Can we afford to live longer in better health?

Alternative scenarios for health, life expectancy and social expenditure

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Ageing and AGIR

Ageing:

- Iow fertility, increasing life expectancy, retiring of baby-boom generations
- demographic shift in the coming decades
- public institutions, in particular in the field of health care and pensions, financed on a PAYG basis
- problem of fiscal sustainability

AGIR:

- what gains to expect in lifetime expectancy?
- will the health status of people further improve?
- issues important for future of pensions, health care, labour markets, market for informal care

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WP4 AGIR-project

CPB's WP4:

- analysis of ageing on
 - expenditure on acute health care
 - expenditure on long-term care
 - expenditure on (first-pillar) pensions
 - tax revenues
 - sustainability of public finances
- Special emphasis on four items:
 - death-related costs
 - living longer (increasing life expectancy)
 - in better health (improvements in health)
 - role of these factors relative to other factors

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Death-related costs

High medical spending in last year(s) of life:

- Roos et al. (1987), Lubitz and Riley (1993), Zweifel et al. (1999), Cutler and Meara (1999), McGrail et al. (2000), Hogan et al. (2001), Batljan and Lagergren (2004)
- Share of death-related costs in medical costs stable over time:
 - Lubitz and Riley (1993), Hogan et al. (2001)
- Death-related costs decline with age...
 - Roos et al. (1987), Spillman and Lubitz (2000)
- ...or rise with age:
 - Levinsky et al. (2001), Serup Hansen et al. (2002)

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Life expectancy, medical conditions

No biological limit to life expectancy?:

- White (2002) shows steady increase in life expectancy, WP1 AGIR
- Vaupel (1998) shows huge life expectancy improvements for the elderly and (to a somewhat lesser extent) for females

Medical conditions have improved in the past:

- Jacobzone *et al.* (2000), Cutler (2001, 2003)
- Due to obesity, the future does not necessarily extrapolate the past: Sturm (2002), Sturm *et al.* (2004), Thorpe *et al.* (2004)

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Four scenarios

Strong increase in life expectancy

Living Longer Living **In Better Health** Longer (LL) (LLIBH) No health Improvement in health improvement **Base Case** Living In scenario (BC) **Better Health** (LIBH) Idem, without deathrelated costs (BCW)

Moderate increase in life expectancy

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Structure of the model

- demographic block
- health care expenditure profile split
- relation between health status and labour market participation/expenditure on social security
- relation between health status and health expenditure
- sustainability of public finances

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Health status of the population

- Impact upon medical expenditure:
 - Lubitz *et al.* (2003), WP2 AGIR
- Impact upon labour market participation (through retirement decision):
 - Kerkhofs *et al.* (1999), Börsch-Supan (2000), McGarry (2004), WP3 AGIR
- Closure of the model:
 - Expenditure on social security, revenues from (direct and indirect) taxation, sustainability gap
- Calculations for 15 EU-countries and their (BBP-weighted) average



cpł	Impact of d	Impact of death-related costs (EU-average)			
do		Acute Health Care Expenditure	Long-Term Care Expenditure	Sustaina Gaj	
orksh	Base Case scenario (BC)	1,8	0,9	3,3	
AGIR W	Base Case scenario with flat age profile of death-related costs	1,9	1,0	3,4	
	Base Case scenario without death-related costs (BCW)	2,1	1,0	3,5	
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	Acute Health Care Expenditure	Long-Term Care Expenditure	Sustainability Gap
BC)	1,8	0,9	3,3
vith flat elated	1,9	1,0	3,4
vithout	2,1	1,0	3,5



Living In Better Health scenario: expenditure as % of GDP (EU-average)



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Four scenarios: Overview

BC BCW LL LIBH LLIBH Health care expenditure 1,8 2,4 2,7 3,1 3,4 - Acute health care expenditure 1,8 2,1 2,2 1,1 1,4 1,2 0,7 1,0 - Long-term care expenditure 0,9 1,0 3,5 Pension expenditure 3,1 3,1 4,4 2,2 5,9 Total primary expenditure 5,8 6,2 7,8 4,0 4,3 2,5 3,4 Sustainability gap 3,3 3,5



Sensitivity tests

Effect of ageing on the interest rate and the rate of productivity growth

Effect of a higher income elasticity of health care expenditure

Effect of higher labour market participation

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Health care expenditure, labour market participation

- A lot of uncertainties surround prediction of health care expenditure growth
 - Income elasticity may exceed one (Newhouse (1977), Gerdtham and Jönsson (2000))
 - Medical-technological progress (Acemoglu and Linn (2003), Westerhout (2004))
- Alternative scenario on health care expenditure
 0.15% higher income elasticity of health care expenditure

- Alternative scenario on labour market participation
 - ▶ 5% increase in the rate of labour market participation

Sustainability gaps in alternative scenarios on the interest rate and the rate of productivity growth

Base case scenario3,3INGENUE3,5Four Futures, Regional
Communities3,6Higher income elasticity of
health expenditure4,0Higher labour market
participation3,0

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Conclusions

Living longer in better health will not alleviate the fiscal problems in the EU area. But:

- it changes the composition of public expenditure:
 - pension expenditure will increase faster than health care expenditure
- the uncertainties are large:
 - if substantial improvements in health status fail to come, further increases in life expectancy become a threat

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- The effect of life expectancy and health status on fiscal sustainability:
 - outweighs the effects of interest rate and productivity growth