Centre for European Policy Studies

Thinking ahead for Europe

Report on a research project on Aging, Health and Retirement (AGIR)

Jorgen Mortensen, CEPS

Background and issues at stake

- The biological clock seems to be slowing down and the health of the elderly improving
- Retirement and health care are not “chronologically” determined but depend upon incentives, health and utility of work and leisure
- Trends are better documented in the US than in Europe

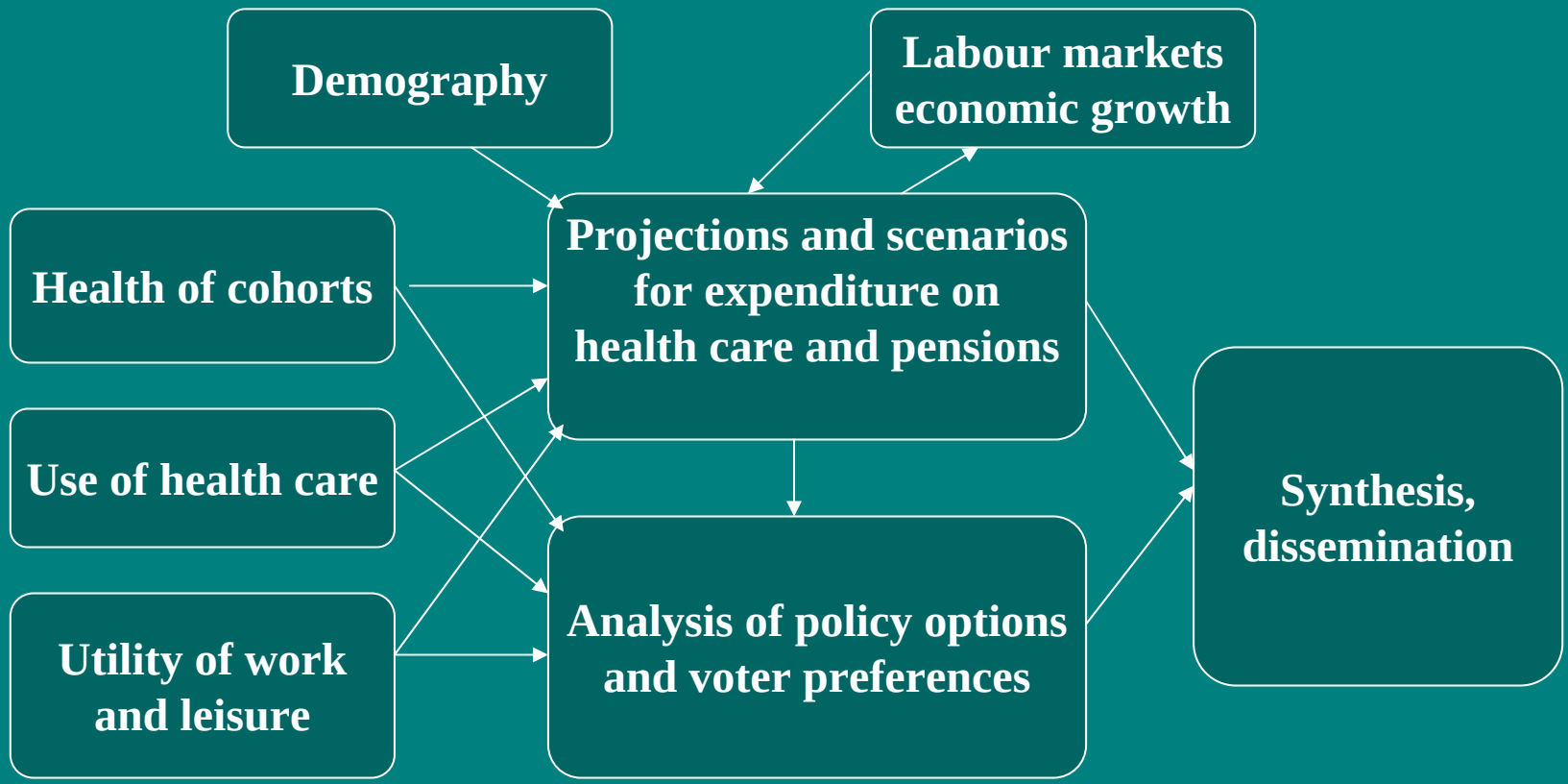
The questions we are all asking:

- Will the long-term improvement in the health of the elderly continue or not?
- Is there a biological limit to longevity?
- Will the healthy elderly (60+) want to work or to retire?
- What will be the future demand for formal health care and what will happen with informal care?

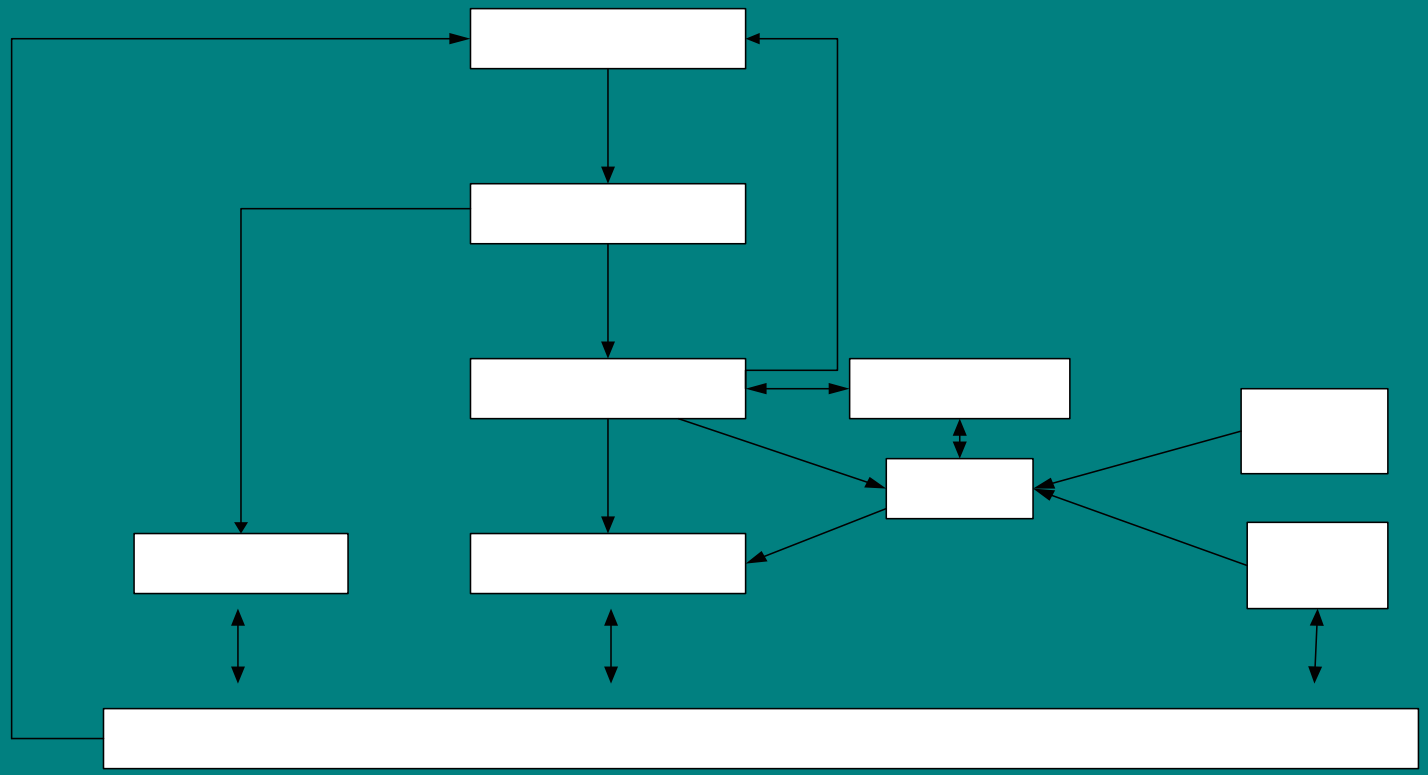
Objectives of the AGIR project

- Establish long-term trends in health of cohorts
- Compilation of data on use of health care and nursing care
- Analyse the utility of work and leisure
- Projections and scenarios for expenditure on health care and pensions
- Implications for public policy and voter preferences
- Dissemination, public debate, information of politicians

Flowchart of AGIR



Health and the Economy



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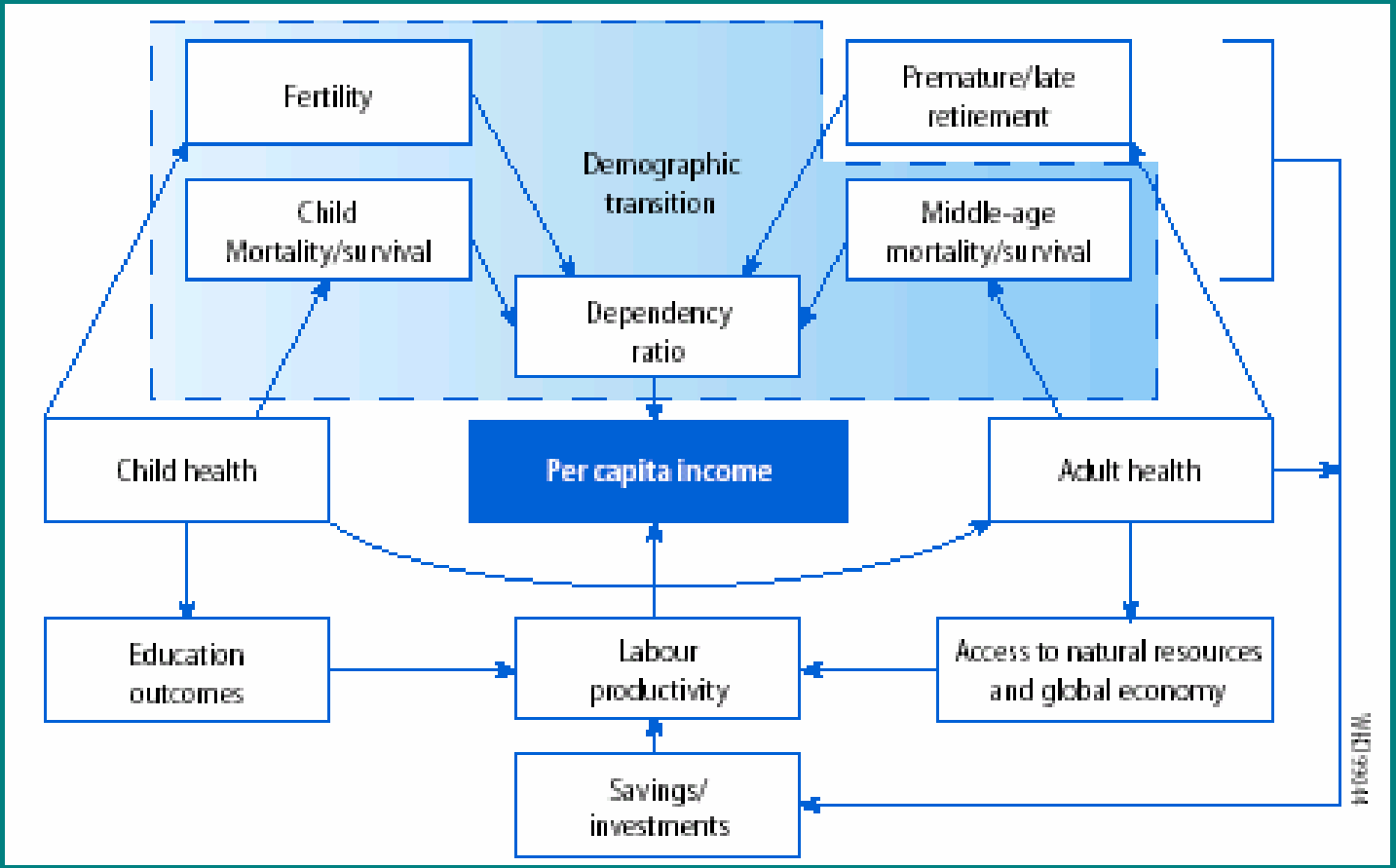
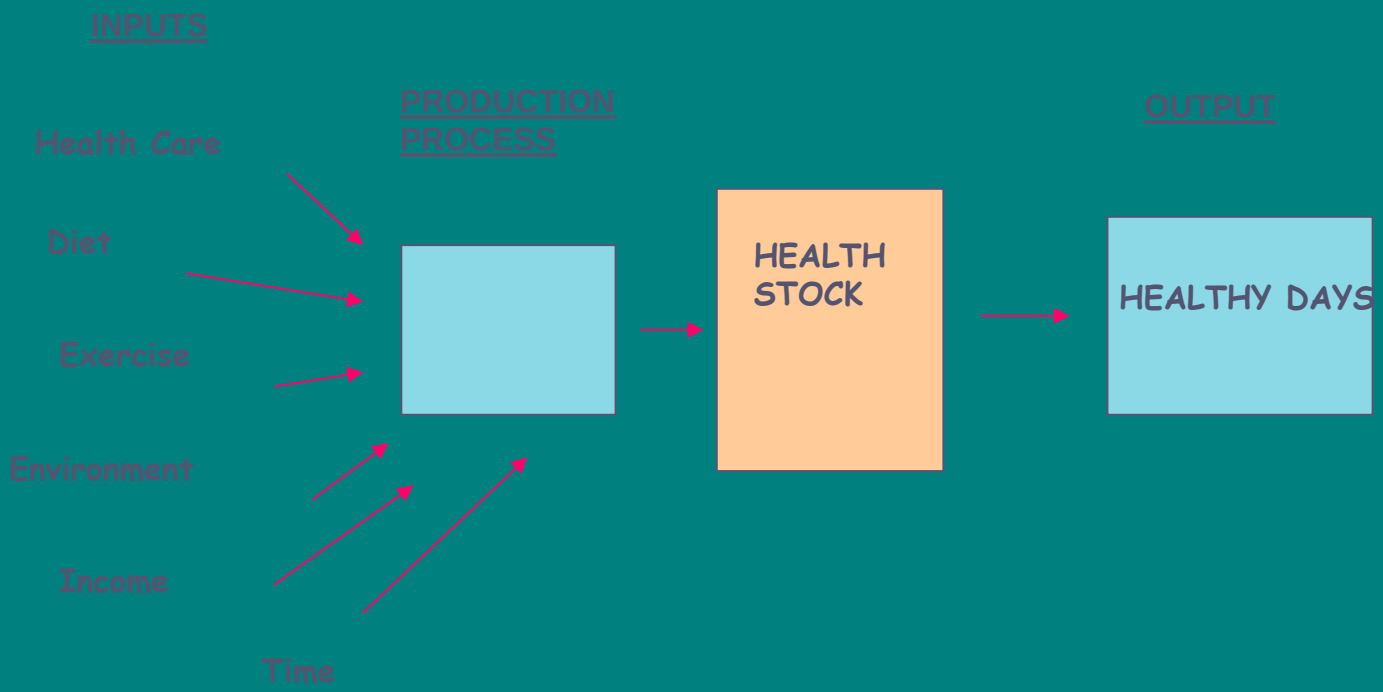
Health and income

(Source: WHO)



Investing in health

(Michael Grosman's model as interpreted by Paul Dolan)



The investment decision

- Maximise life-time utility
- Allocate time between different activities
  - Work vs. Leisure
  - Health « production » vs non-health producing time
  - Health care consumption vs other consumption
  - Subject to declining marginal utility

Modelling health production

- Diminishing returns in health production
- Education increases the efficiency of health production
- A higher income increases the return on health days but increases also the opportunity cost of health investment
- Biological factors associated with ageing raise the price of human capital and cause individuals to substitute away from future health until death is chosen (Grossman, 1972)

The trade-offs under budget constraints

- Public policy: trade-off between prevention and care
- Individuals: trade-off between health production and non-health consumption
  - Excercise
  - Diet
  - Life-style (smoking, drinking, eating)
  - Prevention (health control)

The WHO Diagnosis

- Developing countries: morbidity and mortality mainly due to insufficient nurishment, infectious diseases and parasites
- Developed countries: morbility and mortality mainly due to overconsumption and « self-inflicted » illness:
  - Cancer
  - Traffic accidents
  - Diabetes
  - Dementia
  - Cardiovascular diseases

Typical life course (male)

Males	2000	2050
Life expectancy at birth	75	80
Life expectancy at 65	15	20
Education: 20 years	20	20
Active life:	40	45
Age of retirement:	60	65
Healthy life: 65 years	65	65
Disability:	10	15
Duration of retirement:	15	15

AGIR FINDINGS 1

- In recent decades the decline in mortality and the resulting increase in life expectancy have increasingly been obtained through higher survival rate of the elderly.
- Whether there is a biological limit to life expectancy is still under discussion among demographers but we still expect more and more people to live to higher ages
- Against this, however, obesity is on the rise in most highly developed countries and a continuation of this trends will not fail to be translated into a rise in morbidity and, possibly, to a slowdown of, or even, in some countries, of a halt to the rise in life expectancy.

AGIR FINDINGS 2

- The decline in fertility in EU countries during the last three decades is the results of new techniques of contraception and liberalisation of abortion but is also in a number of countries caused by inconsistencies and contradictions between social and economic developments on one side and culture and tradition on the other side.
- Fertility is therefore not an “exogenous” variable in the social model but one which is subject to influence by the accompanying social and economic policy.

AGIR FINDINGS 3

- The continued increase in the number of visits to health care providers accompanied in most countries by a decline in the duration of hospital stays.
- The prospective decline in the capacity for informal and family care in response to changing family structure and increasing female labour force participation;
- The large, and unavoidable, increase in the number of elderly and the likely huge increase in the objective need for long-term care for the oldest old.
- The associated prospective need for a substantial increase in the demand for institutionalised long-term care with the resulting problems of planning and painful choices as between public and private initiatives.

AGIR FINDINGS 4

- The dual work load on females (gainful employment and house work) gives a strong incentive to retire or to stay out of the labour market, in particular when coupled with the need for providing care to children or disabled or old family members.
- When the value of domestic work is taken into account, the incentives to retire after the age of 55 are still very strong for healthy males: in some countries the option value of retirement for the average wage earner is actually higher than the income from gainful employment.
- For married persons or persons living with another person the incentives to retirement are stronger than for singles.
- Due to the significant differences between EU member states with respect to the detailed functioning of the retirement schemes and the scope for early retirement the incentives to retire show pronounced variations within the EU.

AGIR FINDINGS 5

- A higher life expectancy in 2050 (living longer) can be expected to lead to higher expenditure on health and long-term care and pensions as compared to the EPC baseline scenarios.
- An improvement in health (living in better health) should be expected to lead to both lower health and long-term care expenditure and to lower expenditure on pensions (as people will tend to retired later);
- A higher life expectancy combined with better health (living longer in better health) could be expected to result in somewhat lower expenditure on health and long-term care but to higher pension expenditure. On reasonable assumptions concerning the combination of the two, the net effect could be zero.
- A “worst case” scenario involving higher life expectancy but in worse health (an outcome which on present trends cannot be totally excluded) would imply both higher expenditure on health care and additional expenditure on pensions and would consequently lead to a serious aggravation of the sustainability problem for public finance.

BMI and morbidity

According to Robert Fogel:

A 1 point rise in BMI entails an increase of 10% in the risk of morbidity

(study on Norwegian and US data)

The Waaler diagram (reproduced from Fogel)

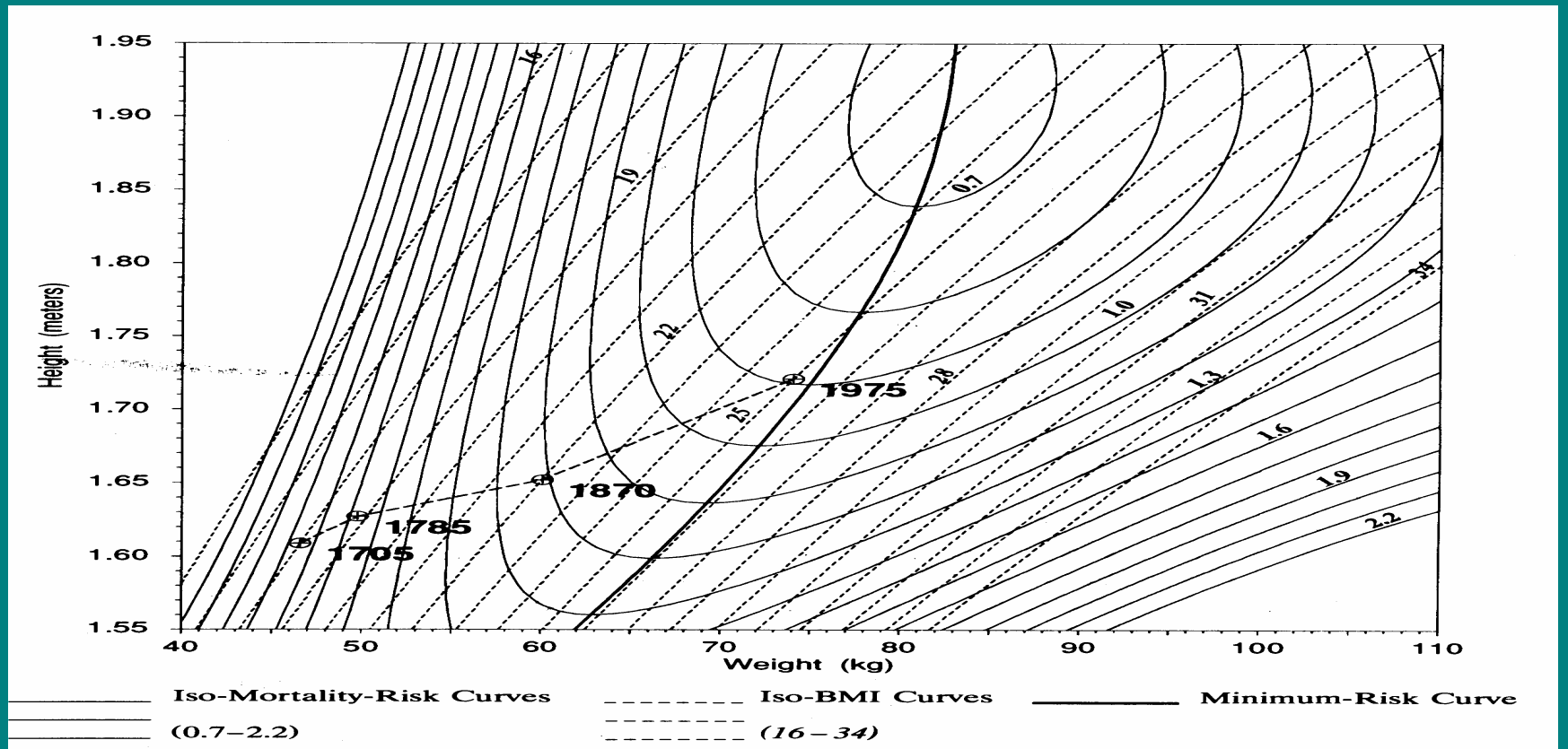


FIGURE 4. ISOMORTALITY CURVES OF RELATIVE RISK FOR HEIGHT AND WEIGHT AMONG NORWEGIAN MALES AGED 50–64 WITH A PLOT OF THE ESTIMATED FRENCH HEIGHT AND WEIGHT AT FOUR DATES

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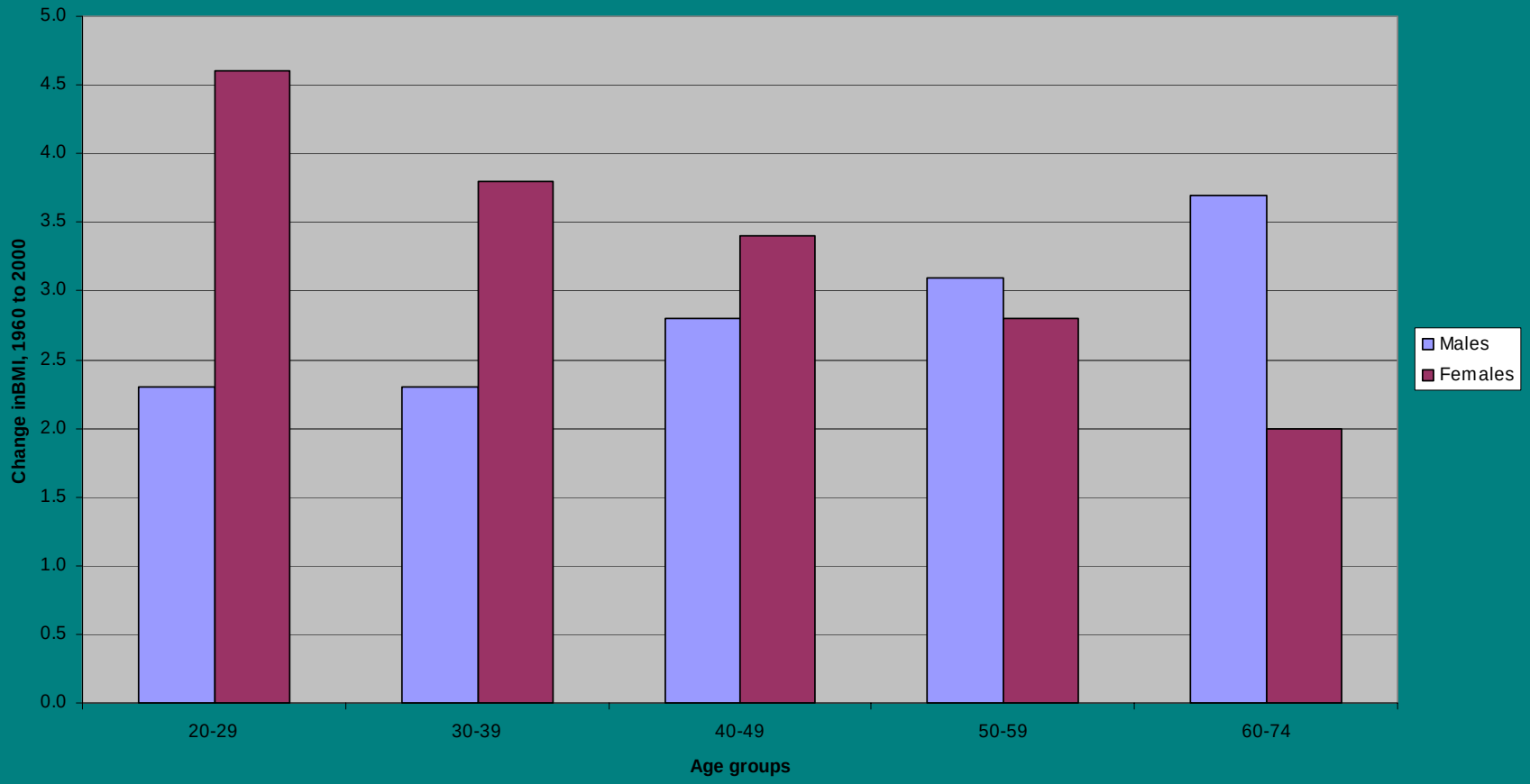
BMI in the US: A sample survey
Change in BMI from 1960 to 2000



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Conclusions:Living longer in better health?

- No clear evidence of a biological limit to LE
- Morbidity in the developed countries is mainly due to life styles
- DALE is not increasing in line with LE
- The increase in height seems to have stalled in some countries
- BMI is rising in developed countries, notably among the young (which are smaller than the preceding generation)

Conclusions: Working more, working longer?

- Sustainability of pension schemes can only be ensured by working longer
- But: utility of leisure is high and rising
- And: the rise in LE is not accompanied by a parallel rise in DALE
- So more of the life course will be spent in disability. But by how much is uncertain.

Policy issues: short term

- How to achieve higher efficiency in health care provision? Competition or regulation?
- How to achieve actuarial fairness in health care provision?
- Where to draw the line between insurance and individual responsibility?
- Clarify the role of the different actors: public authorities, pharmaceutical industry, doctors, nurses, etc.
- Reform health care systems to ensure financial sustainability

Policy issues: Long term

- Create a single market in health care provision
- Create a single market for, and allow more competition in, health care insurance?
- Allocate more public and private resources to investment in health and prevention
- Promote healthier lifestyles and consumption through education and enhanced awareness
- Promote flexibility and competition in long-term health care

WHAT WE HAVE LEARNED FROM THE AGIR PROJECT?

Final conference

10th March 2005

Brussels

Venue:

CEPS, 1 Place du Congrès

1000 Bruxelles

Programme and registration:

http://www.enepri.org/Agir.htm

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Access to the AGIR reports?

http://www.enepri.org/Agir

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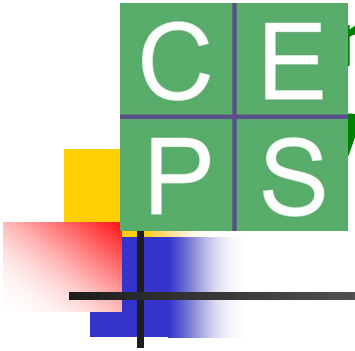
EUROPEAN NETWORK OF ECONOMIC POLICY RESEARCH INSTITUTES (ENEPRI)

More information on ENEPRI membership and research projects (AGIR, DEMWEL, AHEAD, TAXBEN and AIM):

http://www.enepri.org/



Centre for European Policy Studies
Thinking ahead for Europe

Ageing, Health Status and Determinants of Health Expenditure (AHEAD)

6th EU Framework Programme, Policy-Oriented Research, 2.1, Task 4

Jorgen Mortensen, CEPS

AHEAD

Task: "Investigation into different key factors driving health care expenditures and in particular their interaction with particular reference to ageing".

Strategic Objectives:

✓ An assessment of pressures on health spending in the existing EU and in selected candidate countries, looking both at those arising directly from ageing and at those affected by changing incomes, social change and methods of expenditure control.

✓ The development of models embedded in EXCEL spreadsheets for projecting future health spending.

✓ Estimation of confidence limits for these projections.

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Social Research Centre, TARKI, Hungary
Department of Public Health, University of Tartu, Estonia

WORK PACKAGES (WP)

WP1: Health and Morbidity by Age and Socio-economic Circumstances
WP2: Health and Morbidity in the Accession Countries
WP3: Incidence of Poor Health and Long-term Care
WP4: Health status transitions
WP5: Healthy Life Expectancy
WP6 : How do supply and demand factors influence aggregate health care expenditure with specific focus on age composition
WP7: Health Costs Prior to Death
WP8: Development of Scenarios for Health Expenditure in European Union Countries
WP9: Development of Scenarios for Health Expenditure in the Accession Economies
WP10: Dissemination/ WP11: Management and Administration

WP 1 - Health and Morbidity by Age and Socio-economic Circumstances (ESRI)

Duration: 8 months

Objectives: An analysis of the prevalence of good and poor health and the use of medical services by people in good and poor health at different ages and by gender.

Data sources: ECHP

Deliverables:

- ✓ paper describing results
- ✓ workshop to discuss the results

WP 2 - Health and Morbidity in the Accession Countries (CASE)

Duration: 9 months

Objectives

An analysis of the prevalence of good and poor health and the use of medical services by people in good and poor health at different ages in the accession countries

Data sources: representative & household budget surveys in the countries

Deliverables:

✓ Working papers describing the prevalence of different health states and the use made of medical facilities in the countries concerned.

✓ workshop to discuss the approach

✓ workshop to discuss the results

WP 3 - Incidence of Poor Health and Long-term Care (PSSRU)

Duration: 12 months

Objectives

Analysis of the transitions between poor and good states of health and of the socio-economic factors associated with migration from households to institutional care

Data sources: ECHP

Deliverables:

- ✓ working paper describing the findings.
- ✓ workshop to discuss the findings

WP 4 - Health status transitions (IHS)

Duration: 6 months

Objectives

✓ To produce a macro-demographic picture of health states and use of residential care.

✓ To construct transition matrices showing movements of population between different health states in households, and to residential care for narrow age

Data sources: WP 3 & ECHP

Deliverables:

✓ Working paper with results for each country studied.

✓ workshop to discuss the approach

✓ workshop to discuss the results.

WP 5 - Healthy Life Expectancy (NIESR)

Duration: 6 months

Objectives

✓ The construction of transition probabilities (transition tables calculated in WP4) and based on this to construct estimates of health life expectancy, expected time in poor health and expected time in residential care from the transition probabilities.

✓ Comparison of these life expectancy measures with analogous figures (prevalence data of WP1) in order to assess the importance of the use of incidence rather than prevalence data for such calculations.

✓ Estimation of variances and confidence limits for measures of life expectancy

Data sources: WP 3

Deliverables:

✓working paper describing the results for each country.

✓workshop to discuss the approach

✓workshop to discuss the results

WP 6 - How do supply and demand factors influence aggregate health care expenditure with specific focus on age composition (IPH)

Duration: 10 months

Objectives

✓macro-economic analysis of determinants of health care expenditure.

✓spending taking account of a combination of demand and supply factors.

✓to investigate the marginal influence of demographic composition on spending.

✓to study the importance of different methods of financial control as influences on spending.

Data sources: OECD, EUROSTAT, AGIR project

Deliverables:

✓working paper describing the results for the EU countries

✓workshop to discuss the findings

WP 7 - Health Costs Prior to Death (ISAE)

Duration: 7 months

Objectives

✓construction of estimates of health costs in the year prior to death for Italy

✓ comparison of these with existing estimates of health costs prior to death in other European Countries.

✓ assessment of these against the estimates of medical service utilisation (WPI)

Data sources: Hospital Discharge Abstracts, Death Abstracts (Italy) & AGIR project

Deliverables:

✓working paper on health costs prior to death in Italy

✓ working paper on health expenditure profiles for survivors in selected EU countries

WP 8 - Development of Scenarios for Health Expenditure in European Union Countries (NIESR)

Duration: 12 months

Objectives

✓To construct scenarios for health expenditure in the European Union using the results of the earlier WPs in combination.

✓To provide standard deviations and confidence limits for these spending paths so as to reflect the uncertainty in the various factors used in their compilation.

✓To present the results in a manner which provides a full indication of the degree of uncertainty involved

Data sources: WP 6 & AGIR project

Deliverables:

✓ working paper with the results for each country.

✓ EXCEL spreadsheet embedding each country's model.

✓ workshop at which the results are discussed.

WP 9 - Development of Scenarios for Health Expenditure in the Accession Economies (CASE)

Duration: 11 months

Objectives

✓ To produce projections for expenditure on health care in a selection of candidate countries

Data sources: AGIR project & ILO

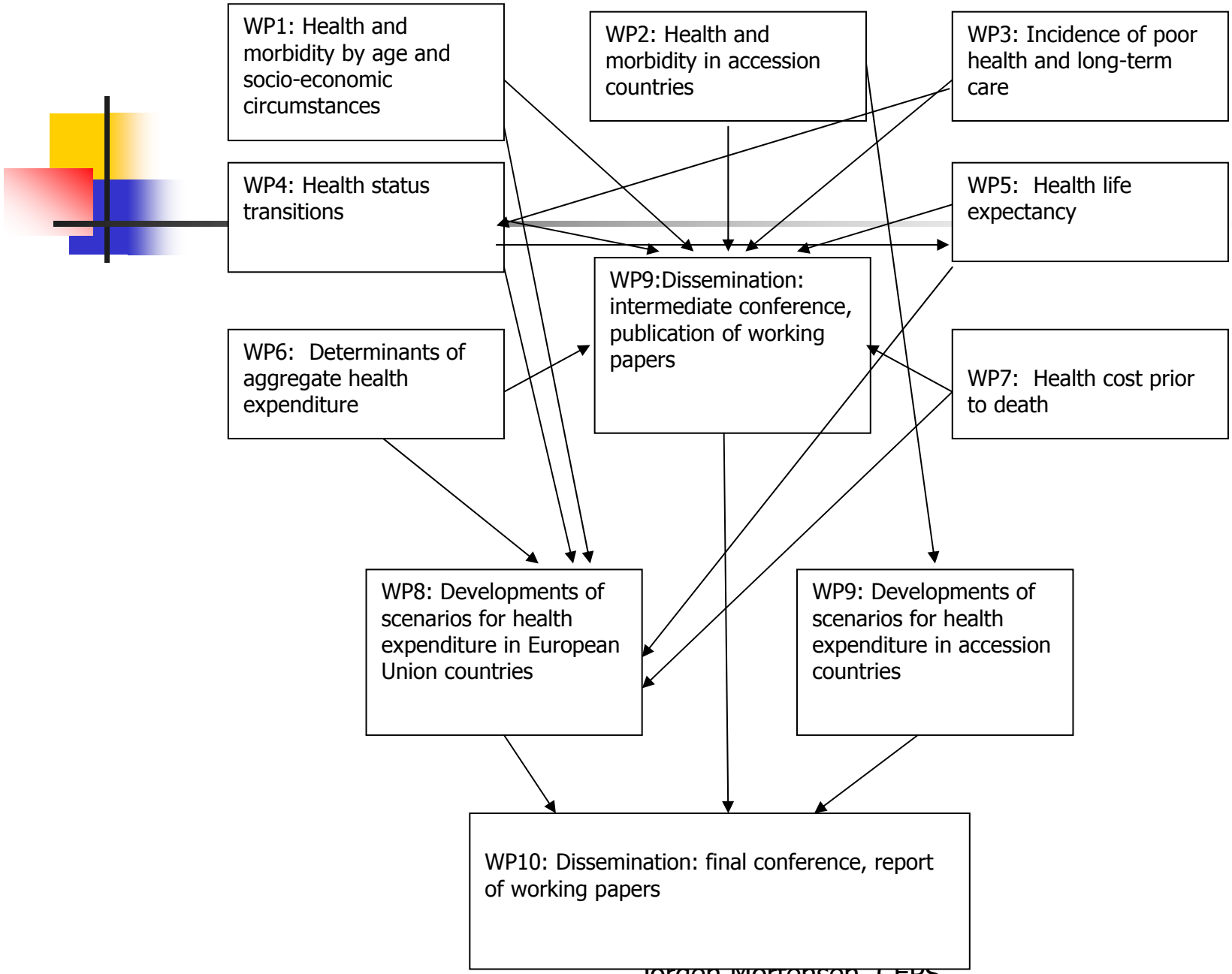
Deliverables:

✓ Working papers describing health spending projections in the countries under consideration.

✓ Workshop to discuss the approach

WP 10 - Dissemination (CEPS)
Duration: 24 months
Objectives
✓To ensure that the findings of the research project are disseminated to a wide audience of policy-makers and others interested in health policy matters.
✓To ensure that work is brought to the attention of suitable journalists with the aim of providing press comment.
Deliverables:
✓conference at which the interim results are presented.
✓conference at which the final results are presented

WP11-Project Administration and Management (CEPS)
Duration: 36 months
Objectives To ensure the coordination and management of the project
Deliverables
✓ Half-yearly meetings of the Steering Committee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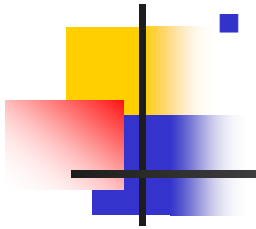
WP2: Health and morbidity in accession countries
WP3: Incidence of poor health and long-term care
WP4: Health status transitions
WP5: Health life expectancy
WP9:Dissemination: intermediate conference, publication of working papers
WP6: Determinants of aggregate health expenditure
WP7: Health cost prior to death
WP8: Developments of scenarios for health expenditure in European Union countries
WP9: Developments of scenarios for health expenditure in accession countries
WP10: Dissemination: final conference, report of working papers

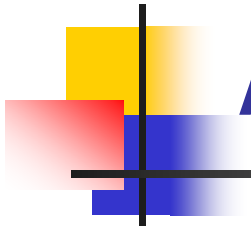
EXPECTED RESULTS

- Comparison of Incidence and Prevalence-based Approaches
  - projections for the future demand for medical services
- Assessment of Macroeconomic Determinants of Expenditure
  - macroeconomic assessment of spending on health in EU countries
- Projections
  - future health expenditure and impact of ageing
- Risk and Reliability
  - margins of error of the projections
- Models to Generate Long-term Projections of Health and Long-term Care Expenditure
- Methodological Developments
  - methods for the construction of demographic transition matrices from disparate and possibly incoherent data sources
  - devise and apply methods for assessing the uncertainty associated with projections of healthy life expectancy, use of medical services and the cost projections following from these

EUROPEAN VALUE ADDED



- Informing policy-makers and the public about the likely pressures on public and private spending arising from a number of possible sources, demographic change, changes in health status and demands for medical services and income effects
- Assessment of the EU members (and some candidate countries) on a comparable basis so that discussions of budgetary risk can be conducted in a common framework
- Impact on 2 important methodological areas:
  - a) Methodology of Demand Projections,
  - b) Demographic Accounting as an Analytical Too
- Stimulation of health policy debate and discussion of the fiscal situation in the EU
- Spreadsheet models for use by policy-makers
- Estimation of confidence limits linked to these projections



AHEAD

3rd Workshop

11 March 2005

CEPS

1 Place du Congrès

Brussels

Jorgen Mortensen, CEPS

Ageing, Health Status and Determinants of Health Expenditure (AHEAD)

6th EU Framework Programme, Policy-Oriented Research, 2.1, Task 4

Started 1 February 2004

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