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Is mortality variation by region of birth an issue for mortality projections? The case of Sweden

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BACKGROUND



Swedish population projections

- Fertility, immigration and emigration are estimated by age, sex and by country of birth (7 groups)
- Mortality estimated by age and sex only
- It has been discussed whether assumptions on future mortality should also include the same groups of foreign-born and native-born



Arguments for including groups of foreign-born in mortality projections

- The proportion foreign-born in the Swedish population has increased steadily, from 6 percent in 1970 to 16 percent in 2014
- The foreign-born group is projected to become 22 percent in 2060
- The interest has increased as regards all demographic events in relation to various groups of foreign-born



Aim and questions

- One aim of various demographic analyses made by Statistics Sweden is to develop the population projections
- Are there differences in longevity between various groups of native and foreign-born?
- If there are differences in mortality between groups, are there any changes over time?
- Are differences between various groups large enough to be considered for mortality assumptions in the Swedish population projections in the future?



Classification based on country of birth

- Sweden
- Nordic countries
- EU countries, except Nordic countries
- Other European countries

Non-European countries based on Human Development Index (United Nations):

- High (Iran, Chile, Lebanon)
- Medium (Iraq, Thailand, Syria)
- Low (Somalia, Afghanistan, Ethiopia)



Data

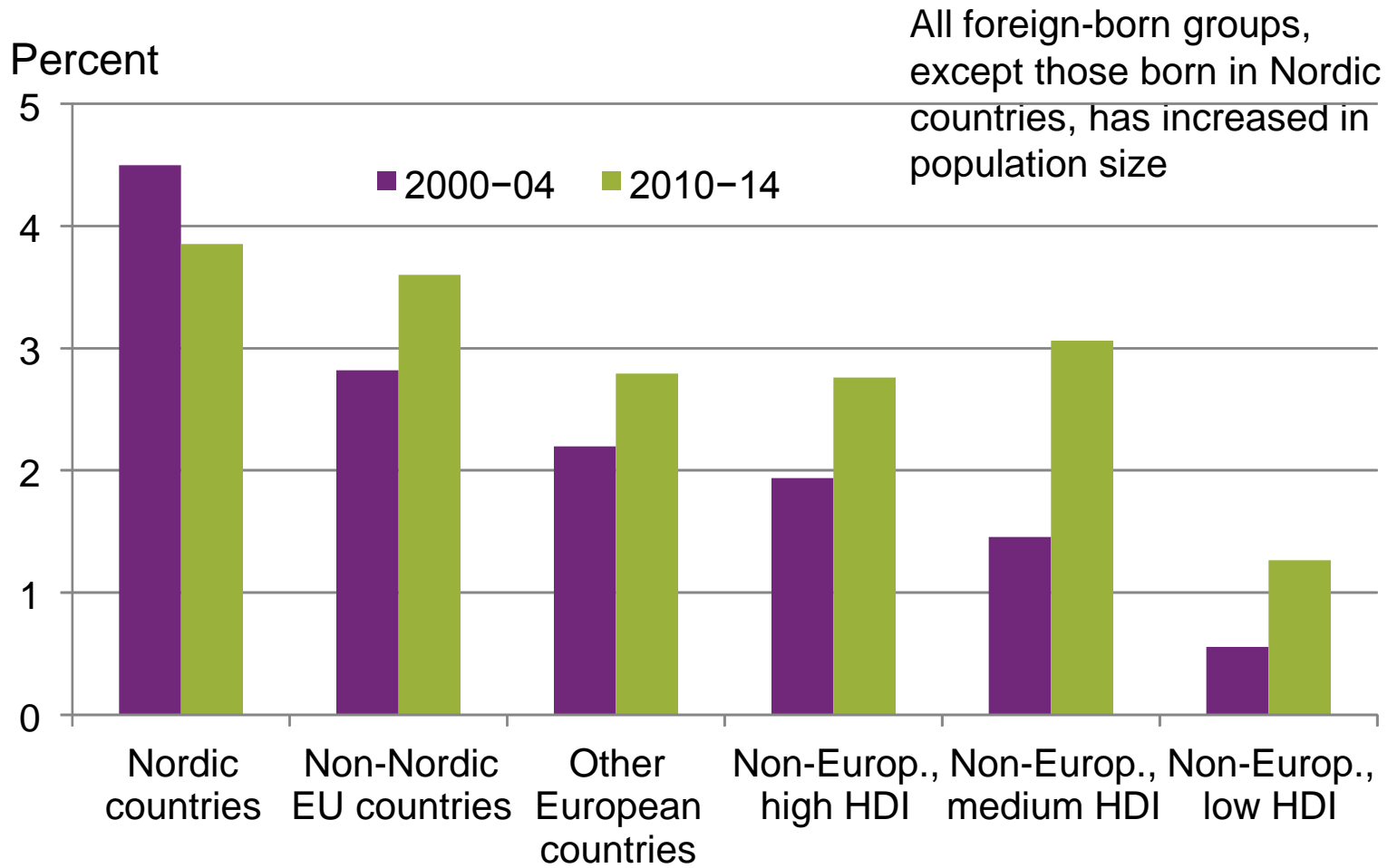
- The Swedish population registry for two 5-year periods, 2000–2004 and 2010–2014
- Ages 30+
- 28.5 million person-years and 460,000 deaths in the period 2000–2004
- 30.4 million person-years and 446,000 deaths in the period 2010–2014



Compositional changes of foreign-born in the population aged 30+



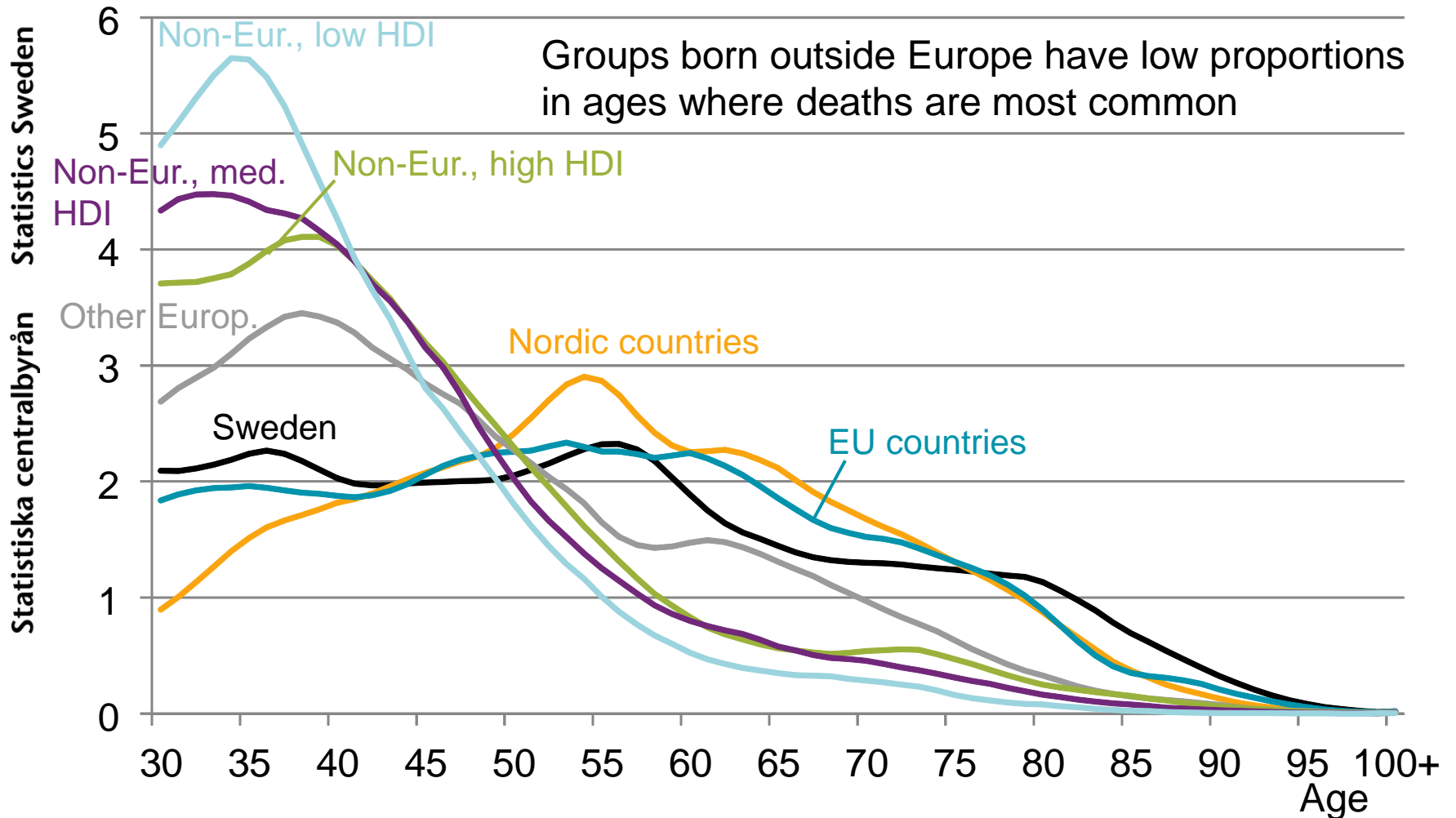
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Age distribution by region of birth 2000–2004



Percent



Method

- Common life table calculations
- Low number of observations and deaths in a number of groups in old age → all groups were assigned the same population mortality risks at age 90 and over
- Estimations of the ages that contributes to survival differences between groups





FINDINGS



Life expectancy at age 30 for women by region of birth, period, and change between periods

Region of birth	2000–2004	2010–2014	Change
Sweden	52.9	54.2	1.3
Nordic countries	51.6	53.0	1.4
EU countries, except Nordic	53.6	55.1	1.5
Rest of Europe	52.4	53.9	1.5
Non-European, high HDI	55.4	56.1	0.7
Non-European, medium HDI	54.3	55.5	1.2
Non-European, low HDI	54.8	55.8	1.0
Total	52.8	54.2	1.4

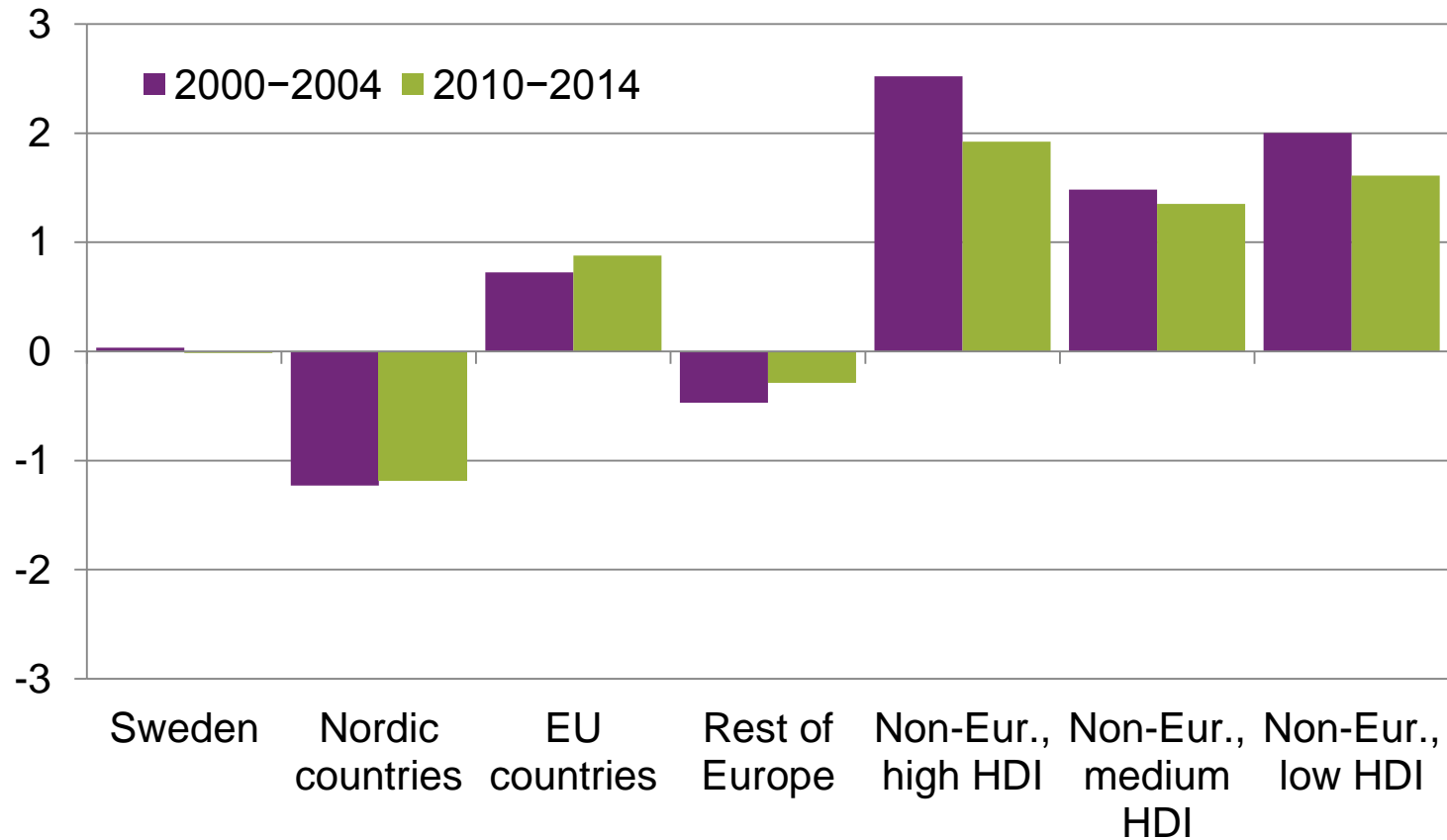


Life expectancy at age 30 for men by region of birth, period, and change between periods

Region of birth	2000–2004	2010–2014	Change
Sweden	48.8	50.8	2.0
Nordic countries	45.8	48.1	2.3
EU countries, except Nordic	49.5	51.4	1.9
Rest of Europe	47.9	49.9	2.0
Non-European, high HDI	50.7	52.4	1.7
Non-European, medium HDI	50.2	52.3	2.1
Non-European, low HDI	48.9	51.8	2.9
Total	48.7	50.7	2.0

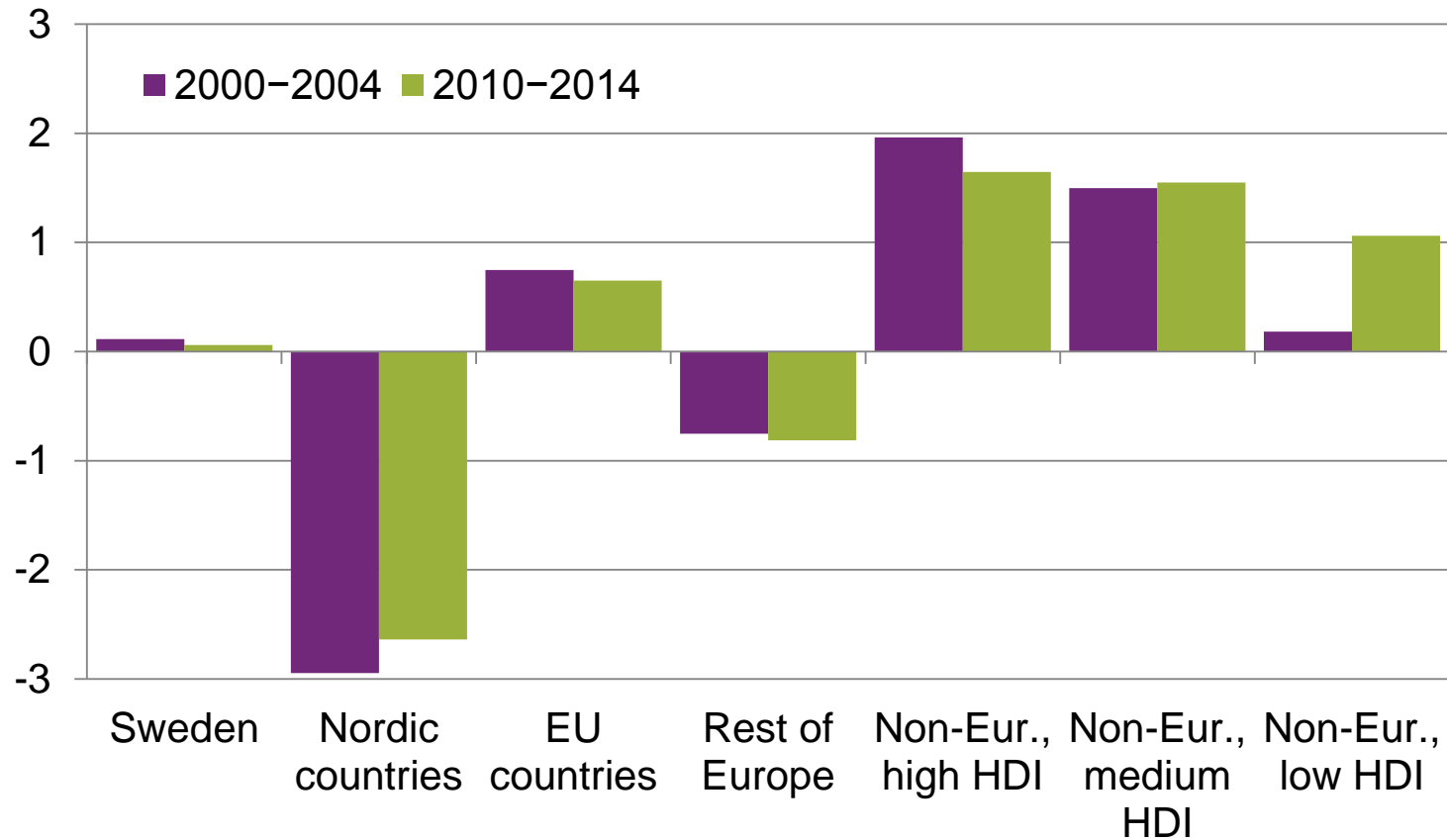
Difference in e_{30} compared with the population by period and region of birth. Women

Difference in years



Difference in e_{30} compared with the population by period and region of birth. Men

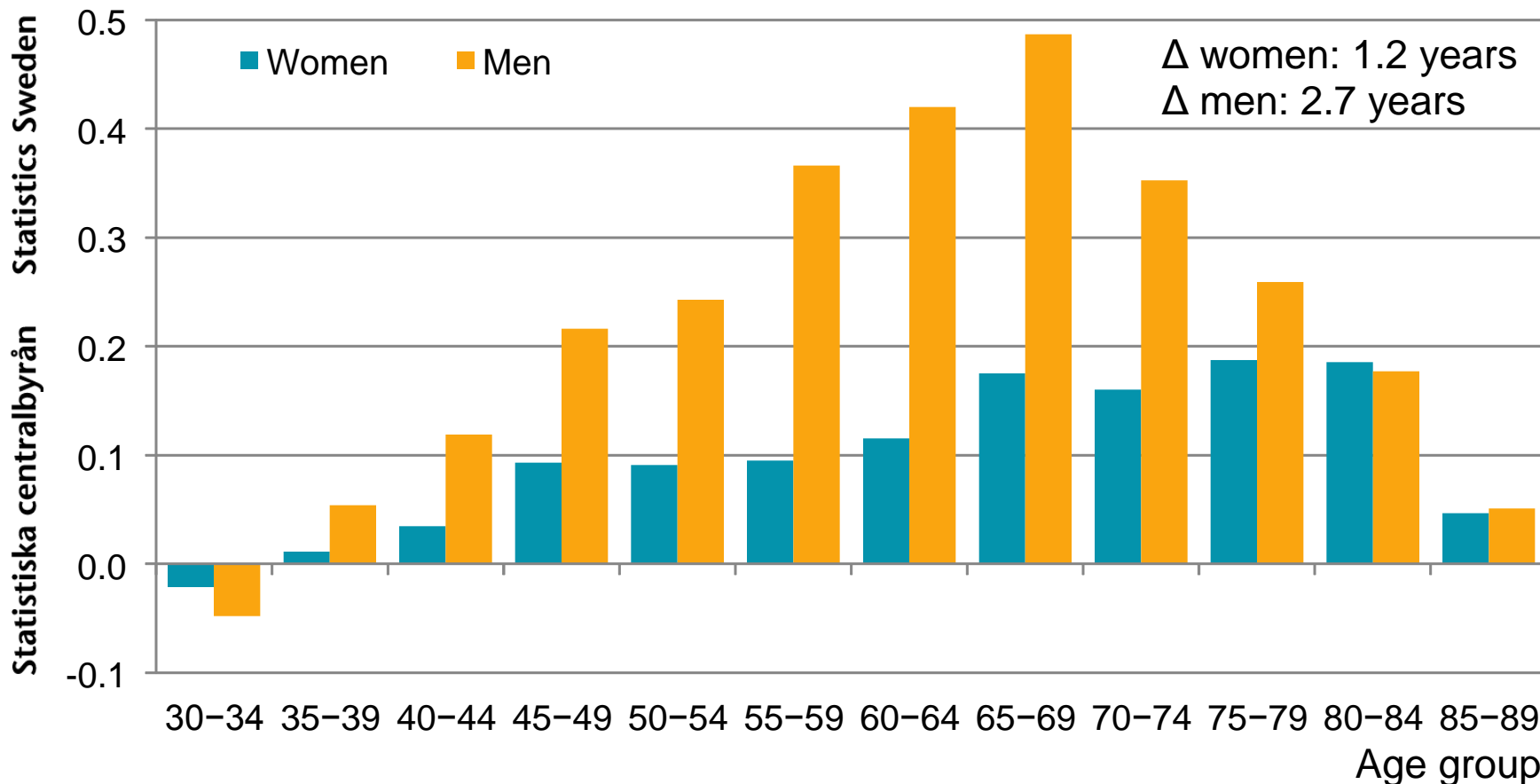
Difference in years



Contribution from various age groups to the difference in e_{30} between native-born and those born in Nordic countries 2010–2014

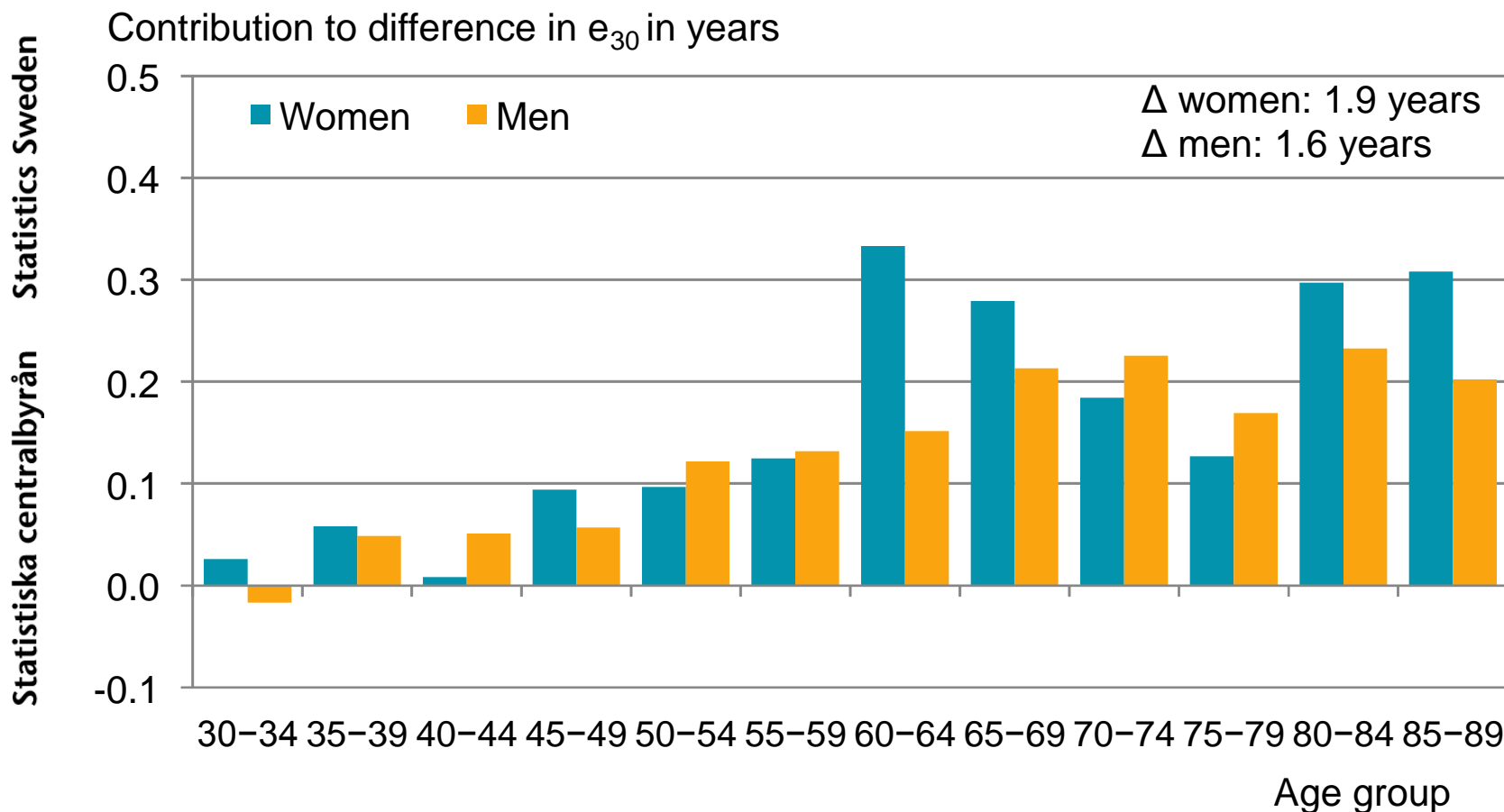


Contribution to difference in e_{30} in years



Δ = Total difference in e_{30}

Contribution from various age groups to the difference in e_{30} between native-born and those born in non-European countries with high HDI 2010–2014



Δ = Total difference in e_{30}

Discussion

- There are clear differences in longevity between various groups defined by country of birth
- Those born in non-European countries and in EU countries except Nordic countries have higher life expectancy than the native-born
- Those born in Nordic countries and European countries outside EU have lower life expectancy than the native-born
- Differences in longevity were similar in 2000–2004 and 2010–2014 and of similar size as sex differences



Discussion cont.

- Findings from the last 15 years suggest that three main groups can be adopted in the projections: native-born, one foreign-born group with lower and one foreign-born group with higher mortality than the population
- The group with low mortality (EU + non-European countries) increase in the population ($\approx 10\%$)
- The number of foreign-born is still relatively small in ages where most people die. The proportion of deaths in the foreign-born group was 11% in the period 2010–2014 (17% of pop.)
- Irregular mortality trends for foreign-born in young adulthood and the very old → difficult to model trends for the future
- Including mortality assumptions for two foreign-born groups will probably have small consequences for the population projection
- A more detailed analysis is needed in order to estimate the numerical consequences of including foreign-born in mortality assumptions for Sweden





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Thank you!

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