

# Wealth, Gifts, and Estate Planning at the End of Life

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## Motivation

**For those wishing to transfer wealth to heirs, most tax codes give an incentive to pass on (some) wealth before death rather than as a bequest (Poterba, 2001)**

- ▶ Annual gift exemption (US, UK & Netherlands); '7-year rule' (UK)

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- ▶ Greater response  $\implies$  greater gain from taxing lifetime transfers received

**Gift-giving behaviour is also informative about motivations for making bequests**

- ▶ 'Warm-glow' vs altruism vs accidental
- ▶ Matters for design of insurance at older ages (De Nardi et al., 2010, 2016)

## This paper

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We use Dutch administrative panel data on wealth, gifts and medical expenses to:

- 1. Quantify the wealth decline and transfers to heirs in anticipation of death**
  - ▶ 'Event study' exploiting variation in timing of death
- 2. Assess the drivers of these gifts, including responsiveness to tax incentives**
  - ▶ Bunching and difference-in-bunching estimation exploiting a reform to gift tax



## Preview of findings

### Quantifying transfers to heirs:

- ▶ Singles with children reduce wealth by 9% in anticipation of death
- ▶ Almost all explained by transfers to children
- ▶ By contrast, wealth of couples increases as death approaches

### Role of tax-avoidance:

- ▶ Transfers very responsive to tax incentives to shift inter-temporally
- ▶ Estimated elasticities imply half of deathbed giving is tax-motivated
- ▶ Integrating gift and inheritance taxation would increase revenues by 3%-5%

### Drivers of transfers

- ▶ Giving consistent with 'conditional warm glow' rather than altruistic model

## Literature and contributions

**Deathbed estate planning:** Kopczuk (2007); Jones et al. (2020); Erixson & Escobar (2020); Suari-Andreu et al. (2019)

- ▶ Quantify the role of gifts, disentangling from changes in income, medical costs
- ▶ Show the importance of using individual-level data to measure suddenness of death

**Taxation of wealth transfers:** Piketty and Saez (2013); Goupille-Lebret & Infante (2018); Glogowsky (2020)

- ▶ Show that gifts are responsive to incentives to giving shift forward in time
- ▶ Important margin to account for in tax design

**Dynamics of wealth at older ages:** De Nardi, French and Jones (2010); Ameriks et al. (2011); Lockwood (2018); De Nardi et al. (2021)

- ▶ Evidence for 'warm-glow' from net gifts, conditional on having grandchildren

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Institutional Setting

Data

Quantifying transfers to heirs

Role of tax avoidance

Motivations for giving

Summary and conclusions

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## Institutional Setting: Inheritance and Gift Tax

The Netherlands taxes wealth, gifts and inheritances

- ▶ Gift tax is levied on annual flows of gifts above an exempt amount
- ▶ Rates are progressive and aligned with inheritance tax

Table: Overview of rates and exemptions for gift tax in 2017 (€)

Relationship	Exemption (gifts)	Exemption (inher)	Rate $\leq$ 122,268	Rate $\geq$ 122,269
Parent	5,320	20,209	10%	20%
Grandparent	2,129	20,209	18%	36%
Other	2,129	2,129	30%	40%

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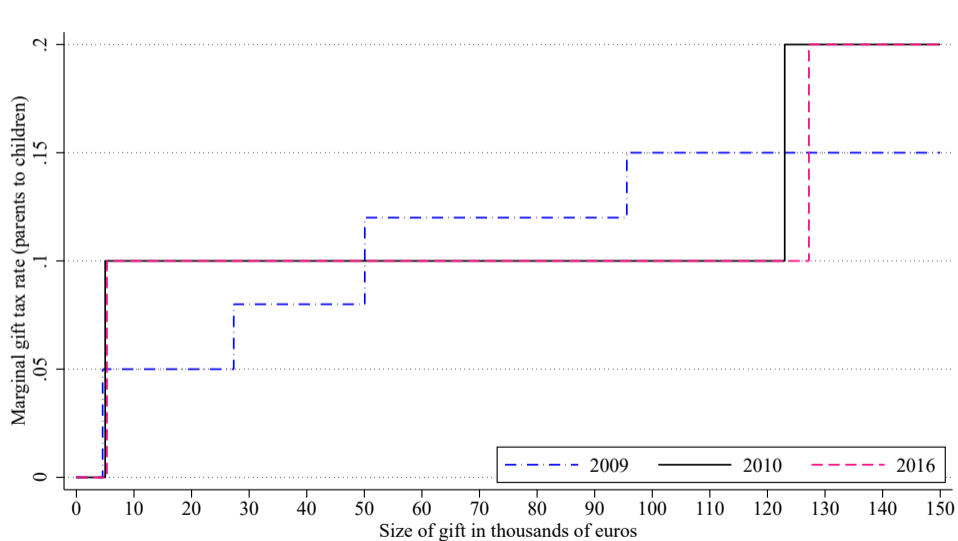
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Other	2,129	2,129	30%	40%

- ▶ 2010 reform reduced the number of gift tax bands

## Gift tax schedule for gifts from parents to children of up to €150,000



Note: Figure shows the main rate of gift tax applicable, excluding any special exemptions, in 2009, 2010 and 2016.

## Institutional Setting: Health and Long-term Care Insurance

Hospital spending is fully insured with essentially no private market

- ▶ No meaningful out-of-pocket hospital spending

Long-term care (home/residential/nursing care) is insured with copayments required

- ▶ Copayments depend on wealth, income and type of care received
- ▶ Copayments can be substantial: up to 4% of wealth annually; maximum of 2,419 euros per month in 2020



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## Data

Data from Statistics Netherlands on whole Dutch population (2007 to 2019)

- ▶ Standard demographics: age, sex etc.
- ▶ Wealth: housing, financial (shares, deposits), debts, business assets, (ex pensions)
- ▶ Taxable gifts
- ▶ Annual income
- ▶ Medical spending, paid by insurer (from 2009)
- ▶ Care copayments (from 2015)
- ▶ ICD-10 cause of death codes
- ▶ Links to partner, other household members, family relationships

Sample is  $\approx 650,000$  adults who died during 2013-15 and 2017-2019

- ▶ One observation per single/couple for 7 years up to and including year of death
- ▶ Wealth, gifts and income measured at the couple level

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## Empirical Strategy 1: identifying the dynamics of assets around death

We use an event study (dynamic DiD) with matched control (Fadlon & Nielsen, 2019)

- ▶ Treatment group is those who died in 2013, 2014 and 2015
- ▶ We match each treated individual to someone who died 4 years later
- ▶ Match is based on sex, age, single/couple, initial wealth, income and health spend

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$$y_{i,t} = \alpha_i + \sum_{\substack{\tau=-6 \\ \tau \neq -4}}^0 \beta_{\tau} \cdot \mathbb{1}\{t = t_{Di} + \tau\} + \sum_{\substack{\tau=-6 \\ \tau \neq -4}}^0 \beta_{\tau}^{ES} \cdot \mathbb{1}\{t = t_{Di} + \tau\} \cdot T_i + \epsilon_{i,t}$$

where:

- ▶  $t_{Di}$  is time of death of treated member of  $i$ 's matched pair and  $T_i$  is treatment indicator

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Assumptions:

- ▶ Conditional parallel trends in absence of death
- ▶ No effect of proximity of death 4 years or more before death

## Empirical Strategy 2: isolating the effect on gifts

An effect of proximity to death on wealth could plausibly be driven by changes in:

1. Income
2. Medical or long-term care spending
3. Consumption
4. Gift-giving

Approach:

- ▶ Rule out private healthcare expenditure as negligible
- ▶ Test for effects on income: can rule out changes  $> 0.5$ ppts [more](#)
- ▶ Look at children's wealth, dynasty (parents + kids) wealth, and taxable gifts
- ▶ Examine care copayments



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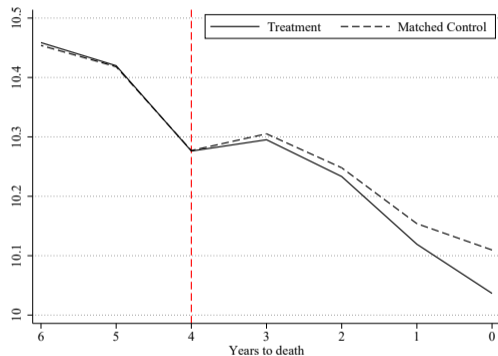
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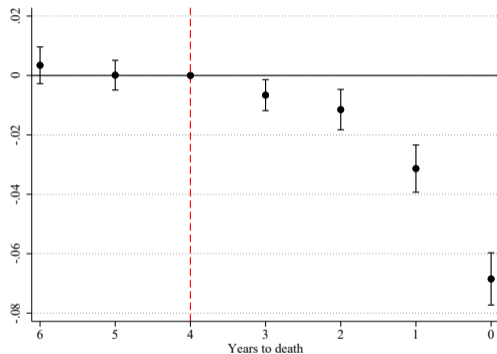
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# Results: Singles' log wealth

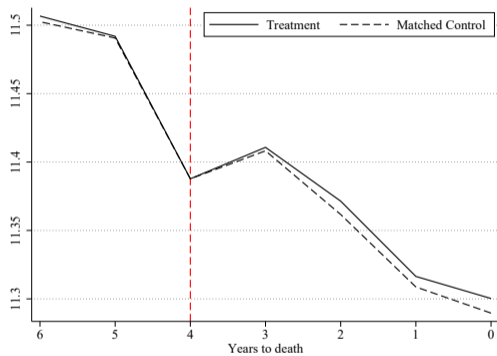


(a) Log wealth

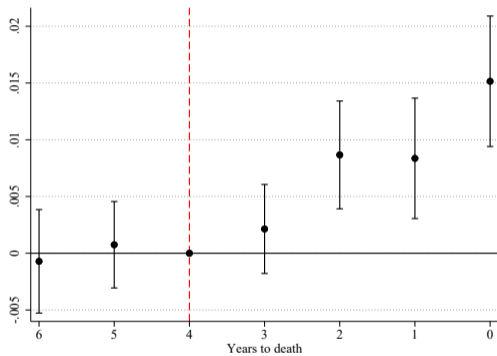


(b) Event study estimates

# Results: Couples' log wealth

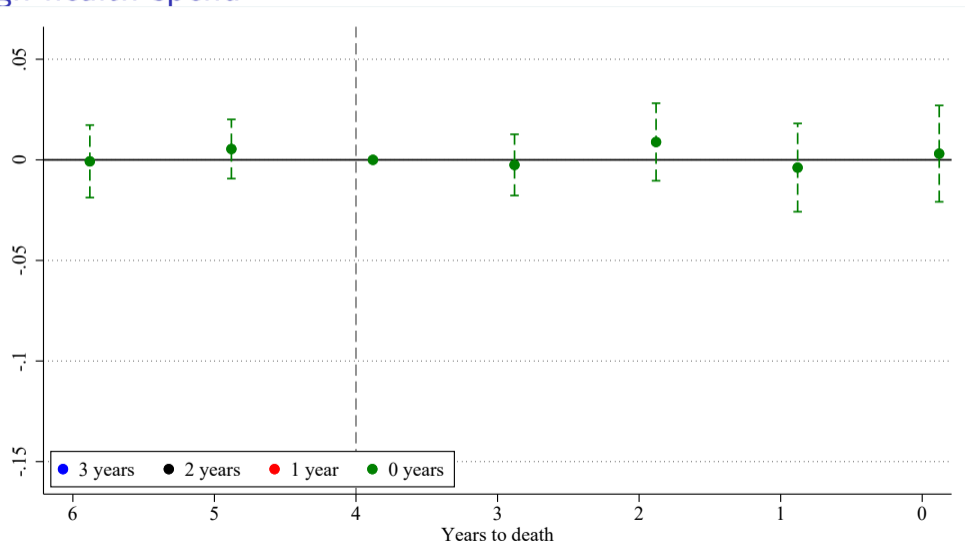


(a) Log wealth

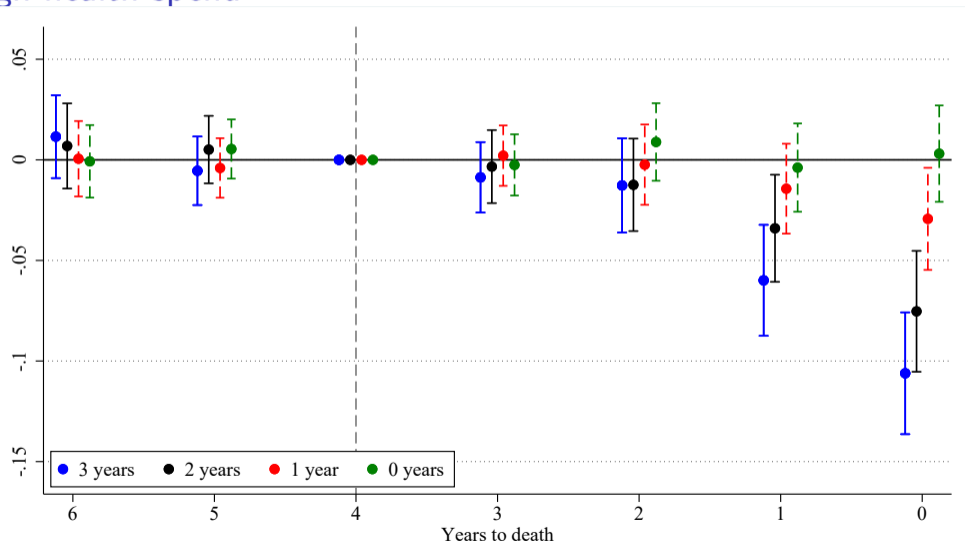


(b) Event study estimates

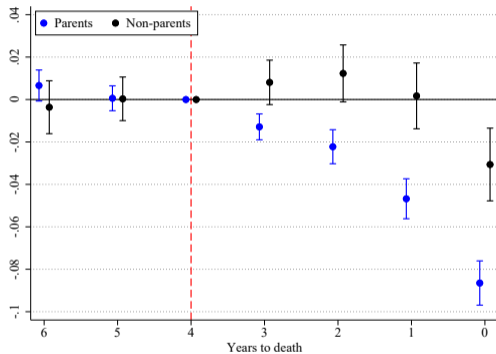
## Results: Singles' log wealth, by number of years before death that first had high health spend



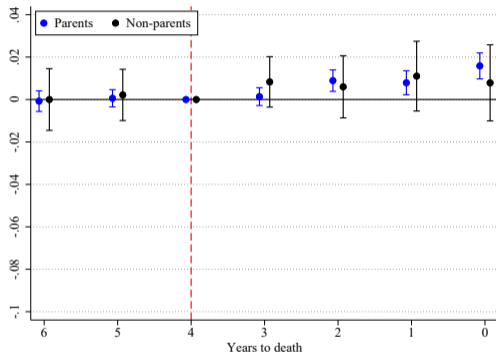
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# Results: Log wealth, parents vs non-parents

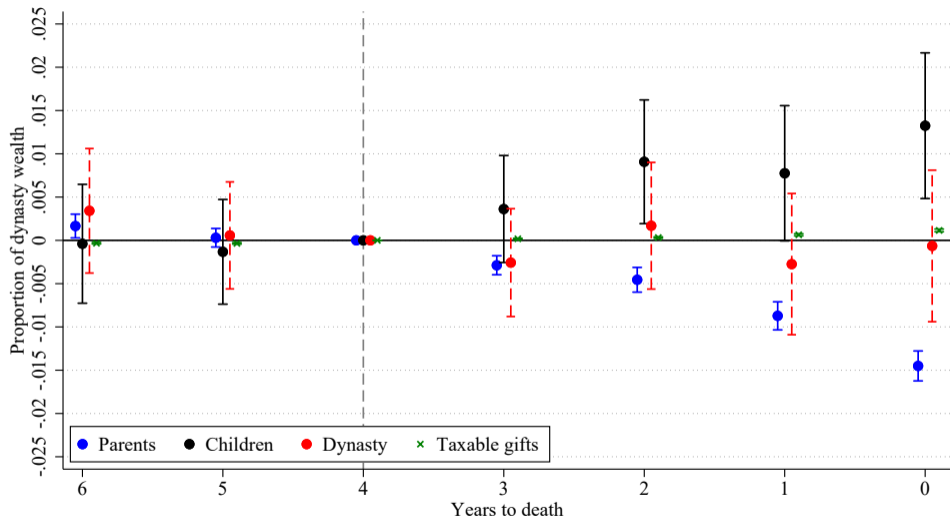


(a) Singles

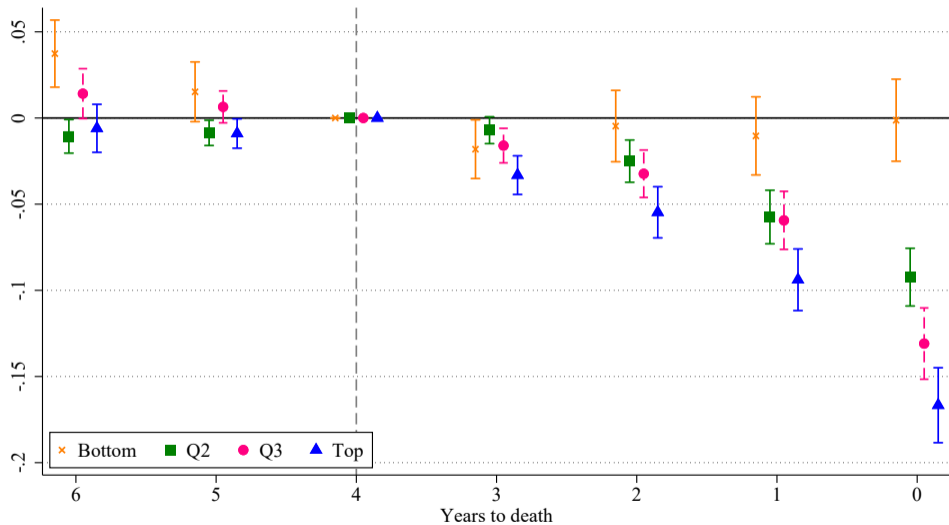


(b) Couples

# Results: Singles' parent, child and dynasty log wealth and taxable gifts

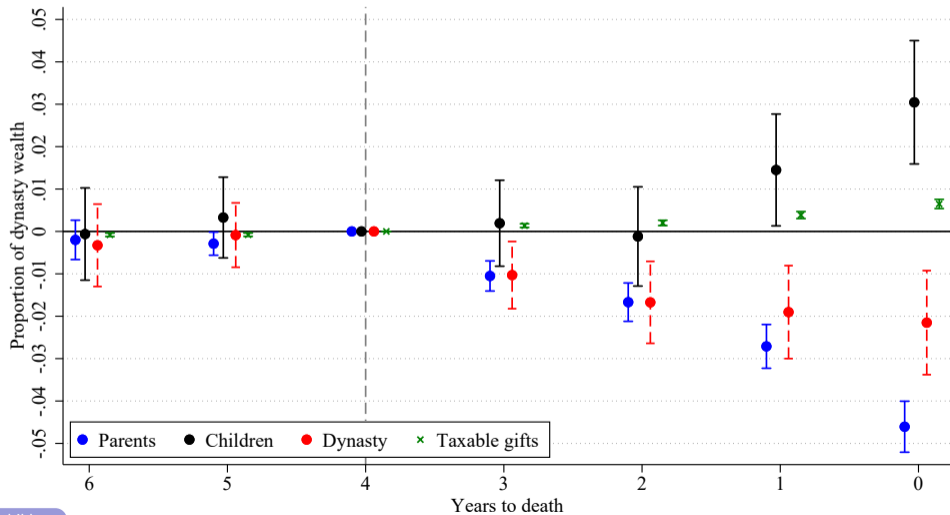


## Results: Log wealth, singles with children, by initial wealth quartile

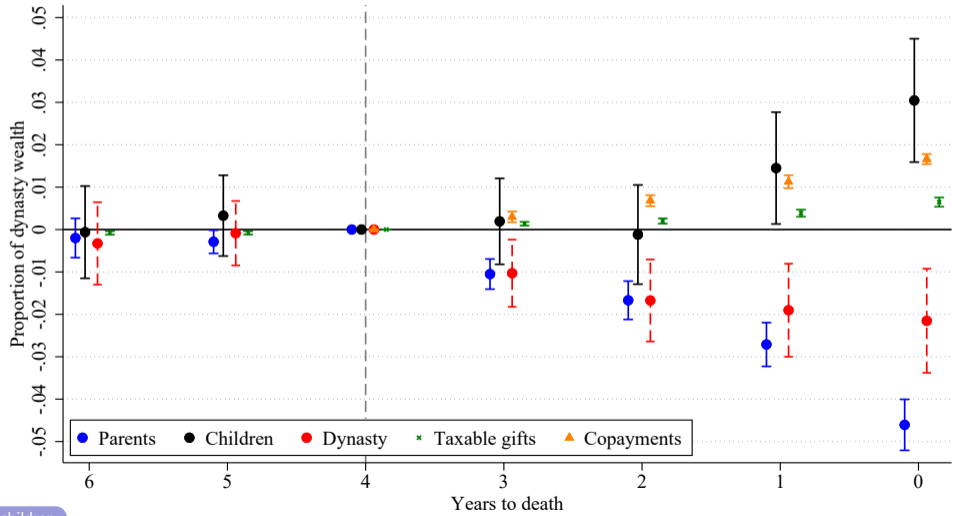




# Results: Singles' parent, child and dynasty log wealth, top quartile



# Results: Singles' parent, child and dynasty log wealth and cumulative copayments, top quartile



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## Empirical Strategy: Estimating the Elasticity of Gifts to Taxation

Bunching at kinks can be used to infer elasticity to the net-of-tax rate (Saez, 2010)

- ▶ When change is small, we recover a compensated elasticity (Frisch)
- ▶ We then use these estimates to infer giving under alternative tax regimes

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2 approaches to estimation of counterfactual distribution:

1. Fit a polynomial to the density of gifts, excluding region near kink (Chetty, 2011)

$$c_{j,t} = \alpha_t + \sum_{p=1}^P \beta_e \cdot (z_j - z^*)^e + \sum_{\tau=2010}^{\tau=2016} \sum_{l=g_-}^{g_+} \gamma_{l,t} \cdot \mathbb{1}\{z_j - z^* = l\} \cdot \mathbb{1}\{t = \tau\} + \phi \cdot \mathbb{1}\{z_j \in \mathbb{X}\}$$

- ▶  $c_{j,t}$  is count of gifts in bin  $j$ ,  $z_j$  value of gifts in bin  $j$ , and  $z^*$  the kink,  $[g_-, g_+]$  is excluded region and  $\mathbb{X}$  is a set of focal numbers (round numbers etc.).
- ▶ Also implement 'missing mass' adjustment

2. 'Difference-in-bunching': use change in distribution before vs after 2010 reform

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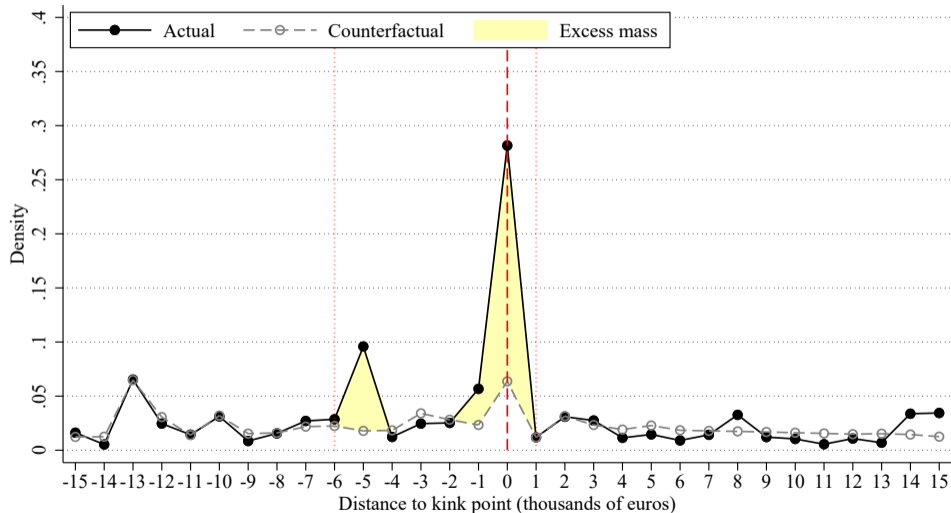
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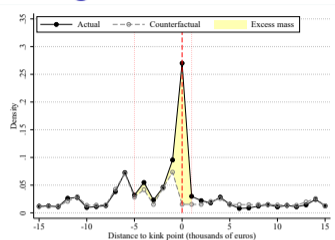
## Bunching results: kink in the 2010-16 regime



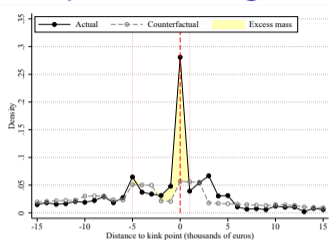
Note: The red dashed line indicates the bin containing the kink point. The dotted red lines indicate the bounds of the excluded region around the kink. The shaded region shows the excess mass at the kink.



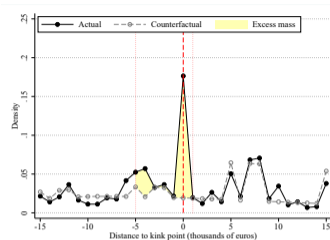
# Bunching results: kinks in the pre-2010 regime



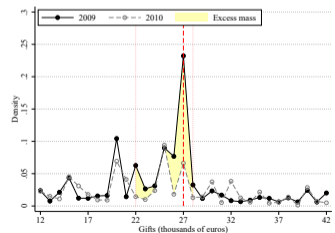
(a) Kink 1, 2007-09: polynomial



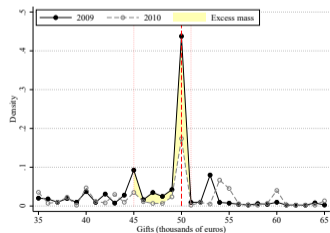
(b) Kink 2, 2007-09: polynomial



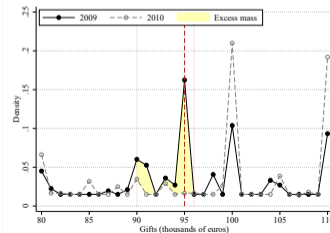
(c) Kink 3, 2007-09: polynomial



(d) Kink 1, 2007-09: D-i-B



(e) Kink 2, 2007-09: D-i-B



(f) Kink 3, 2007-09: D-i-B

## Results: elasticity estimates and role of tax-avoidance

Table: Elasticity estimates from bunching estimation

Method	2007-09: kink 1	2007-09: kink 2	2007-09: kink 3	2010-16: sole kink	Observations
Polynomial	9.32 (0.15)	2.51 (0.12)	2.52 (0.15)	0.85 (0.26)	37,161
Difference- in-Bunching	6.90	3.56	4.49		18,111

Note: The first row contains the elasticity estimates based on the counterfactual estimated using the fitted polynomial approach. Standard errors for these estimates, obtained using a bootstrap resampling procedure are reported in parentheses. The second row contains the elasticity estimates based on the difference-in-bunching method.

## Results: implications for deathbed giving and revenues

**How much of deathbed giving is tax-motivated** and what are revenue effects?

- ▶ Policy counterfactual: move to integrated system of transfer taxation of gifts
- ▶ Gifts over final 4 years before death are added to inheritances for tax purposes

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Assuming the following yields **upper-bound effects on gifts** over final 4 years:

1. Gifts made face a 10ppts higher tax rate
2. Response of giving is given by estimated elasticity
3. Substitution is to bequests or consumption

⇒ **48% reduction in gifts** made in anticipation of death

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**Increase in inheritance tax revenues:**

- ▶ Upper bound under no behavioural response: **5%**
- ▶ Lower bound if all response is to increase consumption: **3%**

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# Motivations for giving

1. Which individuals drive the decline in wealth?
  - ▶ By presence and number of children
  - ▶ By presence of grandchildren
2. Within giver, does amount of given to a child vary by proxies for child's marginal utility of consumption?
  - ▶ Wealth rank within family
  - ▶ Number of children

## Results: Triple-difference estimation

	Decline in singles' log wealth by start of year of death				
	(1)	(2)	(3)	(4)	(5)
Has kids	-0.056***				
	(0.010)				
Has one kid					
Has two kids					
Has three or more kids					
Has grandchildren					
Wealth decile controls	No				
Observations	213,132				

Note: Statistical significance at the 1% level is denoted by \*\*\*. Standard errors are clustered at the level of the matched pair.



## Results: Triple-difference estimation

	Decline in singles' log wealth by start of year of death				
	(1)	(2)	(3)	(4)	(5)
Has kids	-0.056***	-0.064***			
	(0.010)	(0.010)			
Has one kid					
Has two kids					
Has three or more kids					
Has grandchildren					
Wealth decile controls	No	Yes			
Observations	213,132	213,132			

Note: Statistical significance at the 1% level is denoted by \*\*\*. Standard errors are clustered at the level of the matched pair.

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Has kids	-0.056***	-0.064***			
	(0.010)	(0.010)			
Has one kid			-0.055***		
			(0.016)		
Has two kids			-0.067***		
			(0.012)		
Has three or more kids			-0.064***		
			(0.011)		
Has grandchildren					
Wealth decile controls	No	Yes	Yes		
Observations	213,132	213,132	213,132		

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Has kids	-0.056*** (0.010)	-0.064*** (0.010)		-0.009 (0.019)	
Has one kid			-0.055*** (0.016)		-0.012 (0.021)
Has two kids			-0.067*** (0.012)		-0.010 (0.022)
Has three or more kids			-0.064*** (0.011)		0.000 (0.023)
Has grandchildren				-0.062*** (0.018)	-0.066*** (0.020)
Wealth decile controls	No	Yes	Yes	Yes	Yes
Observations	213,132	213,132	213,132	213,132	213,132

Note: Statistical significance at the 1% level is denoted by \*\*\*. Standard errors are clustered at the level of the matched pair.

## Results: Testing for altruism

Table: Relationship between child characteristics and gifts received

	Taxable gifts (Euros)			
	(1)	(2)	(3)	(4)
Child wealth rank	-14.66*** (4.58)			
Most wealthy child				
Child has kids				
Child's number of kids				
Constant	519.57*** (9.29)			
Number of parents	103,174			

Note: Statistical significance at the 1% level is denoted by \*\*\*. Standard errors are clustered at the parent level. All specifications include parent FE.

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	Taxable gifts (Euros)			
	(1)	(2)	(3)	(4)
Child wealth rank	-14.66*** (4.58)			
Most wealthy child		-47.31*** (14.08)		
Child has kids				
Child's number of kids				
Constant	519.57*** (9.29)	508.52*** (5.56)		
Number of parents	103,174	103,174		

Note: Statistical significance at the 1% level is denoted by \*\*\*. Standard errors are clustered at the parent level. All specifications include parent FE.

## Results: Testing for altruism

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	Taxable gifts (Euros)			
	(1)	(2)	(3)	(4)
Child wealth rank	-14.66*** (4.58)		-13.84*** (4.56)	
Most wealthy child		-47.31*** (14.08)		-44.52*** (14.01)
Child has kids			89.11*** (26.12)	86.91*** (25.88)
Child's number of kids			-5.00 (15.78)	-4.94 (7.84)
Constant	519.57*** (9.29)	508.52*** (5.56)	459.77*** (15.77)	450.83*** (13.79)
Number of parents	103,174	103,174	103,174	103,174

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- ▶ Singles with children reduce wealth by 9% in anticipation of death
- ▶ Almost all explained by rise in children's wealth across most of distribution
- ▶ In the top quartile, care copayments can explain the residual decline
- ▶ By contrast, wealth of couples increases as death approaches

Role of tax-avoidance

- ▶ Transfers very responsive to tax incentives to shift inter-temporally
- ▶ Integration of inheritance and gift taxes would raise revenues by just 3%-5%



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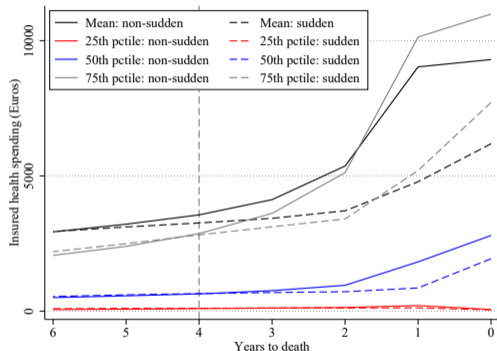
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- ▶ Transfers very responsive to tax incentives to shift inter-temporally
- ▶ Integration of inheritance and gift taxes would raise revenues by just 3%-5%

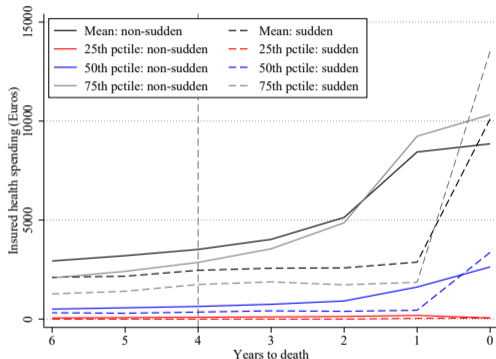
Implications:

- ▶ Singles with children do exploit tax incentives around giving
- ▶ Substantial estate planning behaviour across the wealth distribution
- ▶ Results can be rationalised by a combination of warm-glow from net-of-tax bequests for those with grandchildren, precautionary motives from longevity risk, and health-dependent utility

# Health spending for those dying 'sudden' and 'non-sudden' deaths

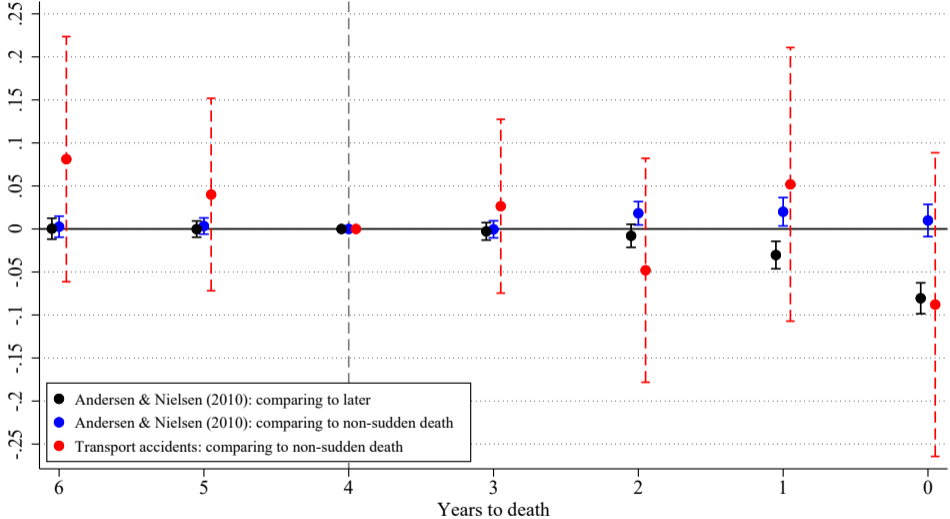


(a) Sudden deaths: Andersen and Nielsen (2010)

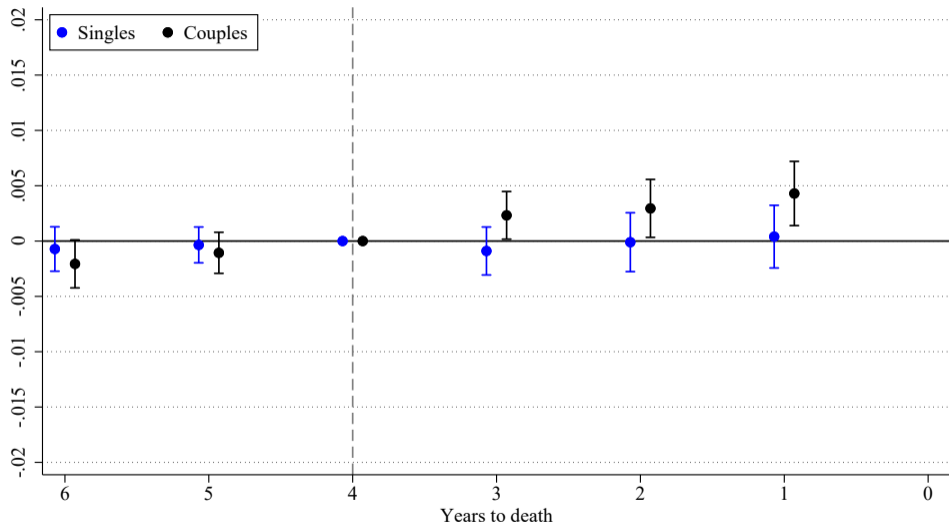


(b) Sudden deaths: Transport accidents

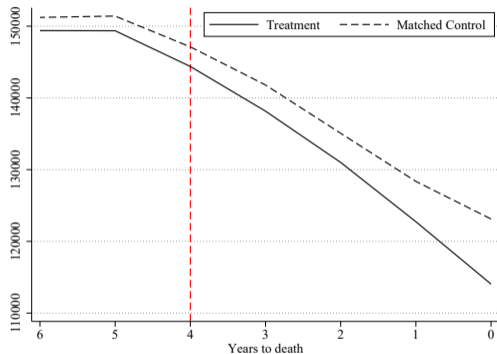
# Additional Results: Diff-in-diff using sudden vs non-sudden deaths



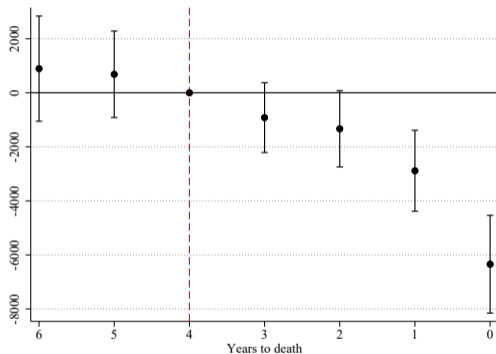
## Results: Log income



# Results: Singles' level of wealth

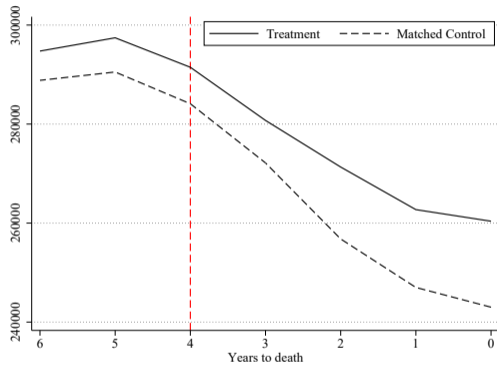


(a) Level of wealth

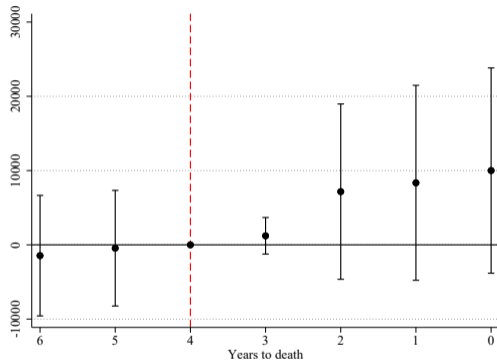


(b) Event study estimates

# Results: Couples' level wealth

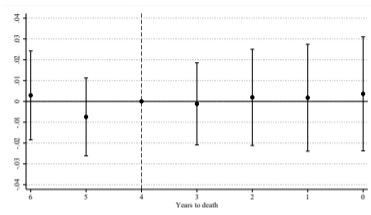


(a) Level of wealth

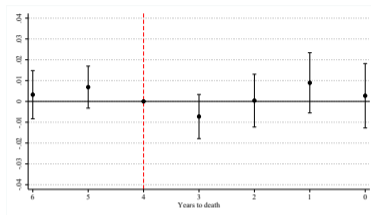


(b) Event study estimates

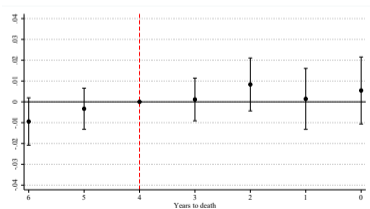
# Results: Singles' with children dynasty wealth, including grandkids



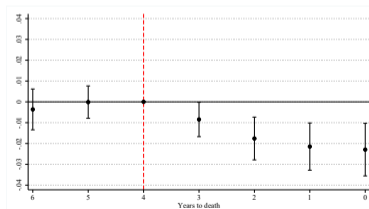
(a) Quartile 1



(b) Quartile 2



(c) Quartile 3



(d) Quartile 4