



International Association for the  
Study of Insurance Economics

# Études et Dossiers

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Extract from

## Études et Dossiers No. 335

**The New Welfare: The Counter-Ageing Society**

**“Lengthening of Life-cycle, Employment,  
Pensions and Health”**

8 October 2007  
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November 2007

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The Geneva Association**

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Layout & Distribution: Valéria Kozakova

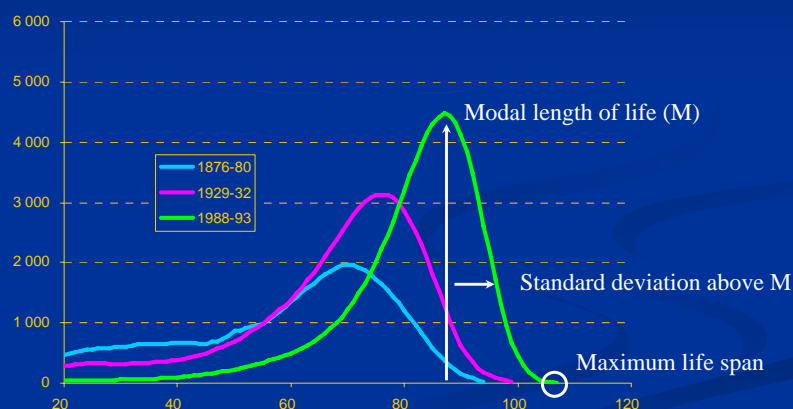
# The Longevity Revolution

Jean-Marie Robine

## **M-Project**

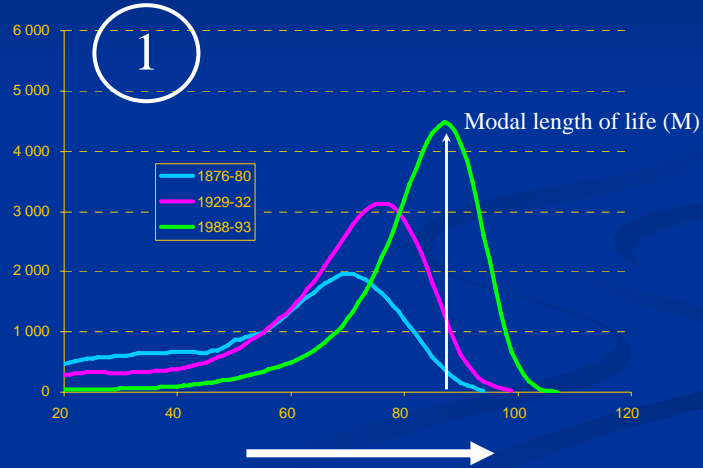
**Siu Lan Cheung, China**  
**Shiro Horiuchi, Japan**  
**Roger Thatcher, UK**  
**Jean-Marie Robine, France**

## Distribution of the ages at death in Switzerland 1876-1880, 1929-1932, 1988-1993

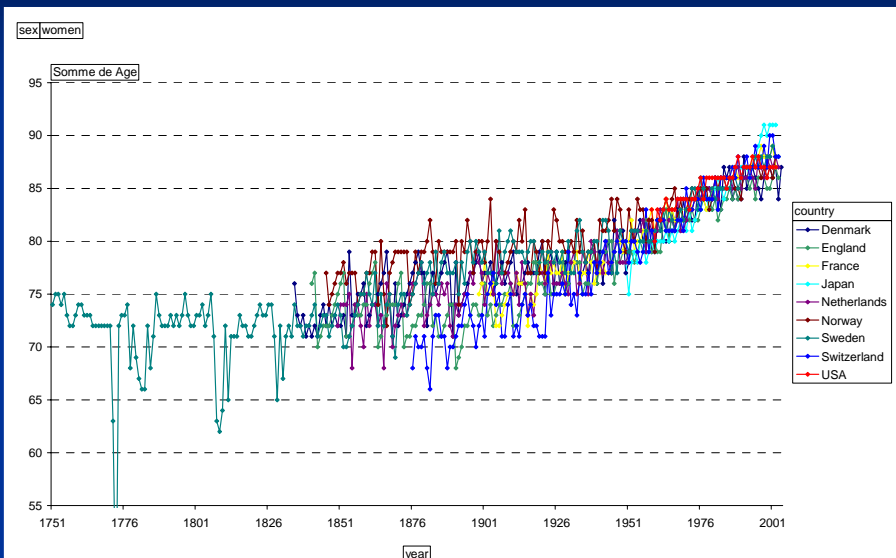


**DATA USED** - all the data available in the Human Mortality Database (HMD) by February 2006 ; i.e. 5032 period life tables for 26 countries, starting with Sweden in 1751 (2516 life tables for each sex).

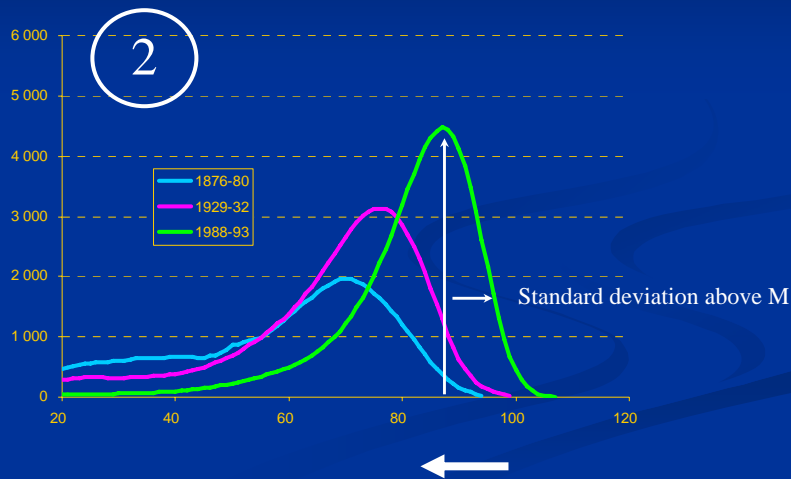
### Distribution of the ages at death in Switzerland 1876-1880, 1929-1932, 1988-1993



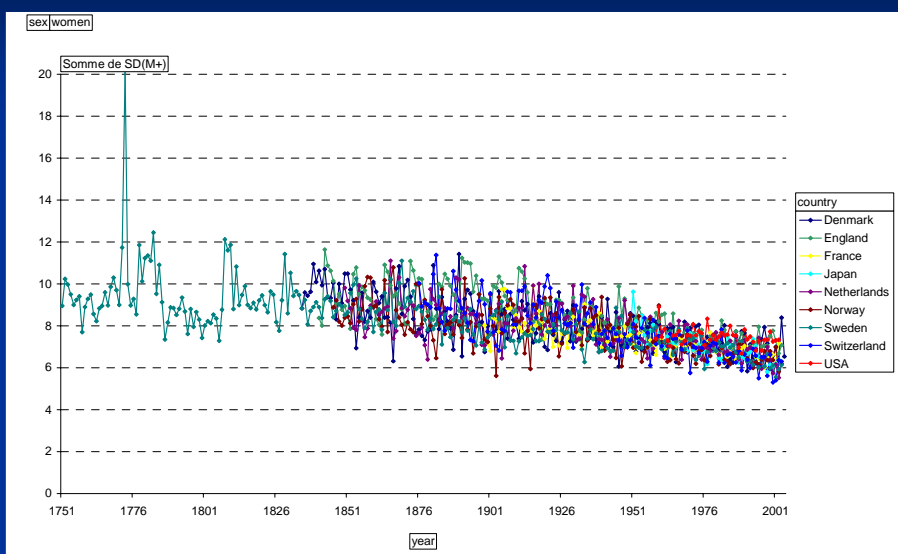
### Increase in the modal length of life (M), since 1751: a selection of 9 countries



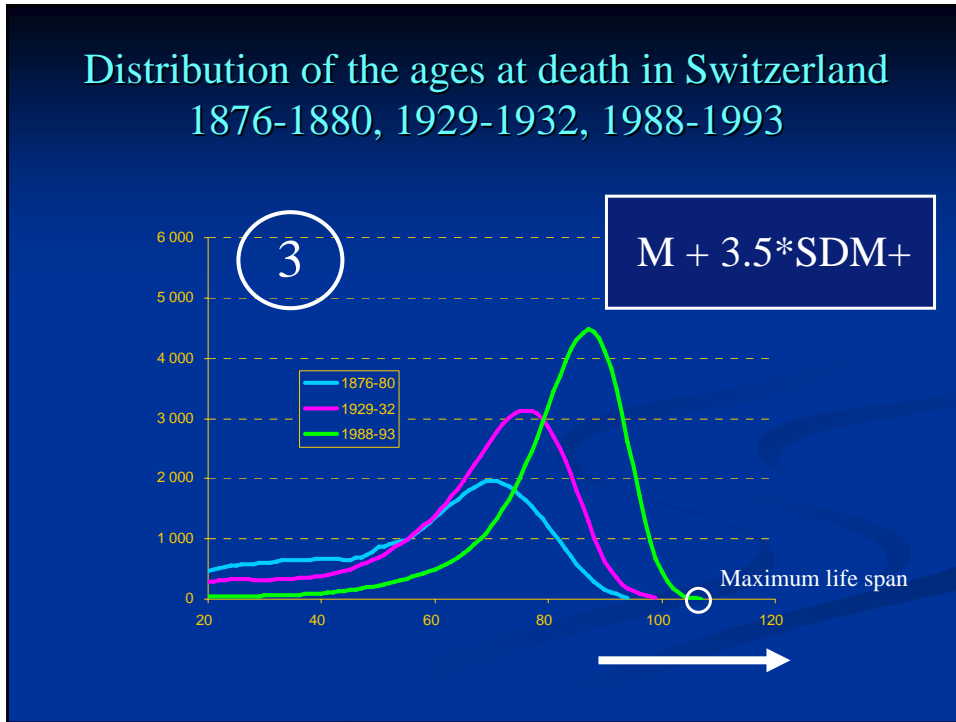
### Distribution of the ages at death in Switzerland 1876-1880, 1929-1932, 1988-1993



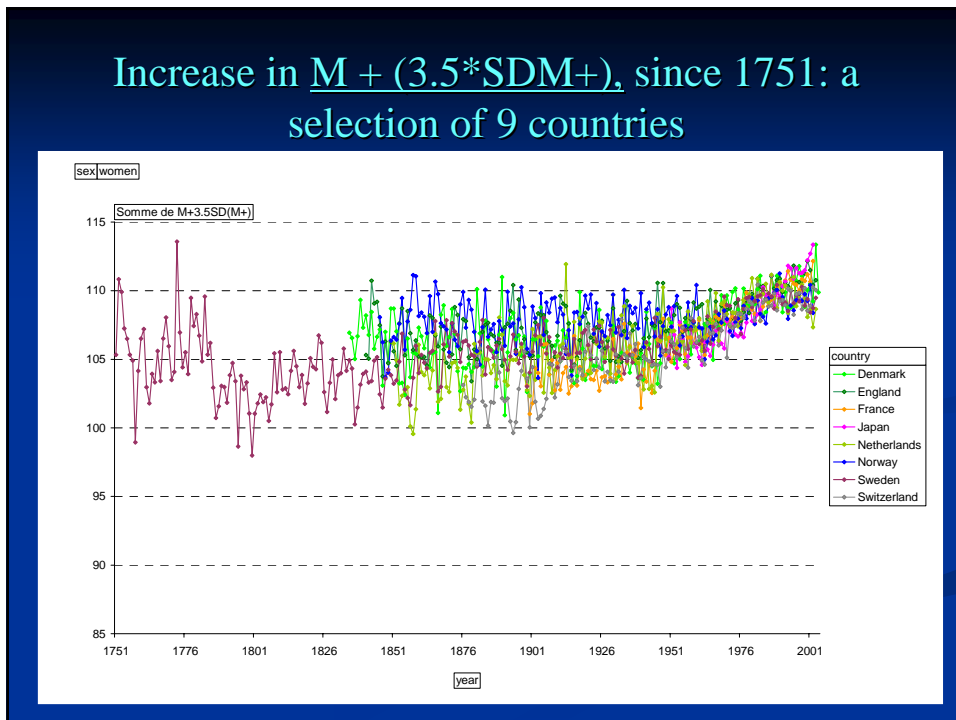
### Decrease in the standard deviation of the ages at death above M (SDM+), since 1751: a selection of 9 countries



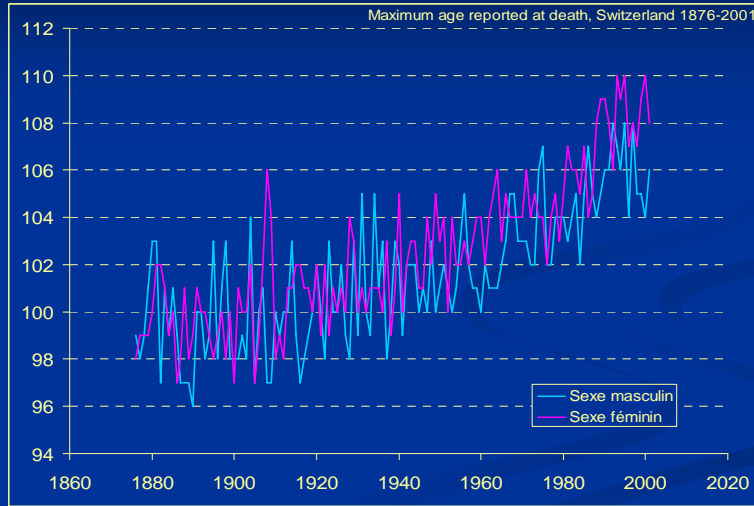
### Distribution of the ages at death in Switzerland 1876-1880, 1929-1932, 1988-1993



### Increase in $M + (3.5 \cdot SD_{M+})$ , since 1751: a selection of 9 countries



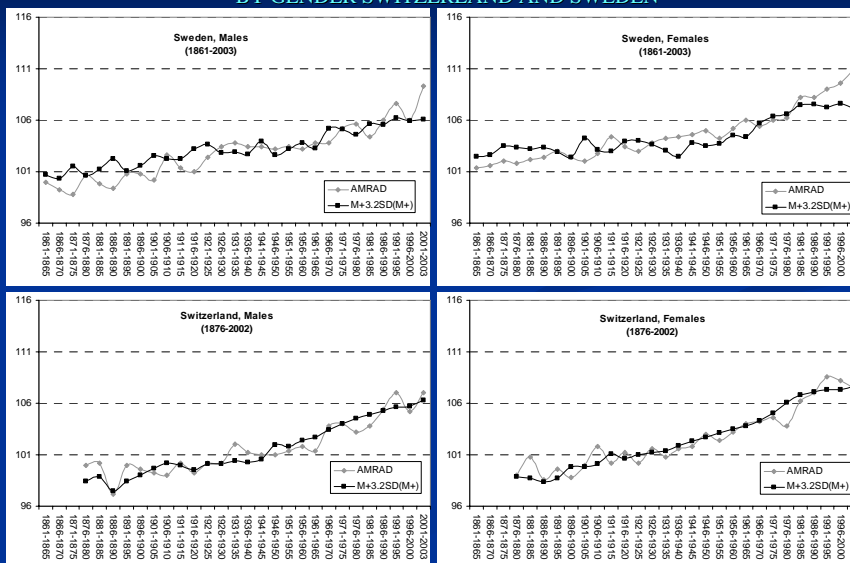
## Maximum age reported at death, Switzerland



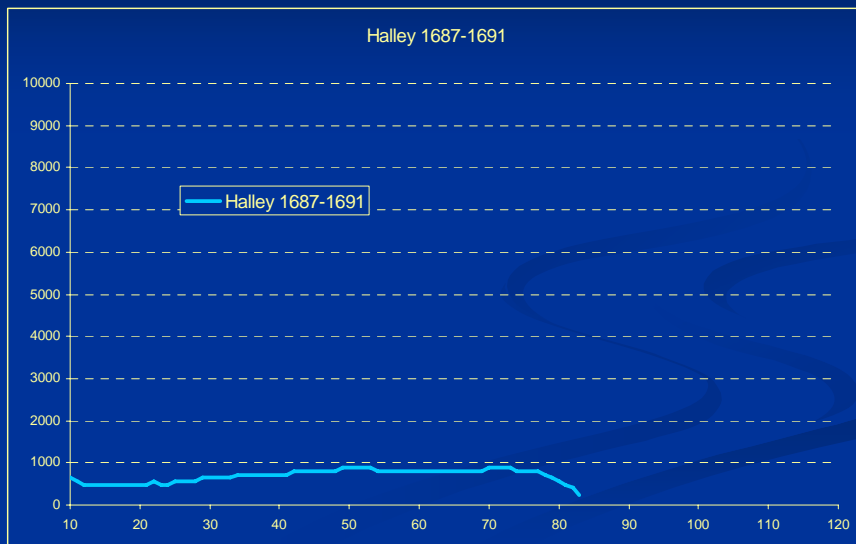
Robine & Paccaud, 2005

## Maximum reported age at death (MRAD) and $M + k \cdot \text{SDM} +$

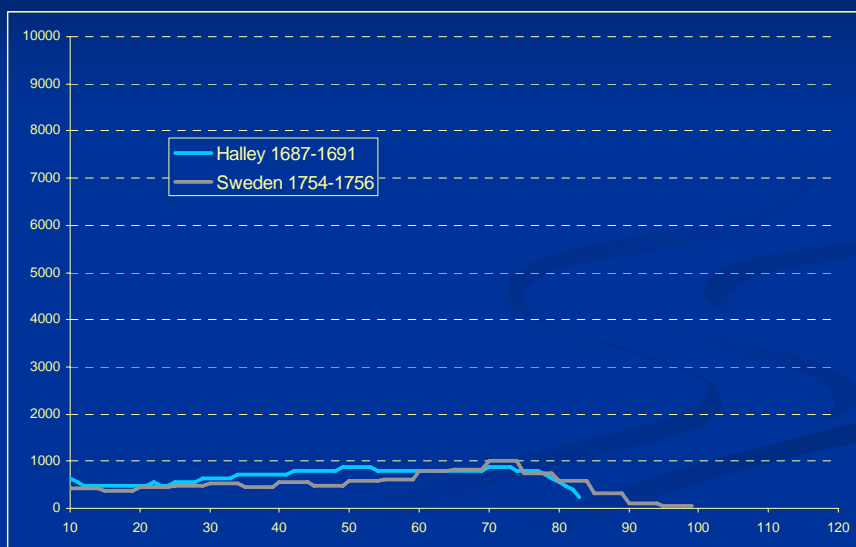
BY GENDER SWITZERLAND AND SWEDEN



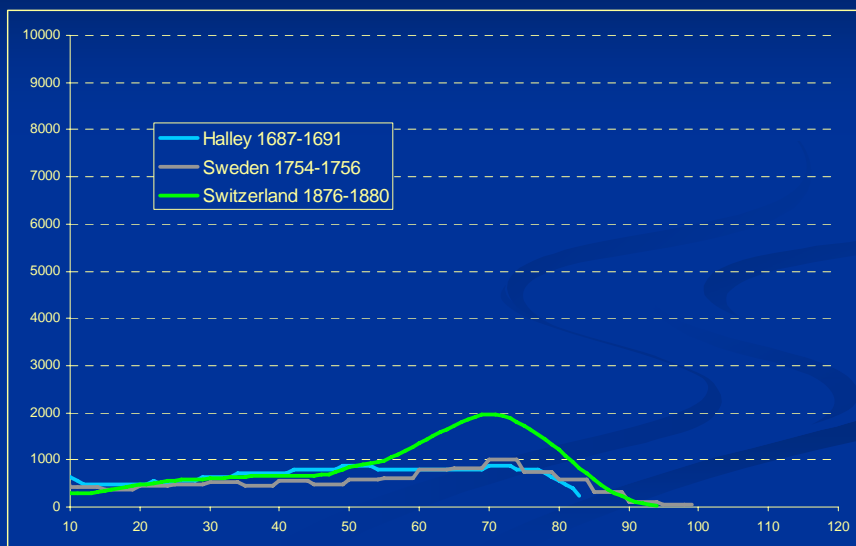
## Halley, first life table, 1693



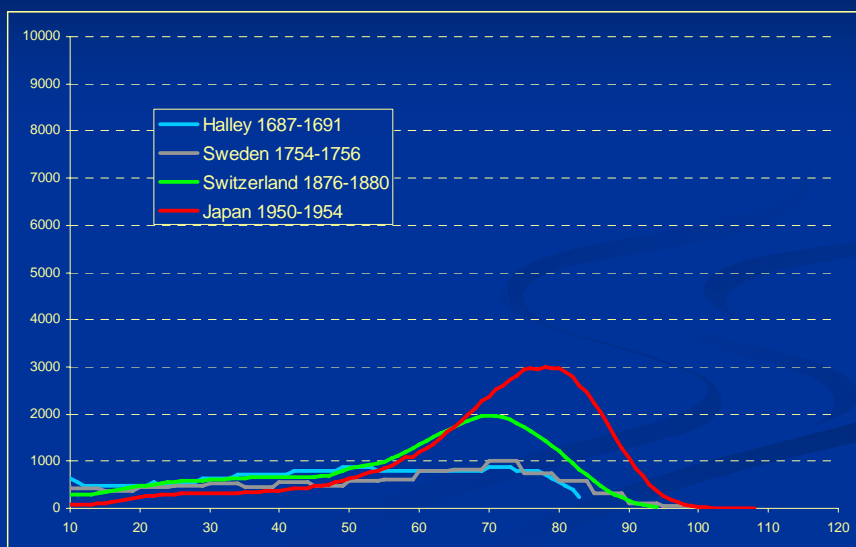
## Sweden, 1754-1756, data sent by Wargentin to Deparcieux



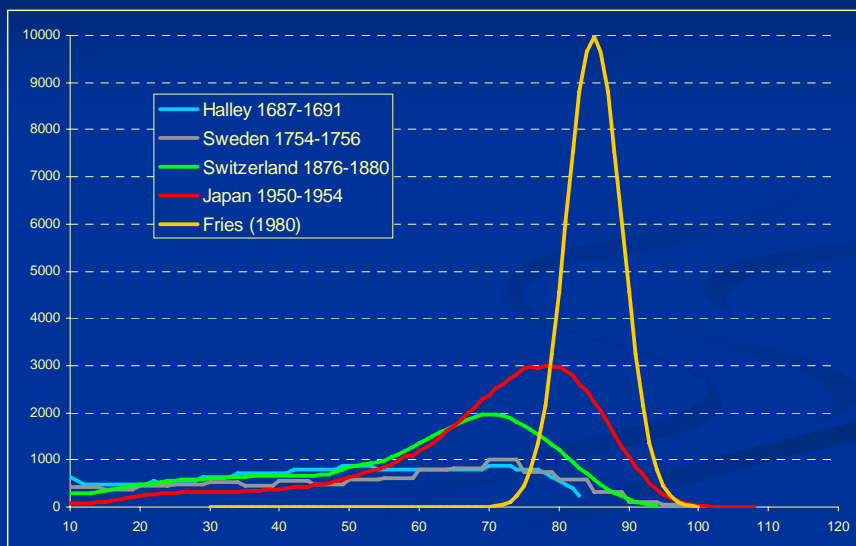
## Switzerland, 1876-1880



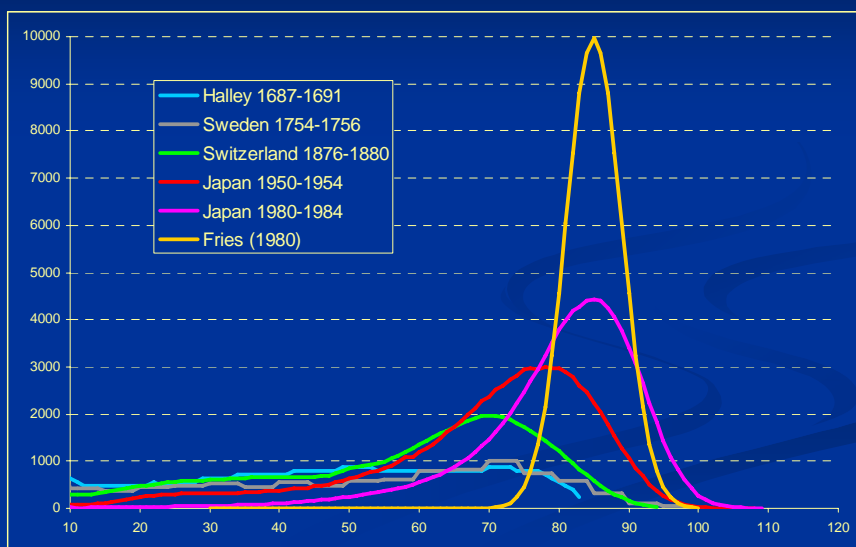
## Japon, 1950-1954

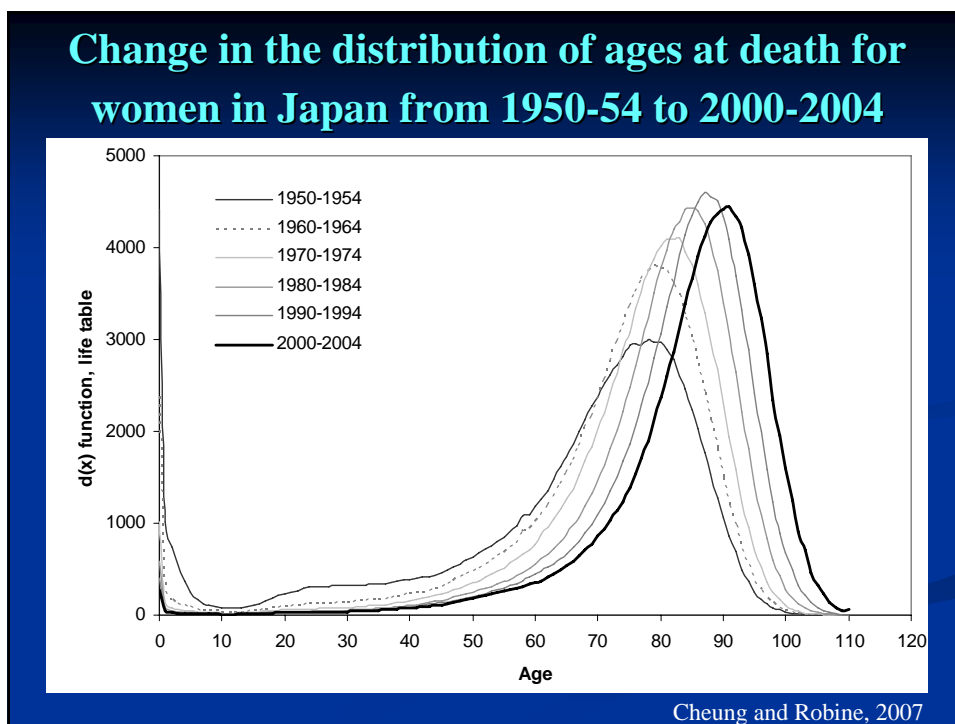
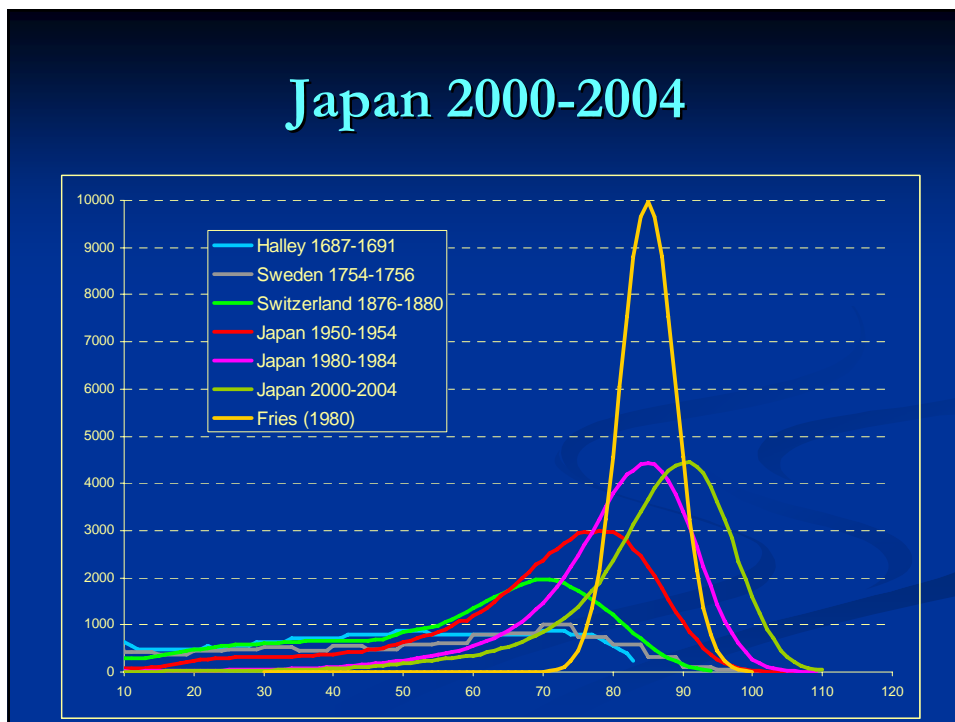


## Fries (1980)

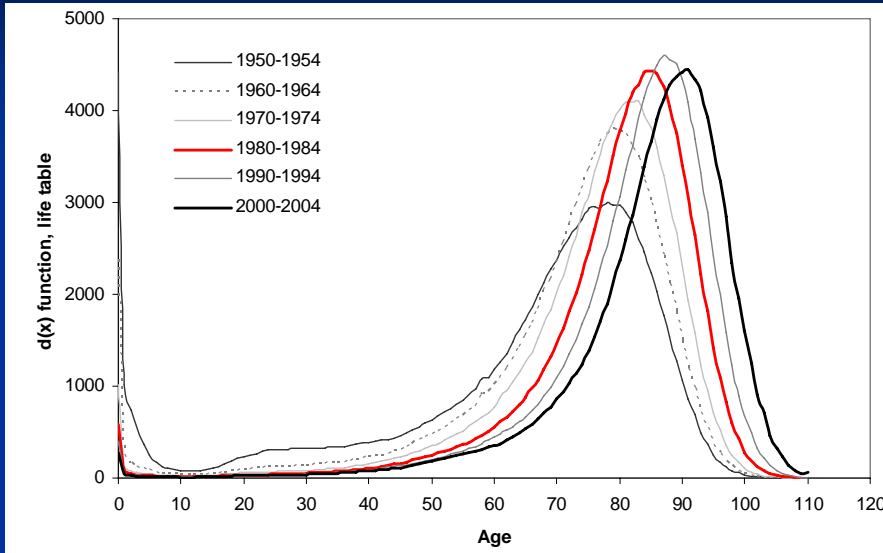


## Japan 1980-1984



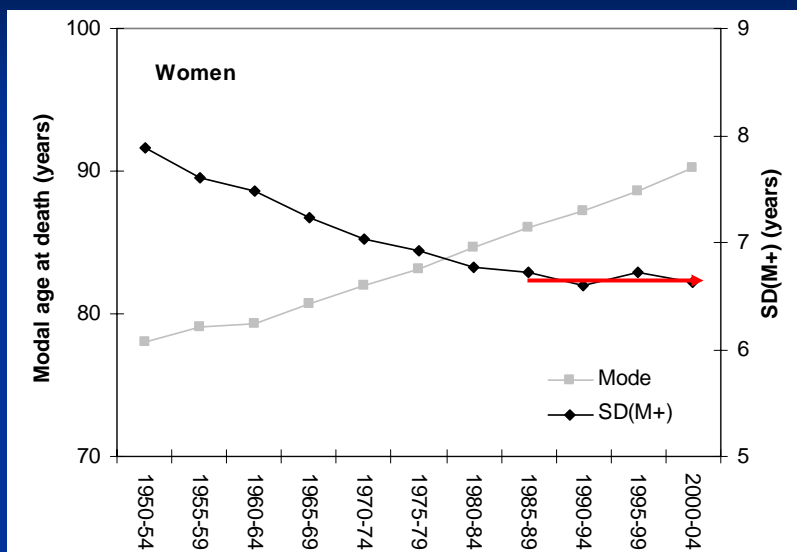


### Change in the distribution of ages at death for women in Japan from 1950-54 to 2000-2004



Cheung and Robine, 2007

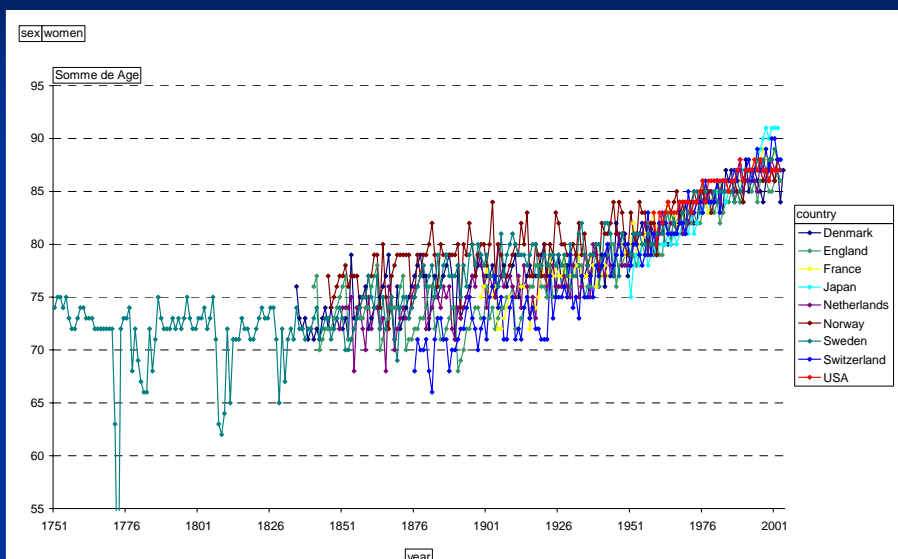
### Change in the modal length of life and in SDM+ for women in Japan from 1950-54 to 2000-2004



Cheung and Robine, 2007

Thank you!

Increase in the modal length of life (M), since 1751:  
a selection of 9 countries



### Augmentation des durées de vie modales (M), depuis 1751: selection de 9 pays

