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WellCARE
Caring Over the Lifecycle

The microWELT platform and its application for care projections with a case-study for Austria

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Organisation

- Objectives
- The microWELT modeling platform
  - Core processes
  - NTA/NTTA accounting
  - Recent publications
- Comparative projections of care systems
- Case-Study
  - The Austrian care allowance system
  - Modeling approach
  - Projection scenarios
- Conclusions

Objectives

- Creation of a tool for projecting the future care demand and supply in the context of socio-demographic change and institutional settings
- Capturing monetary and time transfer flows consistent with the National Transfer Accounting (NTA) and National Time Transfer Accounting (NTTA) framework
- Comparative analysis across four countries (Austria, Spain, UK, Canada): sustainability, vulnerabilities, policy options

- Use of the existing microWELT model, initially developed in H2020 WELTRANSIM project as starting point
- Contributing to the development of MicroWELT as a modular, extendable and refinable modeling platform

The microWELT Platform: core processes

- Socio-demographic microsimulation model integrating detailed population projections with longitudinal NTA/NTTA accounting
  - Interacting population model
  - Continuous time
- Reproduces official population projections but adds detail:
  - Education,
  - Family,
  - Health,
  - Labor status
- Designed as a portable, extendable, refinable platform based on comparative data

The microWELT Platform: NTA/NTTA accounting

- NTA/NTTA Variables
  - Labor Income
  - Taxes, social contributions
  - Public transfers by type: education, health, care, pensions, … other
  - Private transfers (cash, time) within and between families; by type
  - Asset income and saving
  - Private and public consumption by type
- Disaggregation
  - Initially: NTAs disaggregated by education and family type
  - In development: modeling of NTA/NTTA variables on the individual level
  - WellCARE: distinguishing care economy variables: LTC, childcare

Context: Recent Publications

- Horvath et.al. (2023) Socio-economic Inequality and Healthcare Costs Over the Life Course – A Dynamic Microsimulation Approach - Public Health, (219), 124-130
- Böheim et. al. (2023) The Impact of Health and Education on Labor Force Participation in Aging Societies: Projections for the United States and Germany from Dynamic Microsimulations - Population Research and Policy Review, 42, (3)
- Horvath et.al. (2021) The Impact of Education and Health on Labor Force Participation and the Macroeconomic Consequences of Ageing, Bertelsmann Foundation, Monograph/Study
- Spielauer et. al. (2023) The Effect of Educational Expansion and Family Change on the Sustainability of Public and Private Transfers - Journal of the Economics of Ageing, 25
- Spielauer et. al. (2022) Measuring the Lifecycle Impact of Welfare State Policies in the Face of Ageing. Economic Analysis and Policy, 75, S.1-25

Comparative modeling of elderly care

- How much care is needed?
- Where is it provided: nursing home / home care
- If home care: who are the care providers? How much care by provider?
  - Partner
  - Children / Others
  - Formal home care services
  - Care gap?
- Pricing of care:
  - NTA: public and private consumption; public transfers
  - NTTA; time transfers
- How does system adjust? Effects of socio-demographic change on informal supply, care mix, costs, System sustainability; vulnerabilities

Simulation Analysis

- Nursing homes
  - Likelihood as today -> additional places required
  - Changing supply -> change number/composition in community
- Informal Care of “Others”
  - Supply as today -> change in likelihood/h of receipt
  - Receipt as today -> required additional supply -> LF adjustments
- Formal home care
  - Receipt as today -> additional h required
  - Changing supply -> change in gap / h by partner
- Partner
  - Takes residual -> increase in (distribution) h compared today
  - Limitations -> change individual gap

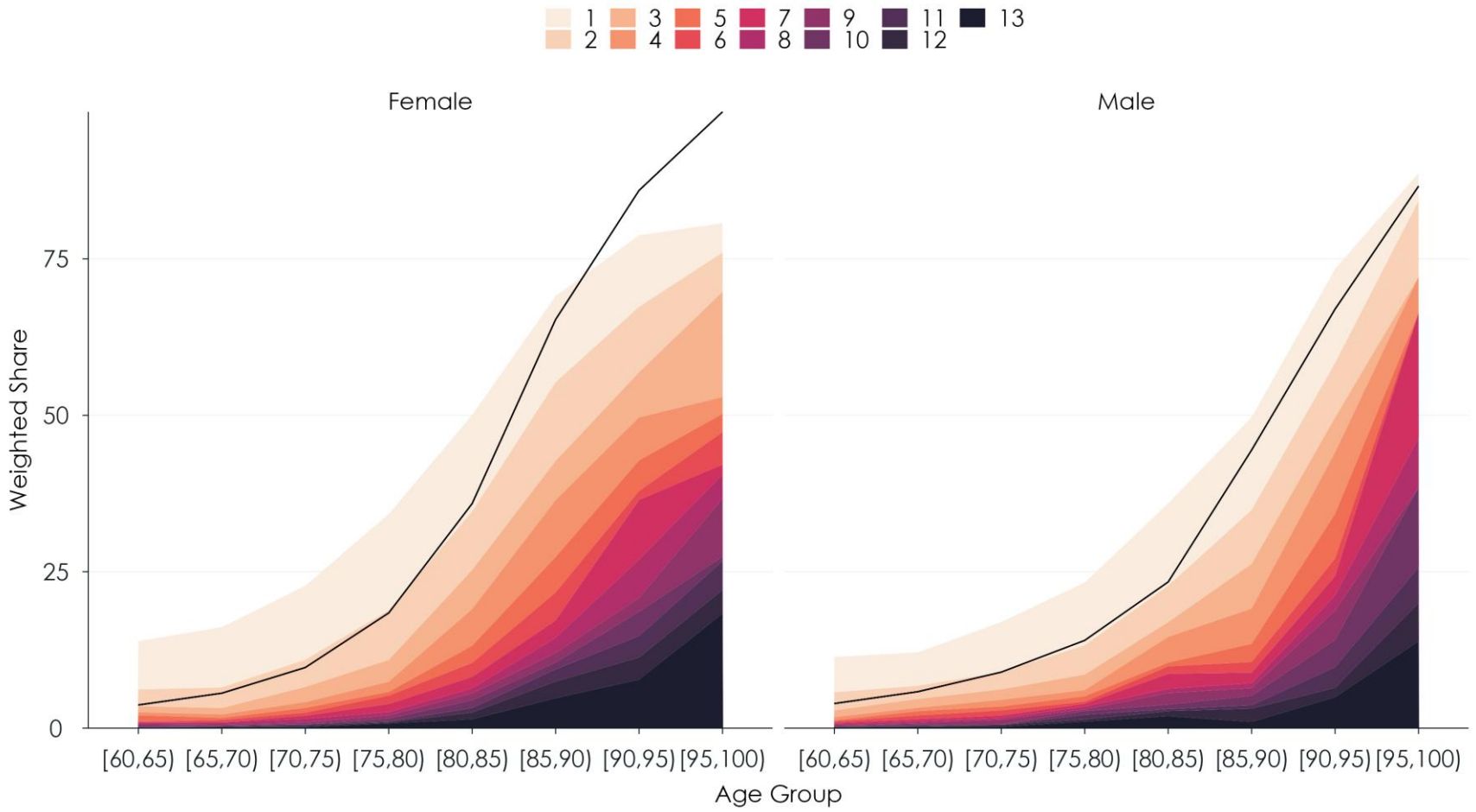
→ Care gap -> total care gap, who is affected → Feedback → →

→ Change costs, NTA, NTTA, … -> economic consequences → Feedback → →

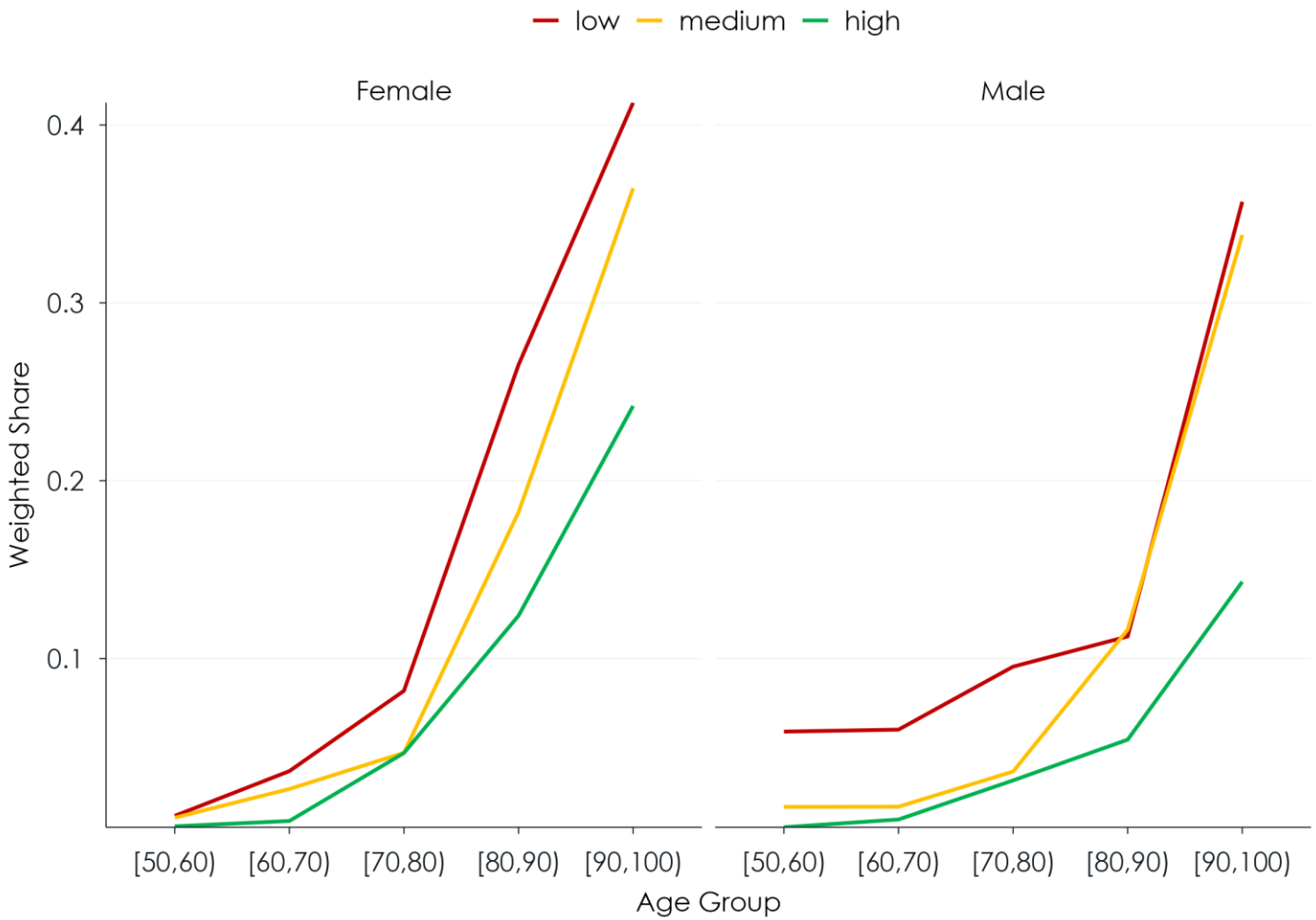
Illustration: Austrian Care Allowance Projection

- Universal care allowance system: Assessment of required hours and severity (if more than 180h) based on (I)ADLs (Instrumental Activities of Daily Living); 7 levels (175€ - 1880€/month)
- Consistency between administrative data (prevalence by care level, age, sex) and survey data (receipt of allowance; number of (I)ADL, levels)
- Estimation of relative differences in receipt of allowance by education, age group, sex (odds ratios) based on SHARE (Survey of Health, Ageing and Retirement in Europe); calculation of prevalence parameters by age, sex, and education which align to administrative data by age and sex.
- Simulation:
  - Expected total individual life-time care allowances of current 50-year-olds, by education; accounting for mortality differences by education
  - Projection of total costs by year

Receiving care allowance and number of (I)ADLs



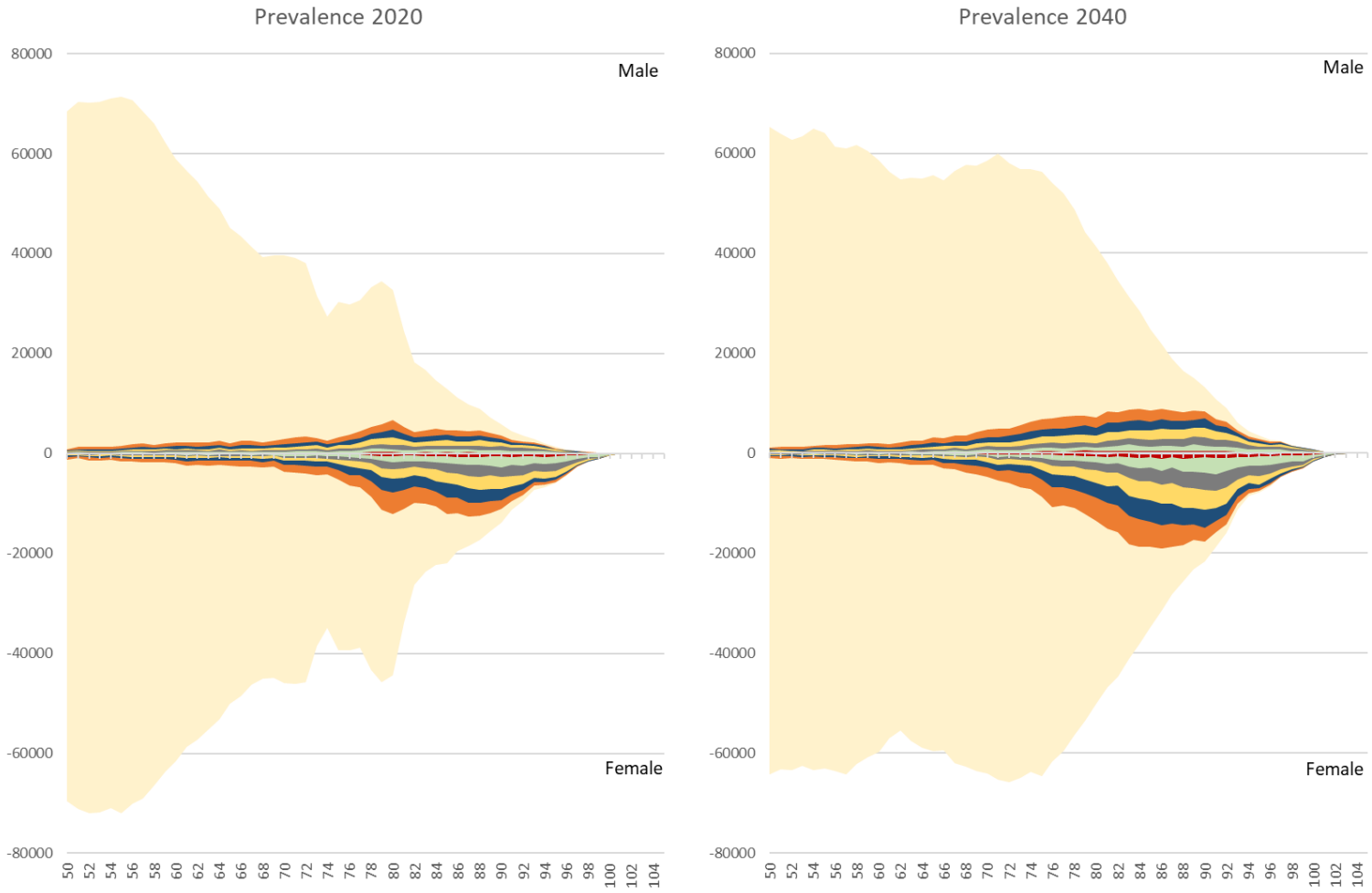
Care allowance by education, age, sex



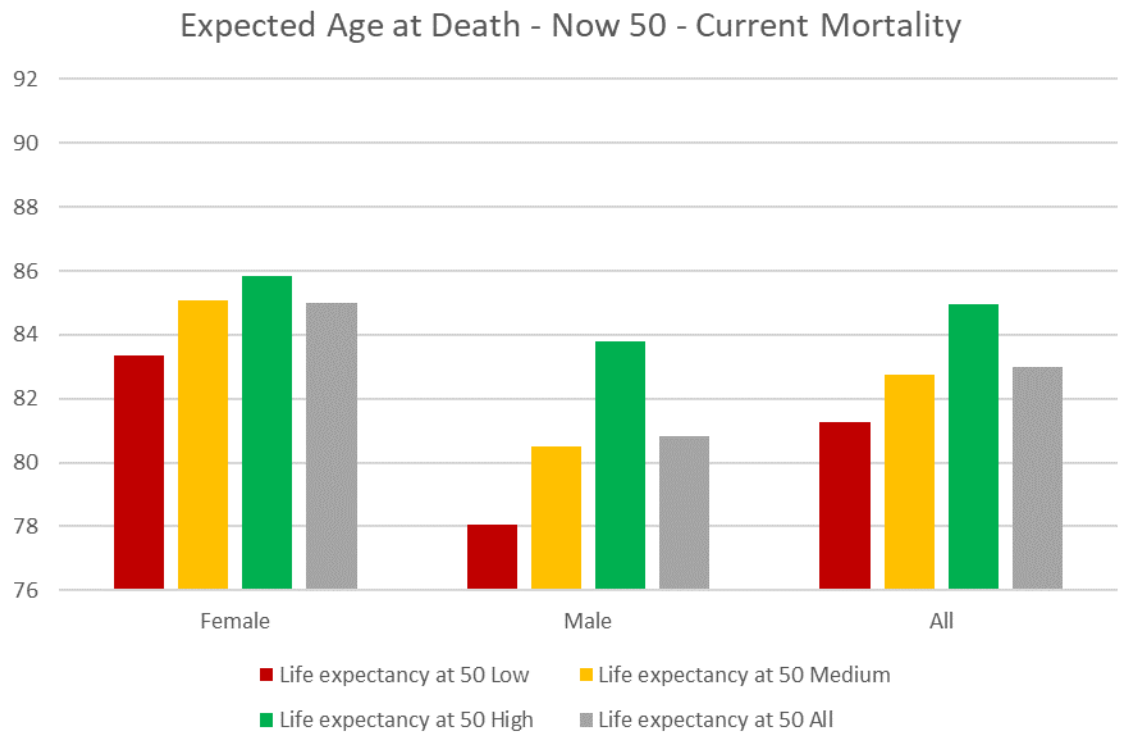
Scenarios

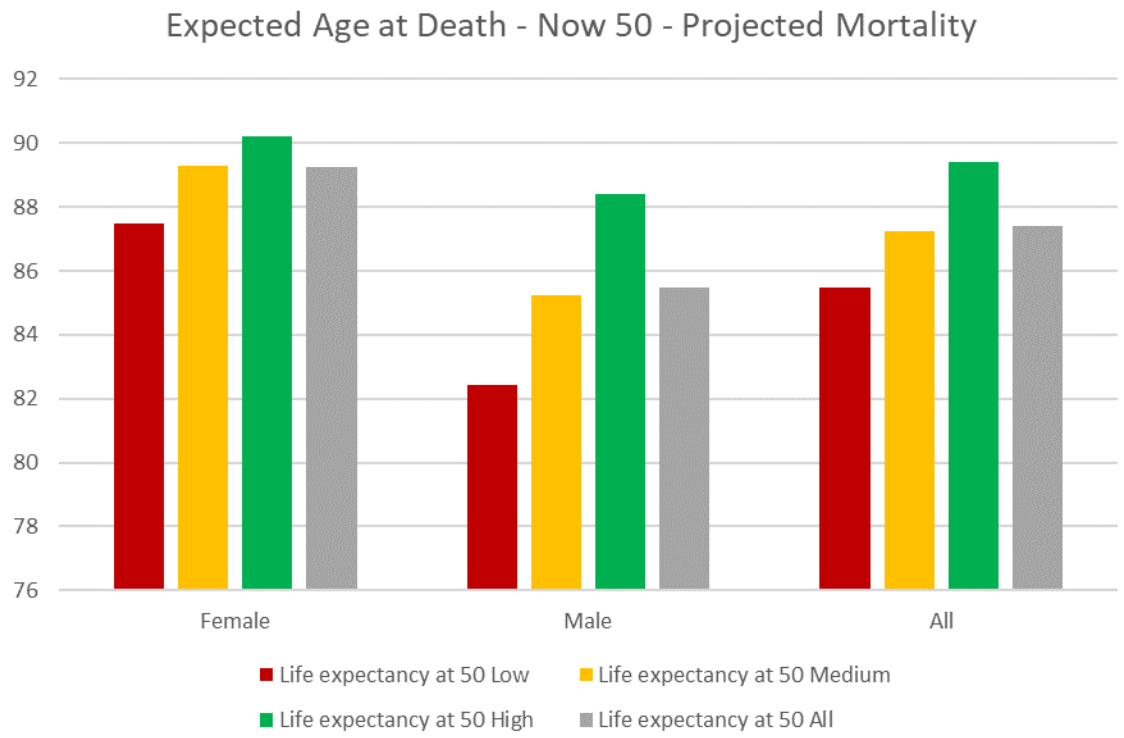
- Scenarios:
  1. w/o increasing life expectancy (as in population projections; +4 years)
  2. w/o accounting for differential care needs by education
  3. w/o changing effect of age; “87 becoming the new 83“

Illustration: Prevalence of receiving allowance

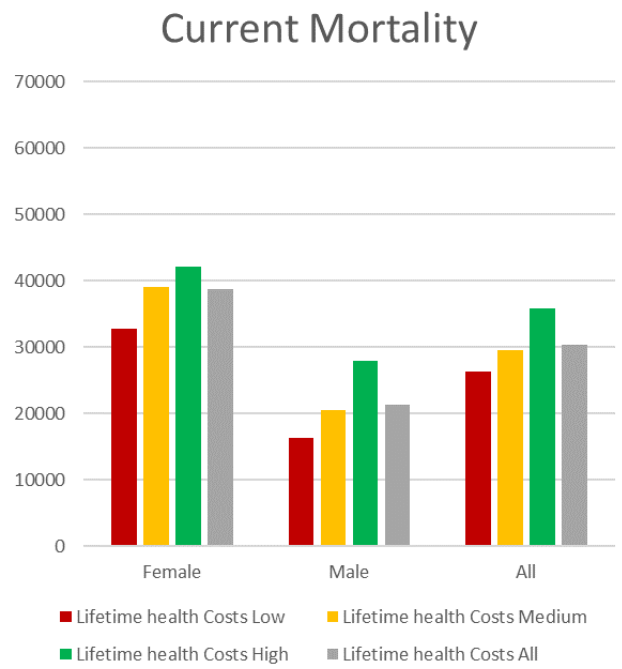


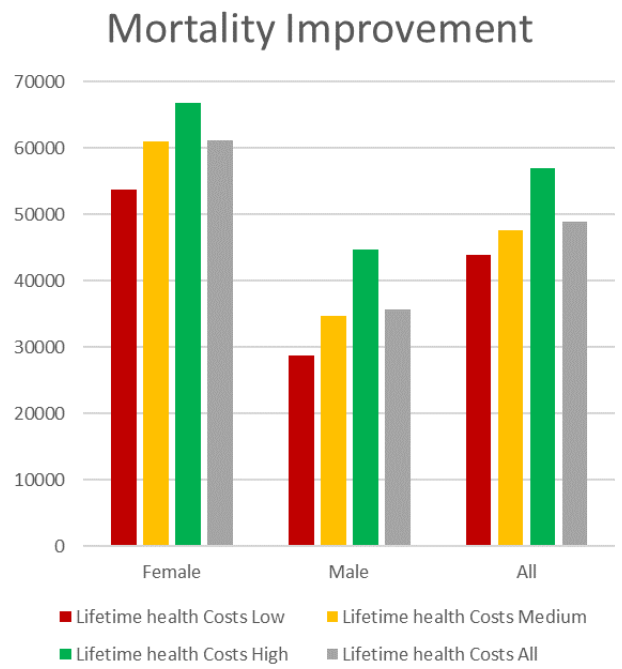
Expected age at death by education, currently 50

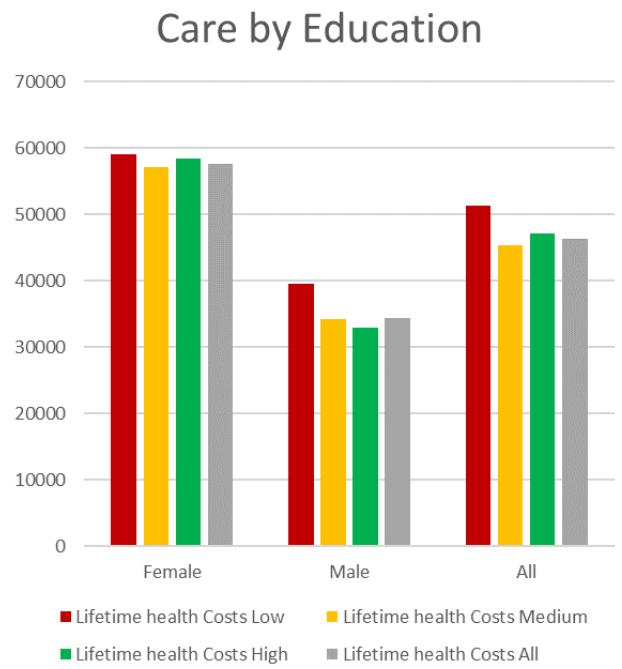


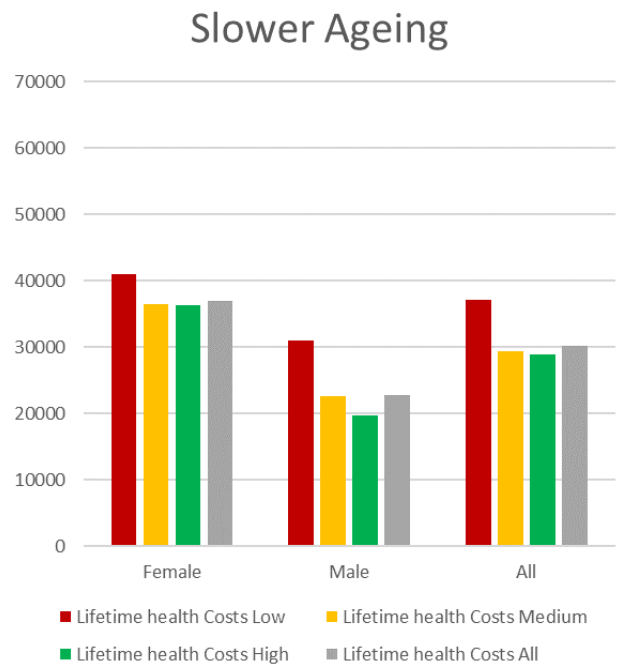


Lifetime Costs Currently 50y Old by Scenario

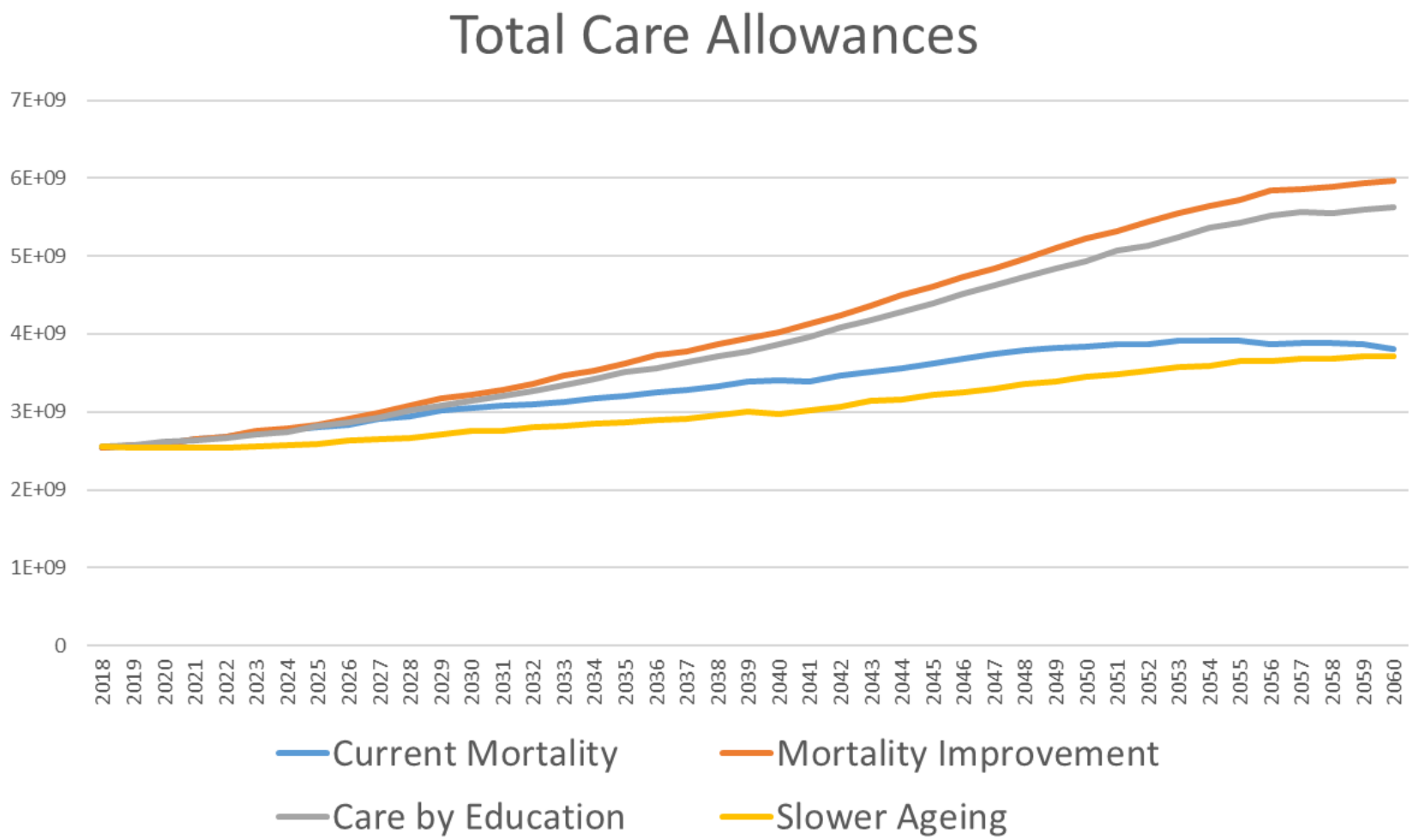








Cost Projections by Scenario



Conclusions

Case study

- Based on currently observed differences in care needs by education, higher life expectancy of higher educated does not lead to higher lifetime costs
- High uncertainty in future care demand – and public costs - especially concerning expansion/compression of morbidity

Comparative project

- Many challenges: data issues, capturing distributional operations of regimes, …
- High uncertainty and complex interplay between socio-demographic change and care regimes, require simulation analysis: what-if, sensitivity
- NTA/NTTA approach combined with microsimulation promising for comparative analysis across very different regimes
- MicroWELT a powerful platform