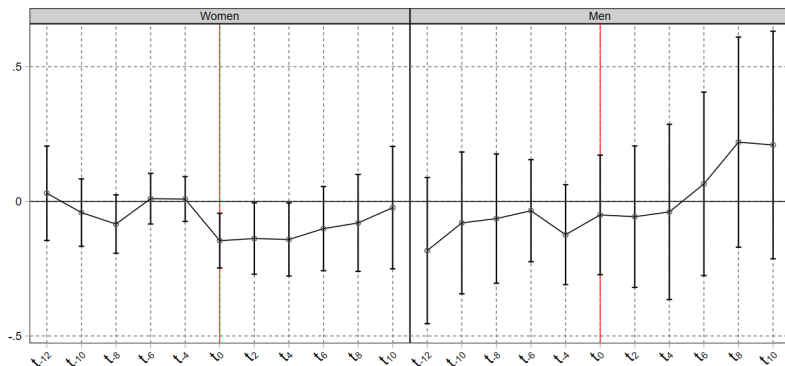
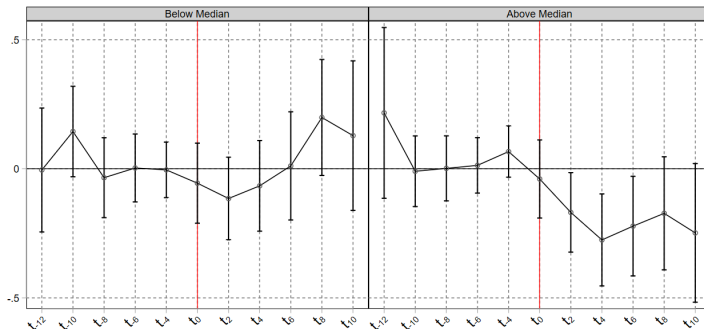


Figure: Changes in Nondurable Spending by Gender (Equivalent Scale)

▶ Without Scale



# Preliminary Results: Wealth as an Insurance Mechanism?



**Figure:** Changes in Nondurable Spending Conditioning on Wealth

► Changes in Wealth

# Conclusion

## Conclusion

- Spousal death induces significant and permanent decrease in household income
- The effect on nondurable spending is insignificant once we adjust for household size using the equivalent scale from Scholz et al. (2006)
- Widows seem to be more adversely affected than widowers
- For the wealthiest households wealth serves as consumption insurance  $\Rightarrow$  suggestive evidence of inequality reduction
- While we find a significant decrease in durable consumption, labor supply changes minimally and does not respond significantly

## Discussion & Outlook

### Discussion

- We cannot clearly pin down the mechanisms without calibrating the model
- Need to work out more clearly if impacts are gender-specific and why
- Institutional framework in the U.S. not properly accounted for

### Outlook

- Adjust the reduced-form analysis with recent contributions to the difference-in-differences literature
- Add life insurance to the conceptual framework and calibrate model
- Model more carefully which payments cease or begin after death of a partner in the U.S.

Thank You for Your Attention

- DOSKELAND, T. AND J. KVAERNER (2020): "Cancer Diagnoses and Portfolio Choice," *Available at SSRN 3530698*.
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- HUBENER, A., R. MAURER, AND O. S. MITCHELL (2016): "How family status and social security claiming options shape optimal life cycle portfolios," *The review of financial studies*, 29, 937–978.
- POTERBA, J. AND S. VENTI (2017): "Financial Well-Being in Late Life: Understanding the Impact of Adverse Health Shocks and Spousal Deaths," *RRC Paper No. NB117-03. Cambridge, MA: National Bureau of Economic Research*.
- SCHOLZ, J. K., A. SESHADRI, AND S. KHITATRAKUN (2006): "Are Americans saving "optimally" for retirement?" *Journal of Political Economy*, 114, 607–643.

## Preliminary Results: Consumption & Spending

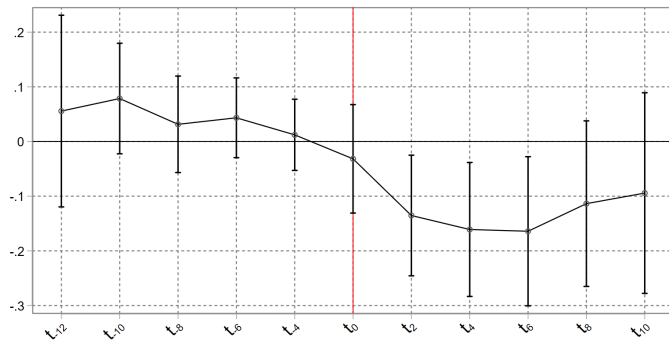


Figure: Changes in Total Household Spending

▶ Back

# Preliminary Results: Wealth as an Insurance Mechanism?

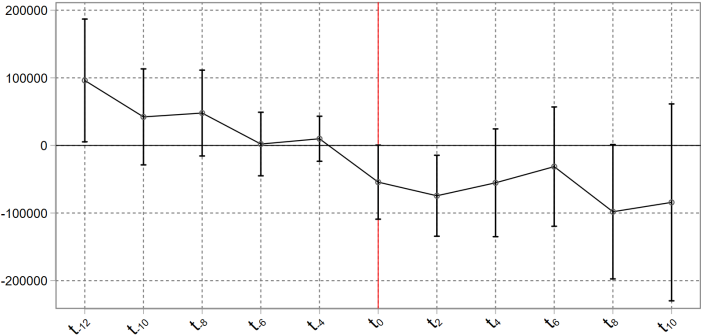


Figure: Changes in Total Household Wealth

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## Preliminary Results: Consumption & Spending

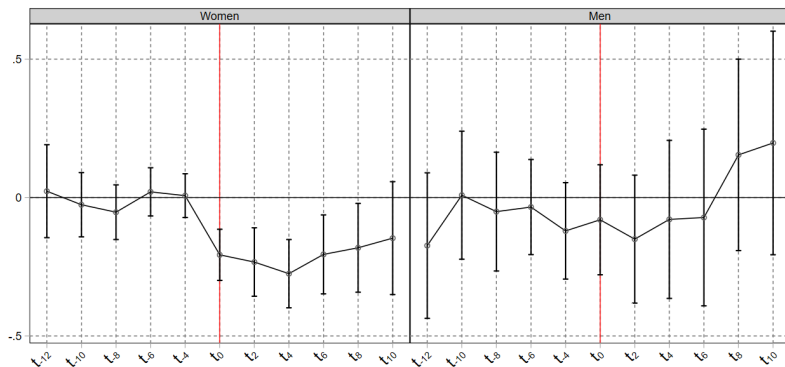


Figure: Changes in Nondurable Spending by Gender (No Scale)

▶ Back

## Preliminary Results: Consumption & Spending

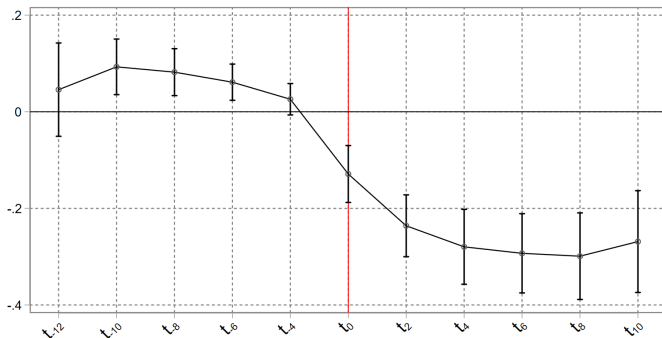


Figure: Changes in Household Durable Consumption

▶ Back

## Preliminary Results: Labor Force Status

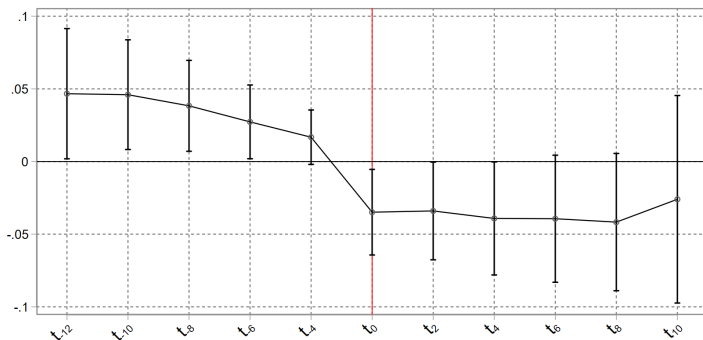


Figure: Labor Force Status of Survivor (ext. Margin)

## Preliminary Results: Labor Force Status

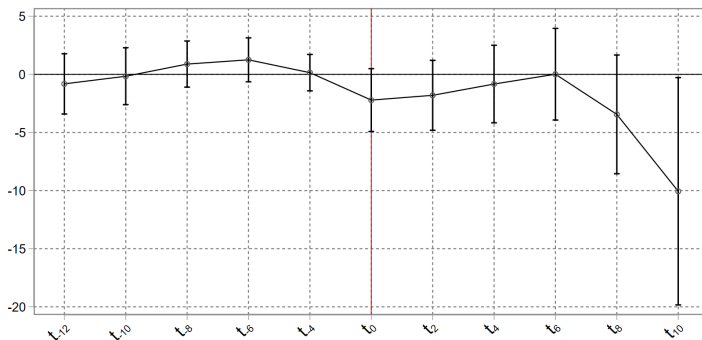
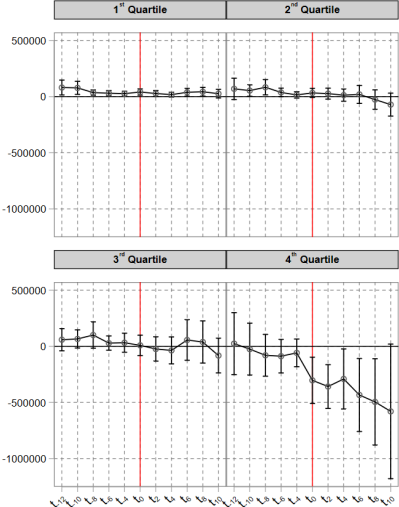


Figure: Labor Force Status of Survivor (int. Margin)

# Preliminary Results: Wealth as an Insurance Mechanism



**Figure:** Changes in Total Household Wealth

## Preliminary Results: Consumption & Spending

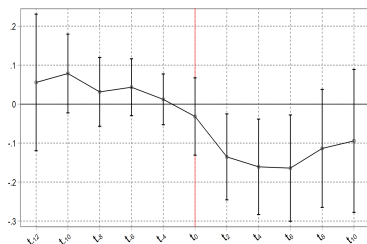


Figure: Changes in Household Total Spending

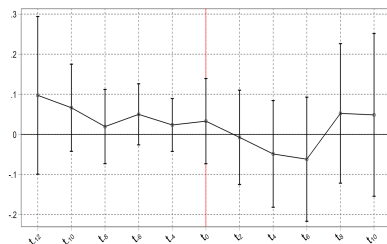


Figure: Changes in Household Total Spending, adjusted