

IN-CARE Working Meeting

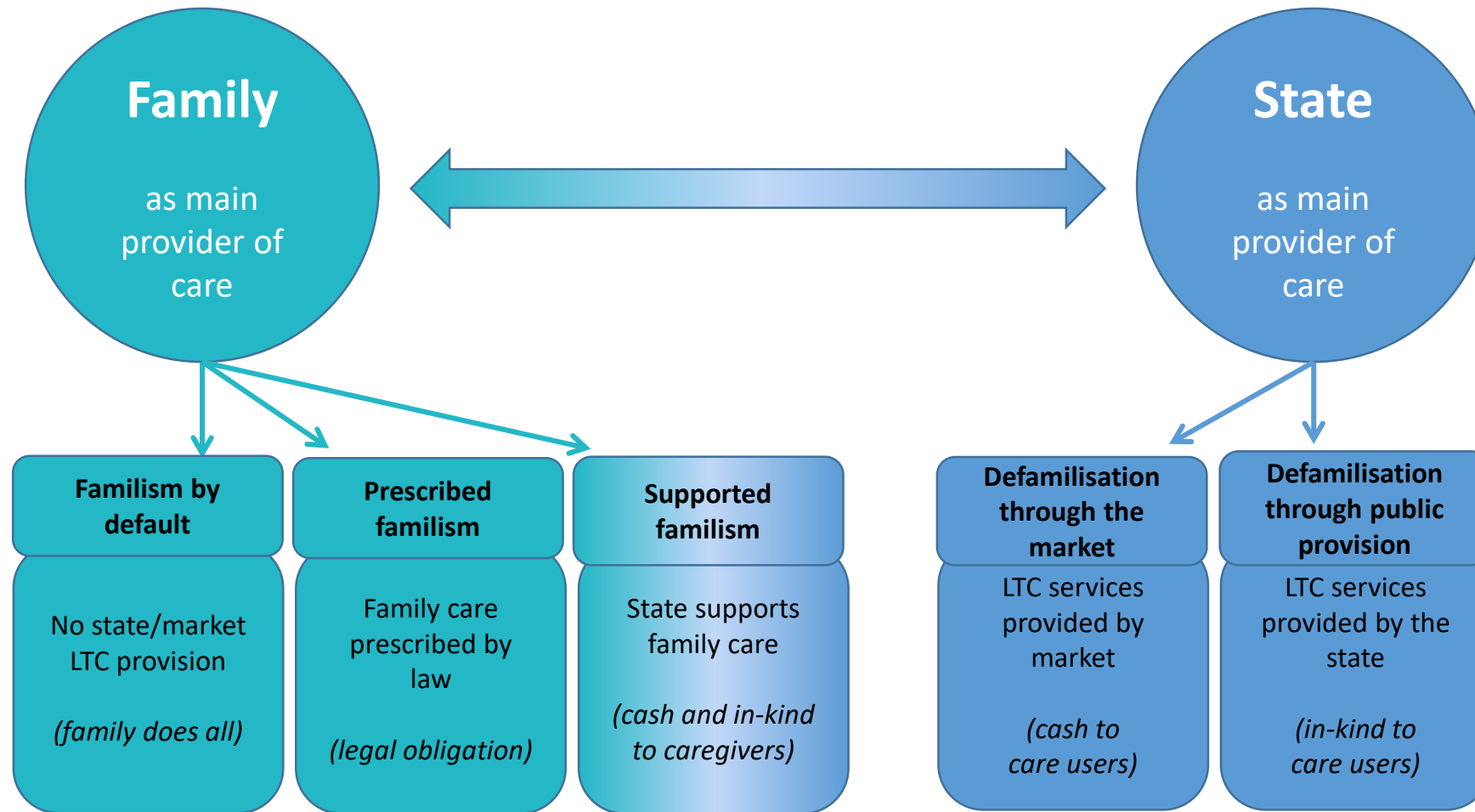
London, 9-10 May 2022

LTC policies, access to care and inequalities

Ellen Verbakel, Mauricio Avendano and Ludovico
Carrino, Rong Fu and Yoko Ibuka



- Many countries adjust their long-term care (LTC) policies to meet the growing demand for care
- Unintended consequences for SES inequality in care use and informal caregiving?
- Aim:
 - Encourage and facilitate research on the macro-micro link between LTC policies and SES inequalities in care
- Need for macro-level LTC policy indicators



Saraceno, C. (2016). Varieties of familism: Comparing four southern European and East Asian welfare regimes. *Journal of European Social Policy*, 26(4): 314-326.

- Suppose lower SES groups use and provide more informal care
- Expected impact of LTC policies on SES inequalities
- in care use and caregiving:

LTC policy	SES inequalities
Supported familism	increase
Defamilisation through the market	increase
Defamilisation through public provision	decrease

- Distinctive features of the 3 supportive LTC policies

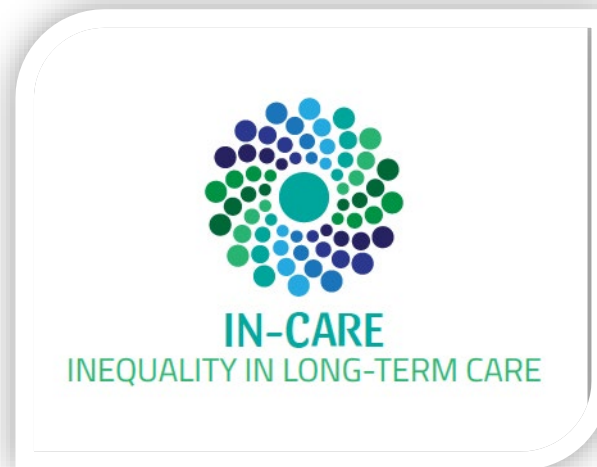
LTC policy	To whom?	How?
Supported familism	informal caregivers	in-cash or in-kind
Defamilisation through the market	care users	in-cash
Defamilisation through public provision	care users	in-kind

- What are the general policy implications of our results?
- Which specific policy instruments increase or decrease SES inequality in care use and caregiving?
- What message do we want to convey to (different kinds of) stakeholders?

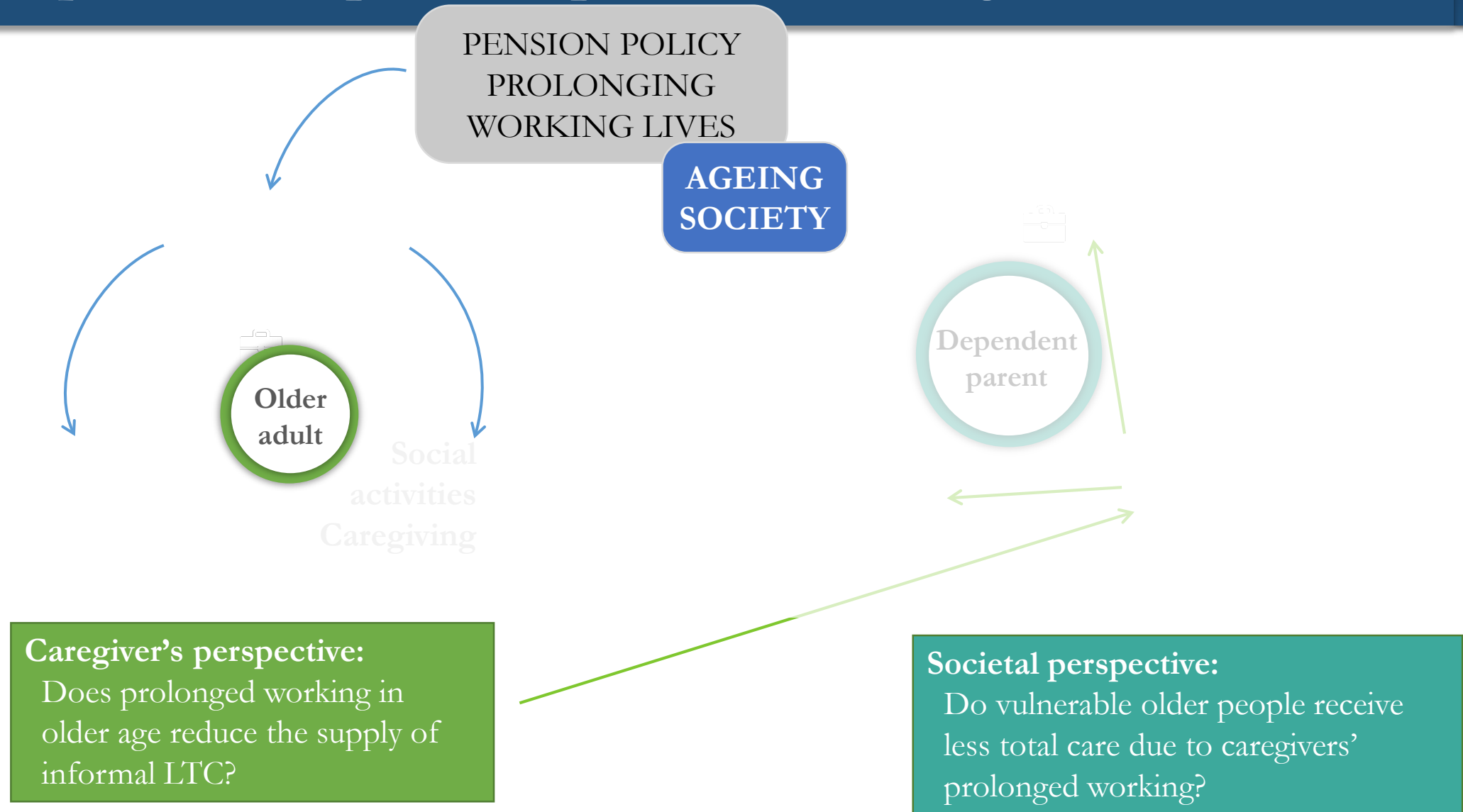
Public policies, individuals and generations:

How LTC legislations & other policies affect
older people, older workers and their families

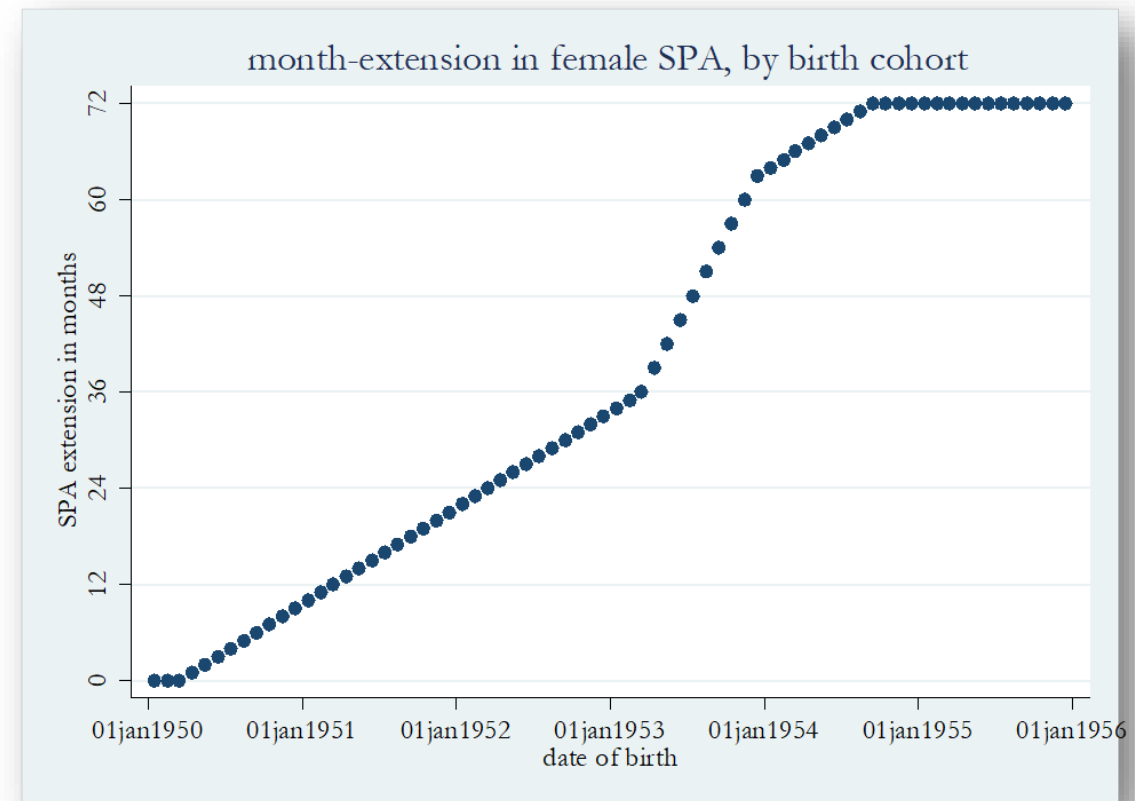
Mauricio Avendano, Ludovico Carrino
Ginevra Floridi, Karen Glaser, Vahé Nafilyan, Erica Reinhard



Research question 1: pension policies & intergenerational LTC



- How does working more hours in older age affect the provision of informal care to partners and parents?
- UK reform increased female State Pension Age by 6 years based on birth date
- Affected women work more hours and have higher employment rates past age of 60



- Data: Understanding Society, women 55-65yo, 2009-2017
- The reform allows us to compare women of same age but different birth date, hence different eligibility to Pension and different incentive to work
- We estimate effect on caregiving of working more hours due to higher SPA
- Causal inference via instrumental variable approach

RESULTS: work hours reduce extra household informal care

	Any amount of care (2) Probit IV	log weekly hours among carers (4) Interval reg. IV
A – extra-household caregiving		
Log working-hours	-0.029 (0.033)	-0.367*** (0.120)
<i>N</i>	27,044	5,566
F-test excl. instr.	47.070	28.676
Mean outcome	0.206	9.077

An increase of 10% in work-hours (+100mins/w) leads to 3.7% lower care hours (-21 mins/w)

Work up by 10h/w
→ care drops by 2.1h/w

→ 113.4h per year, valued £2000 (£17.2/hour)

- We also estimate reductions in probability of providing *meaningful* care (at least 5h/week) and *intensive* care (20h+)
- In-household care: no significant effect found

Women in heavier jobs are giving up more care



- For those in physical/psychosocially demanding jobs, a 10% increase in work-hours reduces caregiving hours by 6.4% (40 mins/week)
 - index by Kroll et al 2013
 - Ergonomic Stress, Environmental Pollution, Mental Stress, Social Stress, Temporal Loads
 - linked to ISCO codes, based on German survey on working conditions, validated

Exposure	log weekly hours among extra-hh carers	
	Instrumented interval-regression	
	No psycho-social	Yes Psycho-social
Log working hours	-0.129 (0.142)	-0.639*** (0.236)
N	2,497	3,012
F-test excl. instr.	15.548	11.560

Further analyses

- For women in partnership, working longer has no significant effect on partner's care provision.
- Results are robust to controlling for caregivers' health and income
- Placebo tests
- Remove respondents who might be less affected by SPA changes due to employment history
- Linear account for age and time, and distance to/from SPA

Women in multigenerational familiar face heavy drops



- We use information on living parents / grandchildren as proxy for care duties

N=24,241	net effect for sub groups (IV model with interactions)			
	no grandchild no parents (29%)	yes grandchild no parents (40%)	no grandchild yes parents (16%)	Yes both (sandwich) (15%)
Effect of log work-hours on probability any care given	-0.021 (0.029)	-0.029 (0.027)	-0.023 (0.028)	-0.062** (0.028)
probability 5+ hours care given	-0.040 (0.028)	-0.035 (0.025)	-0.054** (0.024)	-0.075*** (0.026)
probability 20+ hours care given	0.007 (0.011)	-0.001 (0.009)	-0.008 (0.009)	-0.014 (0.009)
F test	18.9	36.2	19.9	25.7
<i>Averages</i>				
% providing any care	12.1%	12.1%	37.6%	40.6%
% providing 5+ h care	4.8%	6.6%	23.4%	26.2%
working hours	28.4	27	29.3	28.4

- Does the loss in daughters' care lead to substitution from other sources of informal or formal care?
- ELSA data (2008-2017) on respondents with any daughter aged 55-65
- Causal inference exploiting different pension eligibility status of respondents' daughters due to the pension reform
 - Difference in differences with individual fixed effects

Effect of daughters' pension eligibility on older parent care use



	(1)	(2)
	Any help	Number of tasks
	A- help by anyone	
All daughters under the SPA	-0.0274 (0.0425)	-0.452** (0.218)
	B- help by daughters	
All daughters under the SPA	-0.0898** (0.0372)	-0.204** (0.0950)
	C- help by other informal carer	
All daughters under the SPA	-0.00818 (0.0404)	-0.0365 (0.0981)
	D- by a paid carer	
All daughters under the SPA	0.0112 (0.0364)	-0.150 (0.107)
Observations	3,911	3,911
Number of Individuals	1,617	1,617

- **Key message –Pension reform**

- Reduces the supply of informal care for older parents, particularly for women in demanding jobs and the sandwich generation
- Increases unmet need for vulnerable older people (higher future costs?)

- **Policy implications**

- Coordination between LTC policies and pension policies critical to unintended impacts and inequalities in care for older people
- Policy instruments:
 - Incentive or requirement for employers to offer work flexibility, e.g., part time options
 - Target policies to workers from high-demand jobs
 - Introduce caregivers' work family conflicts as part of eligibility criteria for formal care

RQ: Does publicly subsidized home-based formal care impact the mental health and psychological well-being of older people in Europe?



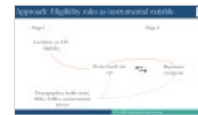
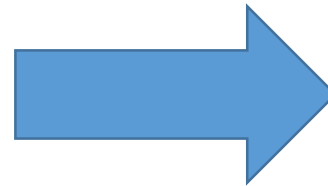
Why is this important:

- Ongoing shift from institutional care to ‘age in place’.
- Models of long-term care demand assume positive causal link between (home-based) care use and utility (e.g., Nuscheler and Roeder 2013, Stabile et al. 2006, Forder et al. 2018), but there is little empirical evidence
- Activity restriction model (Williamson and Christie, 2009): Activity restriction critical to adaptation to major life stress, loss of independence, control and autonomy (Grewal et al., 2006)
- Major depression is highly prevalent (12% of 65+ in Europe), linked to cognitive and physical decline (Ormel et al., 2002), and high economic costs (4% of GDP in OECD countries (OECD/EU, 2018))

Legislation on eligibility rules



Individual level index:
eligibility for local home-
based care (Brugiavini,
Carrino & Pasini 2017)



Survey of Health, Ageing & Retirement in Europe (SHARE)

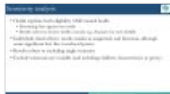
- 7 waves (2004-2016)
- Ages 65 and older
- Belgium, Germany, France and Spain
- 24,857 observations

- Receiving formal home-care (due to being eligible to it), reduces depression score by 2.2 points (out of 12)
 - Causal identification based on the instrumental variable model
 - Clinically relevant «large» effect

- Further result: use of formal home care reduces risk of depression by 12 percentage points (not shown)

- Sensitivity analysis

	(3) EURO-D <i>OLS baseline model</i>	(4) EURO-D <i>Instrumental variable model</i>
Any formal home care	0.155*** (0.041)	-2.214** (0.900)
Any informal care (children)	0.111** (0.020)	-1.18 (1.315)
AP F-test for instruments	16.4***	24.5***
N	24,857	24,857
Sample Average	0.092	0.13



- Baseline: 12% sample at risk of loneliness
- Formal home-care reduces loneliness risk by 5.5 perc. points

	(4) Loneliness caseness <i>IV</i>
Any formal home care	-0.055*** (0.019)
Any informal care (children)	-0.068** (0.024)
AP F-test instruments for FC	26.75
AP F-test instruments for IC	11.27
N	17,524
Sample Average	0.12

IV Estimates	(2)	(3)	(4)	(5)	(6)	(7)
	CASP score	CASP Control	CASP Autonomy	CASP Self realisation	CASP pleasure	CASP median caseness
Any formal home care	1.949	1.635**	0.482	0.476	-0.573	0.161***
	(2.220)	(0.783)	(0.679)	(0.676)	(0.736)	(0.044)
N	20,448	20,448	20,448	20,448	20,448	22,273
Sample Average	38	8.5	9.3	10.4	9.2	0.5

- Receiving formal-care increases control over life, and likelihood of having a better-than-average quality of life.

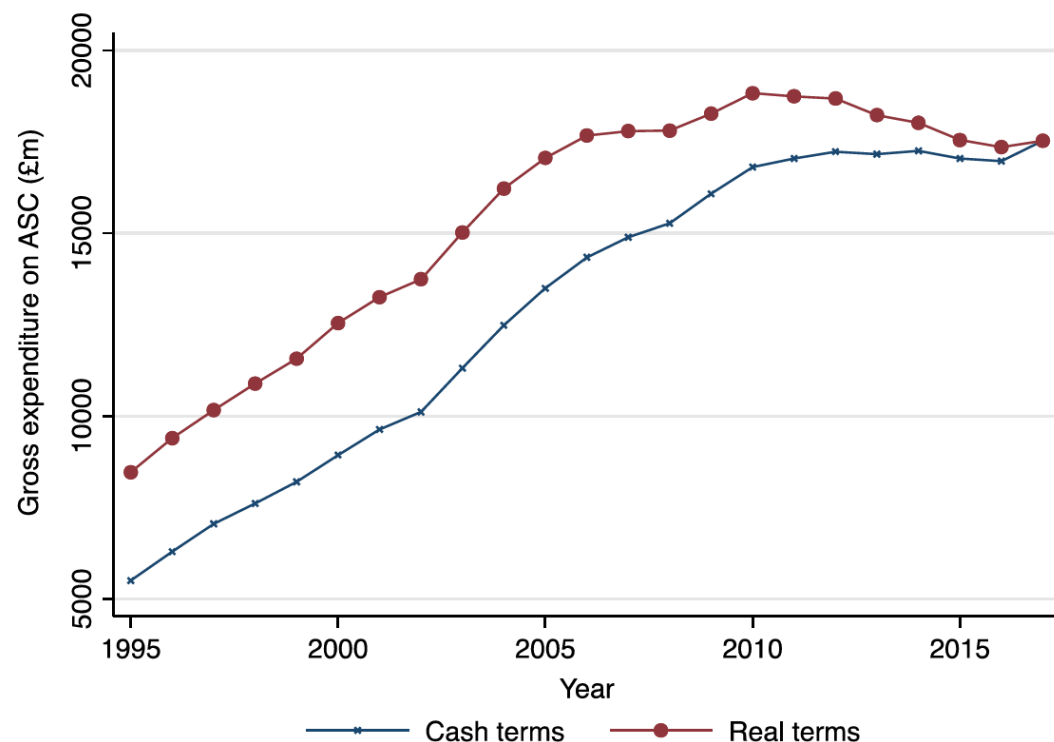
- **Conclusion**

- Large and positive effect of formal home-based LTC on mental health:
 - It reduces severe depressive symptoms by 12 percentage points (from baseline prevalence of 30%)
 - It reduces loneliness and increases sense of control over life
 - Larger effect than traditional cognitive behavioral or other psychological therapy (Wilkinson and Izmeth, 2012; Kampling et al., 2021)

- **Policy implications**

- ‘Ageing in place’ through home-based care is a powerful policy instrument to address mental health and loneliness in older people
- Integration of mental health services or explicit consideration of mental health within home-based care may further maximize impact on mental well-being

- How do changes in **public expenditure on formal home-care** affect the use of **formal home-care** by disabled older individuals in England?



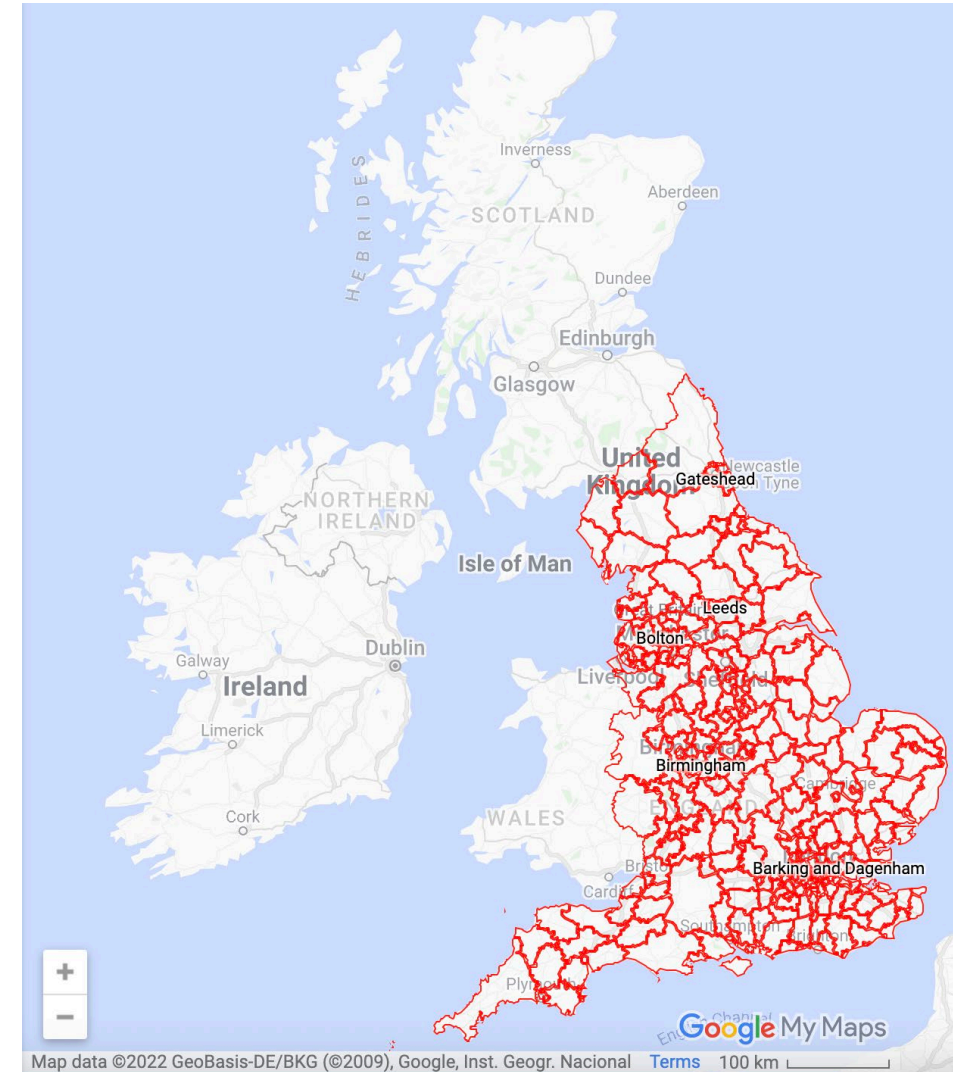
- **Public budget cuts amounted to 31% real-term reduction in per-capita LTC spending between 2009 and 2017** (Crawford et al., 2021)

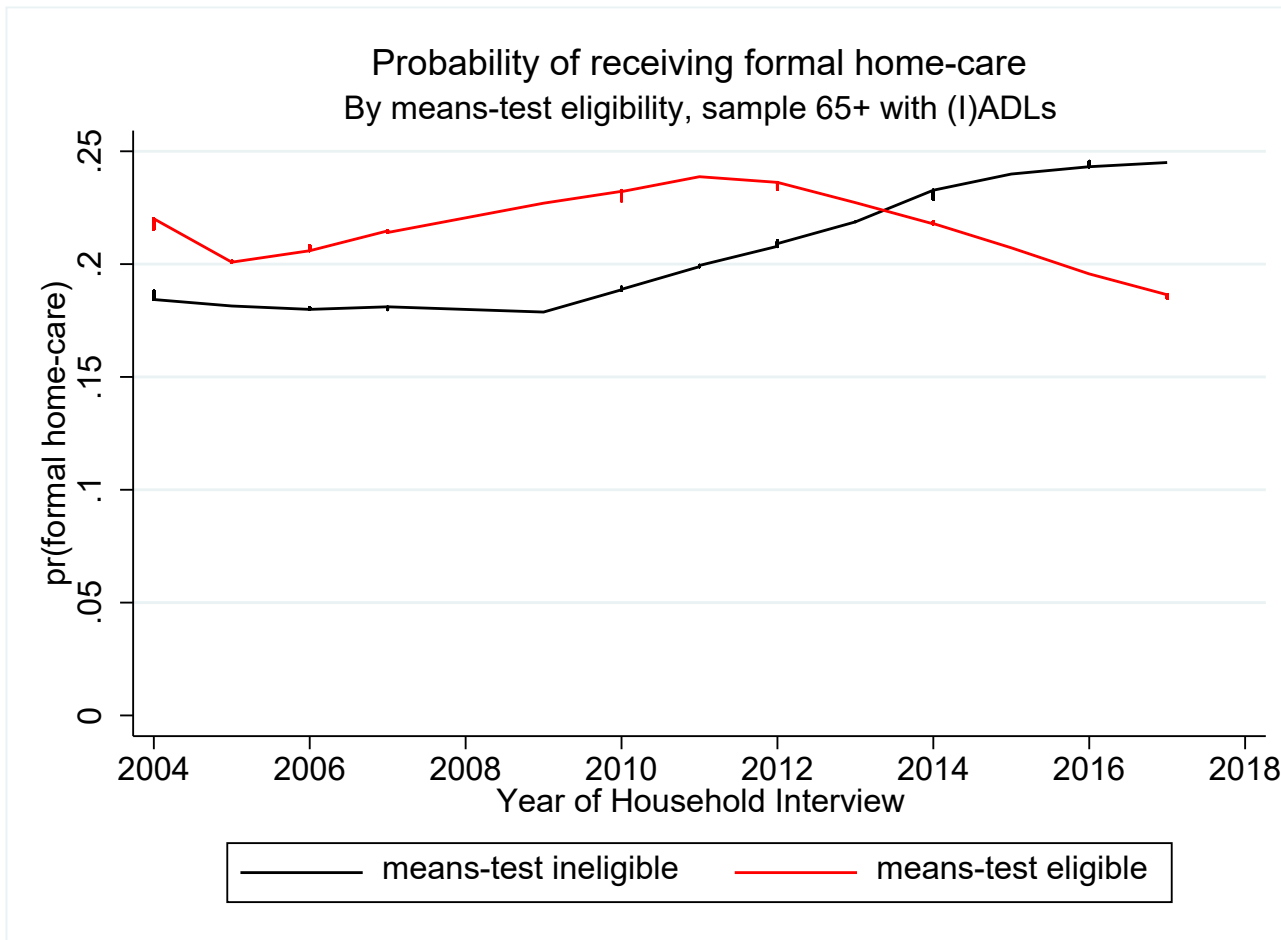
Glasby et al., (2021) A lost decade? A renewed case for adult social care reform in England. *Journal of Social Policy*, 50: 406-437.

Context and methods (more on this tomorrow)

- “**Social care**” administered by Local Authorities but funded from **central government**
- Data on older people from English Longitudinal Study of Ageing (ELSA) between 2002 and 2019
- Augmented with data on public expenditure on home-based LTC at local level
- Identify individuals financially eligible for public LTC, by comparing their assets and income to legislation thresholds
- We estimate how changes in local LTC expenditure relate to changes in people’s use of home-care (care user yes / no)

Map of English local authorities (gov.uk)





Locally-weighted regression of formal care on time, by eligibility status.
Eligibility defined as being financially eligible for social care in every year of the survey.

- **A 30% decrease in LTC spending reduces home-care use by 1 percentage point (among financially eligible)**
 - Large effect given that average care use rate is 8% among the financially eligible pop.
- SES gradient: reductions in public spending do not affect the **“poorest-poor”** (zero-assets) (around 50% of eligible pop.)
- those at the margin of eligibility might drive the results

- **Conclusion:**

- Cuts in LTC spending reduce the probability of using of formal-care (extensive margin)
- We cannot evaluate the intensive margin effect (reductions in the amount of care), but it is likely to be even larger than the extensive margin effect

- **Implications for policy:**

- Results question the assumption that LTC cuts reduce government expenditure at no societal cost
- Cuts in LTC spending are like detrimental for **inequalities in care use** and may increase health inequalities in older age
- Government budget gains of cuts in LTC may be smaller than anticipated because they may increase the demand for other health or social services
- Decisions to reduce LTC spending should formally consider impacts on care use and consequences for health inequalities

The impact of the LTC reform on well-being of caregivers in Japan

Rong Fu, Dung Le, and Yoko Ibuka



- Relatively low SES inequalities in utilizing LTC services
 - A public insurance for LTC utilization with 10% co-insurance; in kind benefit only
- Issue: Financial Sustainability
 - A Reform in 2006 towards a lower level of welfare protection
- 2006 Reform
 - The reform targeted those with lower disability levels
- Impacts on informal caregivers
 - Informal caregivers may be called upon again to provide care
 - If and how would caregivers' well-being be affected by retaking care duty?
- SES Inequalities in caregivers' well-being
 - Are the impacts on well-being heterogenous by caregivers' SES?
- Policy Implication
 - Knowledge on what constitutes an appropriate level of formal care that is both sustainable and adequate



Pre-Reform			Post-Reform		
Care Level	Monthly Upper Limit		Care Level	Monthly Upper Limit	
	JPY	Cumulative % of users		JPY	Cumulative % of users
SL	61,500	17.20%	SL1	50,003	13.90%
			SL2	104,730	29.00%
CL1	165,800	46.30%	CL1	166,920	46.30%
CL2	194,800	54.40%	CL2	196,160	54.40%
CL3	267,500	74.70%	CL3	269,310	74.70%
CL4	306,000	85.40%	CL4	308,060	85.40%
CL5	358,300	100.00%	CL5	360,650	100.00%

Rename SL → SL1
 Upper Limit ↓
 Add SL2, CL1 → SL2
 Not affected

Notes: The monthly upper limit for (P)LTC care recipients are in JPY, where 1 USD ≅ 130 JPY. The Cumulative % of users are derived with respect to points for CL5, respectively.

	N	Impact of the Reform	S.E.	95% C.I.	
Panel A: Main results					
Care intensity	8,194	0.172	0.027	[0.119	0.224]
Any symptom	8,307	0.074	0.033	[0.010	0.138]
Outpatient visits	8,211	0.058	0.032	[-0.005	0.120]
ADLs	7,571	0.025	0.027	[-0.027	0.077]
Self-rated poor health	7,823	-0.003	0.030	[-0.062	0.056]
Stress	8,406	0.024	0.028	[-0.031	0.079]
Panel B: Specific symptoms					
Musculoskeletal system	8,307	0.098	0.031	[0.037	0.158]
Systemic symptoms	8,307	0.069	0.027	[0.016	0.122]
Chest	8,307	0.051	0.017	[0.018	0.083]
Limb	8,307	0.045	0.024	[-0.002	0.093]
Respiratory	8,307	0.045	0.020	[0.007	0.083]
Eyes and ears	8,307	0.035	0.026	[-0.015	0.085]
Digestive system	8,307	0.031	0.023	[-0.014	0.077]
Gum	8,307	0.026	0.019	[-0.011	0.063]
Skin	8,307	0.012	0.018	[-0.024	0.047]
Urinary tract	8,307	0.009	0.018	[-0.026	0.044]
Injury	8,307	-0.006	0.010	[-0.026	0.014]
Panel C: Reasons for being stressed					
Financial strain	7,823	0.047	0.022	[0.004	0.090]
Domestic work	7,823	0.030	0.015	[0.000	0.059]
Social networks	7,823	0.025	0.015	[-0.005	0.055]
Having no free time	7,823	0.014	0.020	[-0.025	0.053]
Marriage, love, and sexual life	7,823	0.005	0.008	[-0.011	0.021]
Reason for living	7,823	0.001	0.015	[-0.028	0.031]
Own health and LTC issues	7,823	-0.001	0.028	[-0.056	0.054]
Family relations	7,823	-0.024	0.023	[-0.069	0.022]
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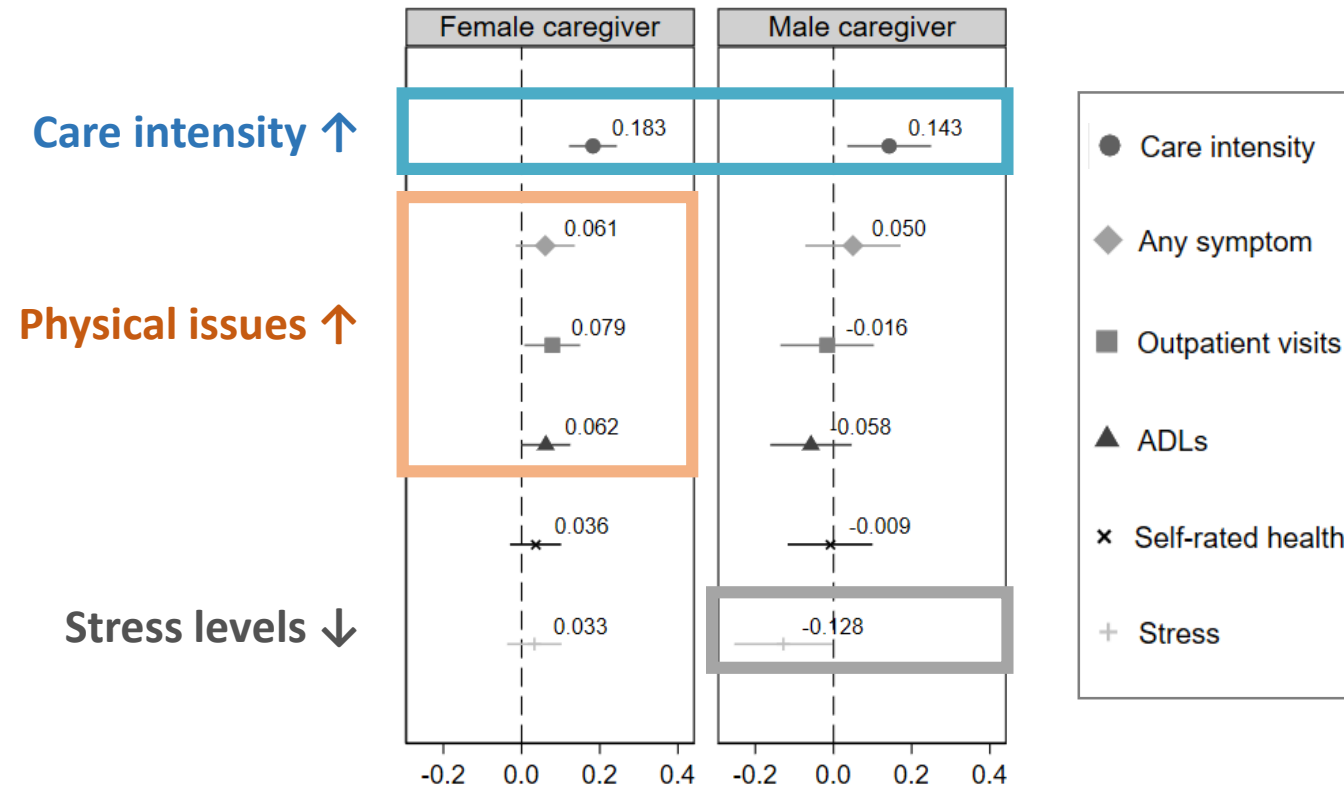
- A: Care intensity ↑ (17.2 pp)
- Physical health issues ↑

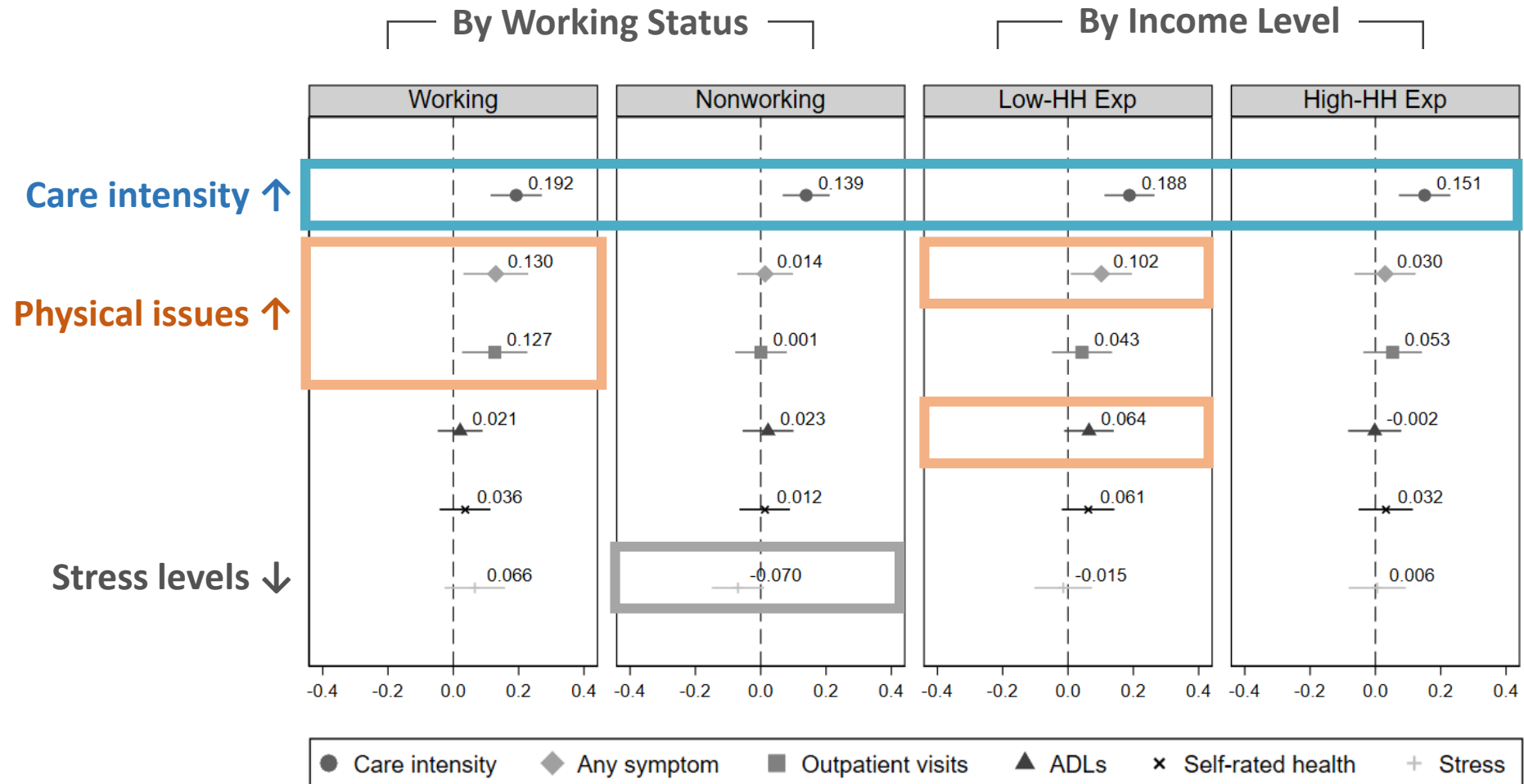
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Urinary tract	8,307	0.009	0.018	[-0.026	0.044]
Injury	8,307	-0.006	0.010	[-0.026	0.014]

- B: Difficulties ↑ in mobility and stability
 - musculoskeletal system, 9.8 pp
 - systemic symptoms, 6.9 pp
 - chest conditions, 5.1 pp
 - ...

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Panel C: Reasons for being stressed				
Financial strain	7,823	0.047	0.022	[0.004 0.090]
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Social networks	7,823	0.025	0.015	[-0.005 0.055]
Having no free time	7,823	0.014	0.020	[-0.025 0.053]
Marriage, love, and sexual life	7,823	0.005	0.008	[-0.011 0.021]
Reason for living	7,823	0.001	0.015	[-0.028 0.031]
Own health and LTC issues	7,823	-0.001	0.028	[-0.056 0.054]
Family relations	7,823	-0.024	0.023	[-0.069 0.022]
Family health and LTC issues	7,823	-0.027	0.033	[-0.092 0.037]

- C: Opportunity costs of caregiving ↑
 - Financial strain, 4.7 pp
- C: Difficulty ↑ in allocating time between caregiving and other household tasks
 - Domestic work, 3.0 pp





- Informal caregivers take on care duties when formal care is reduced, which is detrimental to their well-being
 - It affects various aspects of well-being including mental and physical health
 - Formal care services used by low disability people effectively helped caregivers
- The impact of contracting formal care is not always negative
 - The impact is asymmetric between males and females , working and non-working
- The heterogeneous impact of providing informal care by SES
 - Caregivers who work or with low income are especially susceptible
 - Requiring a comprehensive measure to protect them against financial and health issues
 - Non-working caregivers gain benefit from providing care
 - Policy steering them to caregiving activities may be beneficial to their mental well-being.

- What are the general policy implications of our results?
 - Benefit contractions based on disability levels could increase inequalities in the well-being of caregivers
- Which specific policy instruments increase or decrease SES inequality in care use and caregiving?
 - The reform in Japan reduced upper limits of formal care utilization for low disability level individuals, which increased inequality in the well-being of caregivers
 - Possible instruments
 - A reduction in upper limits of service utilization or an increase in copayment?
 - Needs-based or affordability-based contraction?
 - In kind benefit or in cash benefit?
- What message do we want to convey to (different kinds of) stakeholders?
 - LTCI benefit contractions should consider the average impact on caregiver's well-being as well as the impact on inequality
 - Well-designed target for benefit contractions is necessary to mitigate the adverse impact
 - Considering affordability may be one of the ways

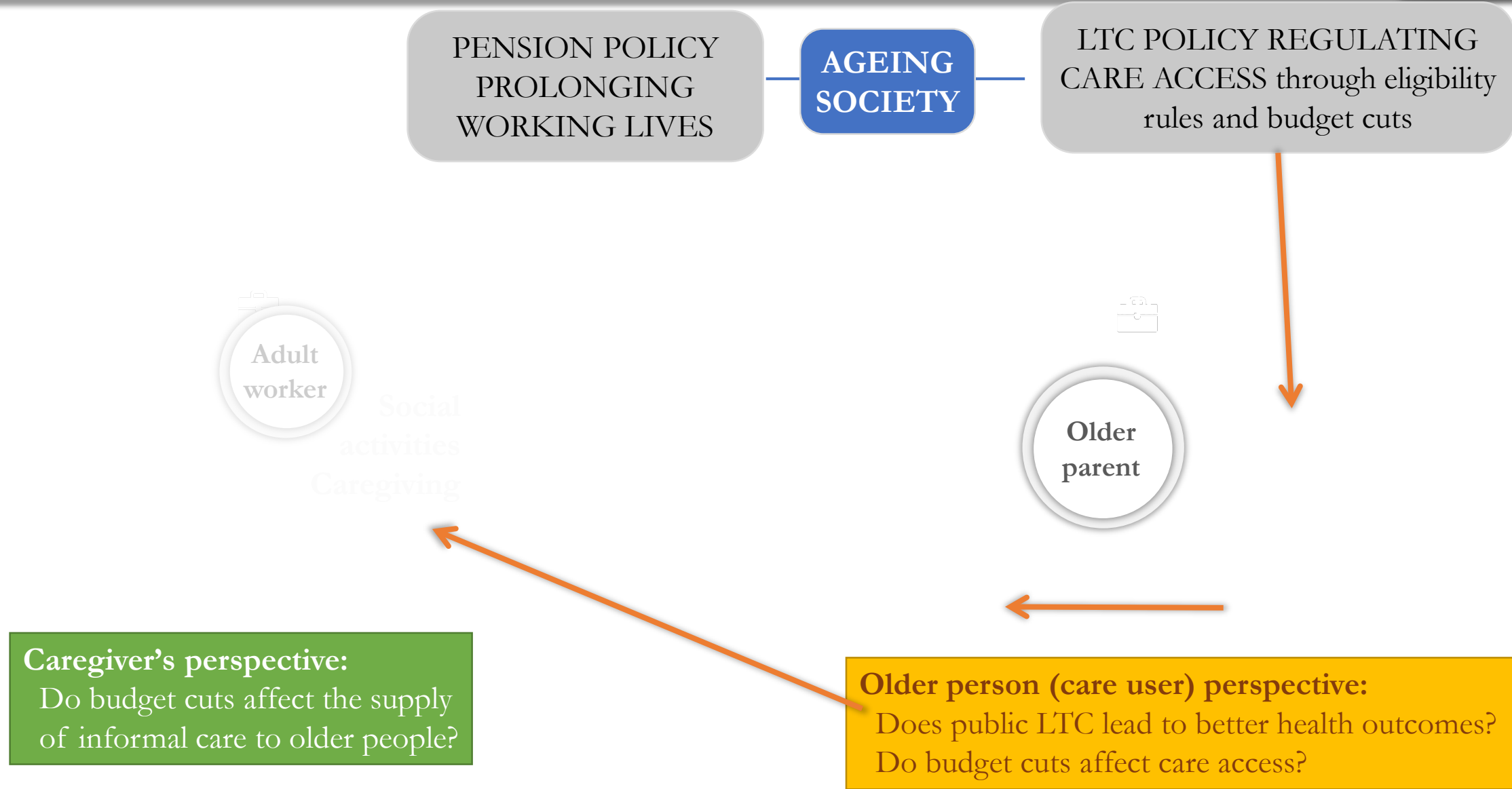


IN-CARE

INEQUALITY IN LONG-TERM CARE

- **For women in partnership**, working longer has no significant effect on partner's care provision.
- Results are robust to controlling for **caregivers' health and income**
- Placebo tests
- Remove respondents who might be less affected by SPA change due to employment history
- Linear account for age and time, and distance to/from SPA

Research questions 2-3: LTC policies, care use & health



Approach: Eligibility rules as instrumental variable



Stage 1

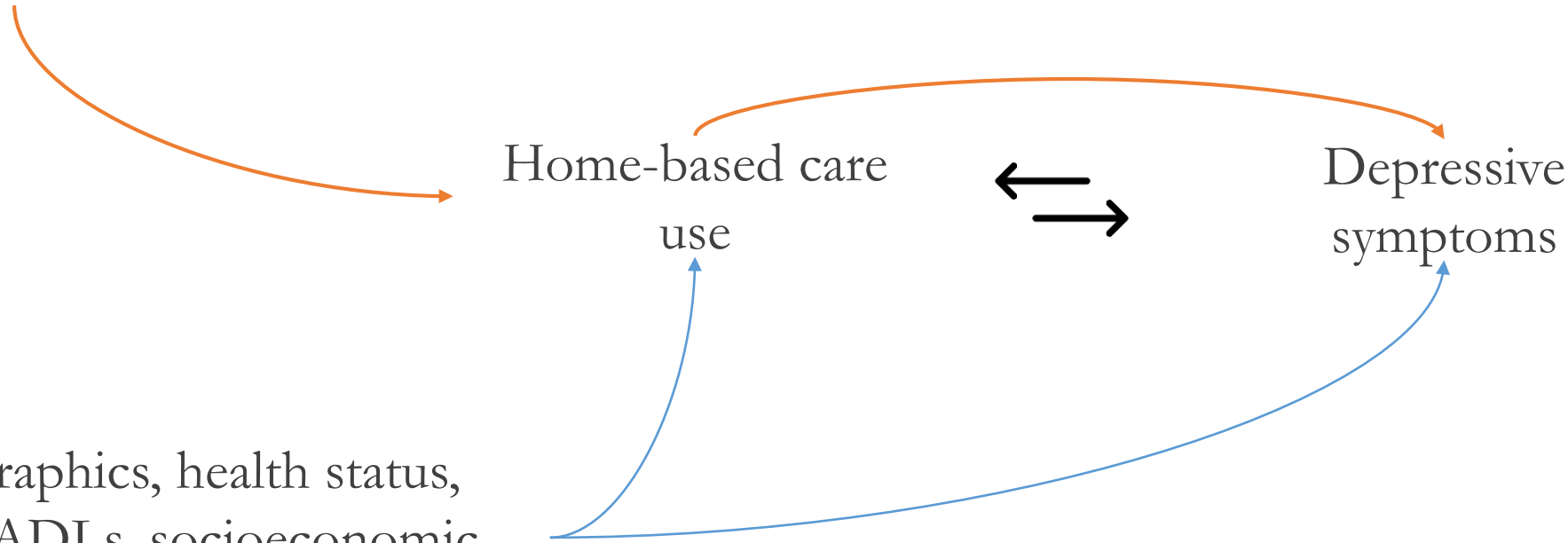
Stage 2

Local laws on LTC
eligibility

Demographics, health status,
ADLs, IADLs, socioeconomic
factors

Home-based care
use

Depressive
symptoms



- Eligibility is mandatory to access LTC programs (Brugiavini et al, 2017)
 - non-linear index of functional and cognitive health (excluding depression).
- Create individual-level binary index in SHARE: being eligible to local LTC program
 - Compare individual health profile to local LTC rules (Carrino et al 2018)
 - Eligibility must be objectively defined in laws
 - LTC benefits need to be monitored and/or targeted towards home-care
- **Within countries**, similar individuals face different eligibility due to specific combination of difficulties
- High heterogeneity **across countries** (and over time): same individual labelled as “eligible” under one legislation and as “non-eligible” under another.



Example: similar health, different eligibility

Profile A	Profile B	Profile C	Profile D
Limited in 2 ADL, 3 iADL	Limited in 2 ADL, 3 iADL	Limited in 2 ADL, 3 iADL	Limited in 3 ADL, 3 iADL
<u>Age: 74</u>	<u>Age: 85</u>	<u>Age: 74</u>	<u>Age: 84</u>
<u>Limitations in ADL:</u> Dressing Bathing	<u>Limitations in ADL:</u> Dressing Transferring	<u>Limitations in ADL:</u> Incontinence Bathing	<u>Limitations in ADL:</u> Bathing Eating Using the toilet
<u>Limitations in iADL:</u> Outdoor movement Using the telephone Managing money	<u>Limitations in iADL:</u> Meal preparation Shopping for groceries Housework	<u>Limitations in iADL:</u> Outdoor movement Shopping for groceries Housework	<u>Limitations in iADL:</u> Shopping for groceries Housework Managing money
<u>Cognitive limitations:</u> Yes	<u>Cognitive limitations:</u> No	<u>Cognitive limitations:</u> No	<u>Cognitive limitations:</u> No
<u>Eligibility status:</u> ELIGIBLE ONLY IN BELGIUM	<u>Eligibility status:</u> ELIGIBLE ONLY IN BELGIUM	<u>Eligibility status:</u> ELIGIBLE ONLY IN GERMANY	<u>Eligibility status:</u> ELIGIBLE ONLY IN GERMANY





Country	Program	ADL	iADL	Others	Informal support	Eligibility threshold
AT	Pflegegeld	✓	✓	C, S		65h/month 60h/month before 2015 50h/month before 2011
	APA	p	P	C		7 points out of 18
BE	INAMI/RIZIV	✓		C		bathing + dressing + moving or using WC / cognition + bathing + dressing
	Vlaamse zorgverzekering	✓	✓	C		35 points out of 81
CZ	Příspěvek na péči	✓	✓	C		3 deficits out of 10
DE	Pflegeversicherung pre 2017	✓	✓	C, S		90m die+ / cognition
	Pflegeversicherung post 2017	✓		C, S		27 points out of 100
ES	SAAD	✓	✓	C		25 points out of 100
FR	APA	✓*		C		2 ADL / cognition
	Aide ménagère	✓*	p	C		bathing / cooking / housework
GB-eng	Social Care for older adults	✓*	p	C, M		2 outcomes
ITALY						
Bolzano	Assegno di cura	✓	✓	C		2h die
Friuli V.G.	CAF/APA	✓		C, M		2 ADL / cognition
Sicilia	Buono sociosanit.	✓	p	M	✓	Invalidity & Living with family
Toscana	PAC	✓*		C, B		2 ADL + cognition + behaviour

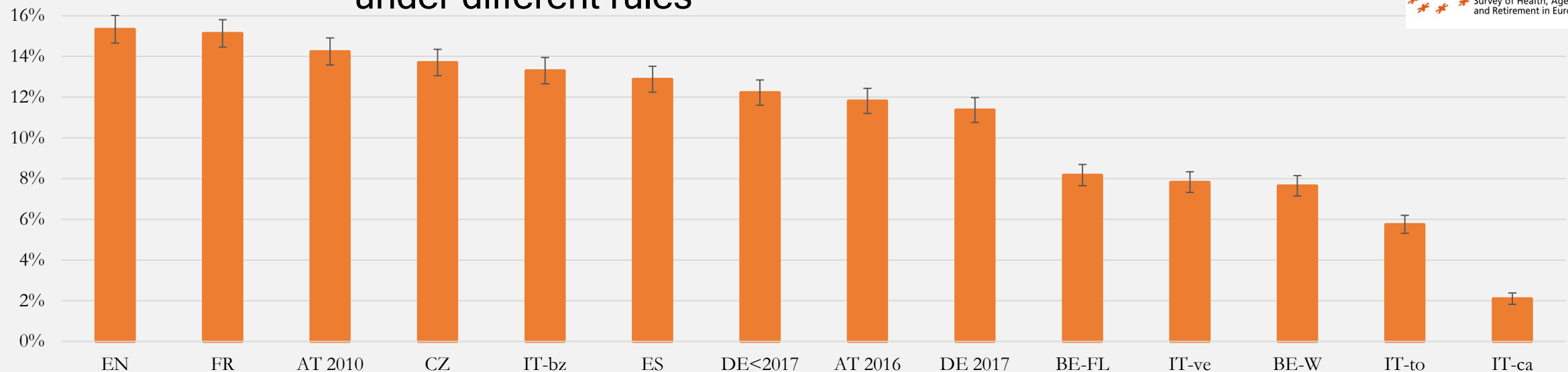
B = behavioural issues; C = cognitive limitations; M = advanced medication procedures;

* Incontinence not included; ** iADL do not matter for eligibility; Part. = partial



How do LTC policies affect care coverage?

Share of 65+ europeans eligible to receive LTC,
under different rules



Note: 22,499 individuals aged 65+, from SHARE wave 6 and ELSA wave 7: AT, BE, CZ, GB, FR, DE, IT, ES. Confidence intervals (95%) are shown.

- Health explains both eligibility AND mental health
 - Reassuring: bias against our results
 - Results robust to heavier health controls, e.g., dummies for each (I)ADL
- Individuals fixed-effects: results similar in magnitude and direction, although some significant lost due to reduced power
- Results robust to excluding single countries
- Exclude informal-care variable (and including children characteristics as proxy)