

Discussion Bruce Newbold's WRSA Presidential "Address Population Aging: what role for Regional Science?"

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Population Aging: some observations

- > Greying of the population
- > Grey – Silver – Baby Boom **Tsunami**
- > **Agequake**
- > **Aging: blessing or disaster?**
- > **And for whom and where?**
- > **Spatial dimension: impact of differences in socio-economic, cultural and natural environment on aging itself and mobility/migration differences by age**
- > **Who should do something and what?**

People's Well-being: changing preferences

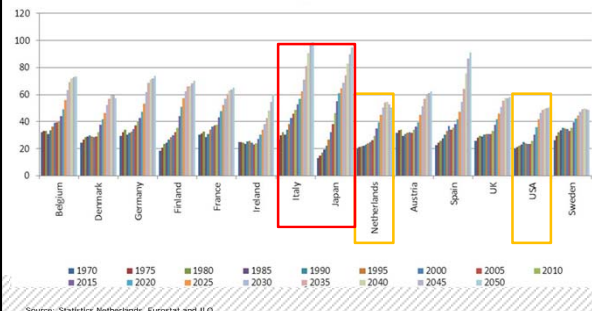
Objective measures

- > Life expectancy
- > Mortality rates
- > Poverty
- > Crime
- > Income
- > Un-/employment
- > Education
- > Gender balance
- > Working hours

Subjective measures

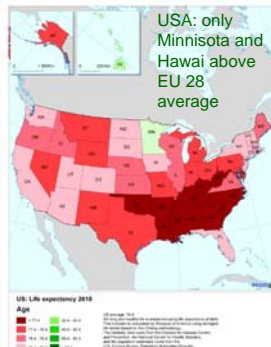
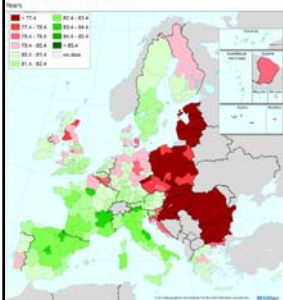
- > Health perception
- > Access to services
- > Material deprivation
- > Safety and trust
- > Life satisfaction
- > Happiness
- > Capabilities
- > Equal opportunities
- > Work life balance

Ageing, i.e. persons of 65 and older as percentage of persons of 15-64 in various countries, 1970-2050



Life expectancy cf. EU-28 Average

Green > 80, Red < 80 years
 Dark green > 85, Dark Red < 77



Source: EU-Commission (July 2014)

Investment for jobs and growth, 6-th Report on Economic, Social and Territorial Cohesion 2

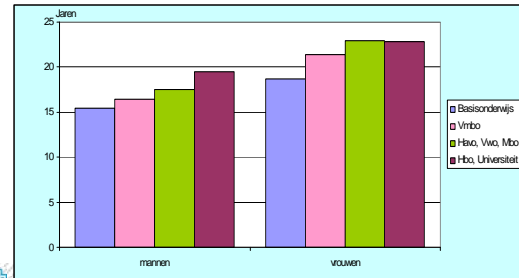
Age and Migration

- > The geography of aging is impacted by the migration of the old
- > But: most seniors do not move
- > **NORC's: Naturally Occurring Retirement Communities**, reflect those places where seniors age in place
- **aging locations are the result of spatial sorting caused by the selective migration of the young?**

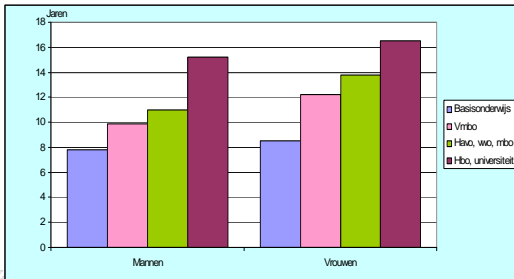
Implications of aging

- > Threatened pensions for those with Defined Benefits as pension plan or with Pay-As-You-Go systems like in Europe (However: Defined Contribution System are also risky when the stockmarket or the housing market collapses)
- > Declining work force: lower growth, less consumption, less taxes
- > Higher health cost

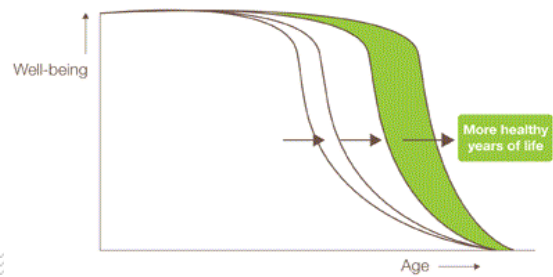
Years to live after 65 by education and gender



Healthy years to live after 65 years by education and gender



Age and Increasing Health Costs? → or changing behaviour to Healthy Aging?



Aging and transportation: states that allow driverless cars public road testing



Aging: how to keep up the welfare level

> Wealth per cap = Labor productivity * hours per worker * net labor participation * population of working age

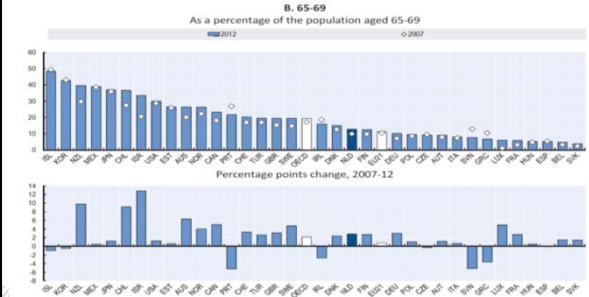
$$\frac{Y}{P} = \frac{Y}{H} \cdot \frac{H}{E} \cdot \frac{E}{P_{15-64}} \cdot \frac{P_{15-64}}{P}$$

> Y = GDP, P = total population, H = hours worked, E = employed persons, P₁₅₋₆₄ = population of working age

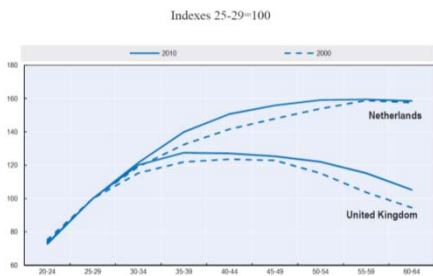
Possible solutions

- > Increase retirement age
- > Increase participation rate
- > Increase working hours
- > Increase labour productivity
- > (Im)migration?
- > Interactions productivity with age, participation and working hours?
- > Regional specific approach?

Employment rates 65-69: more older workers



Age – Wage (Productivity?) profiles: NL and UK



Aging and Labour Productivity: two hypothesis

1. Productivity measurement at the individual level: labor productivity peaks between 30 and 50 years of age → **Prime age more productive**
 2. Productivity increases with older age due to more experience. Evidence from the Horndal steel plant in central Sweden with high growth rate in productivity while the personnel was aging (50% over 50 years old) and no major investments → **basis for Kenneth Arrow's learning-by-doing argument**
- Plant level productivity is not equal to the sum of individual productivities: optimal mix of age groups

Many challenges for Regional Science

- > Spatial Scale: nation, region, count, neighbourhood
- > Migration choices by age and education
- > Human behaviour: healthy aging and education
- > Labour hours and labour productivity: mix of education, experience and aging (learning-by-doing argument)
- > Transportation, technical change (self driving cars, etc?)
- > Location and Spatial Planning:
 - 1. How will aging transform places?
 - 2. How do locations adapt to aging?

→ **Make aging a blessing for everyone and everywhere!!**

Make aging a blessing for everyone and everywhere!
Thank you for your attention!