

Mortality in Taiwan in the Most Recent Decades: Peekaboo Cause of Death Information

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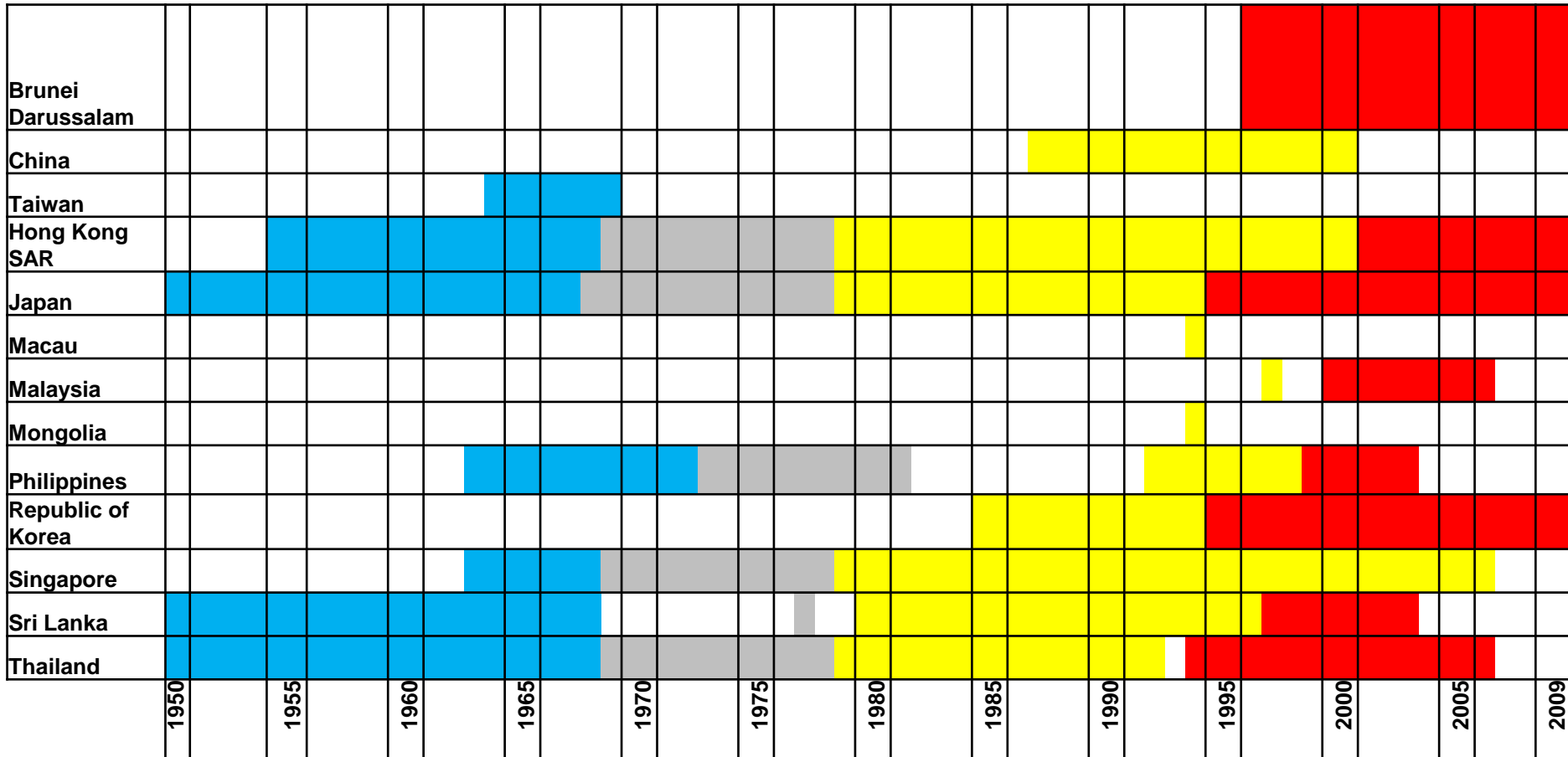
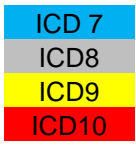


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Outline of the Talk

- Motivation
- Data and Methods
- Comparison
 - Domestic
 - International
- Discussion

WHO: ICD codes by country in the Asian region, 1950-2009.





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Definitions of Terms

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Data

Domestic (1991, 2008):

Department of Health, ROC (DH-ROC)

International (2008):

Human Mortality Database (HMD)

World Health Organization (WHO)

Data: High Longevity Countries

Domestic (1991, 2008):

DH-ROC: broad causes of death without ICD detail

International (2008):

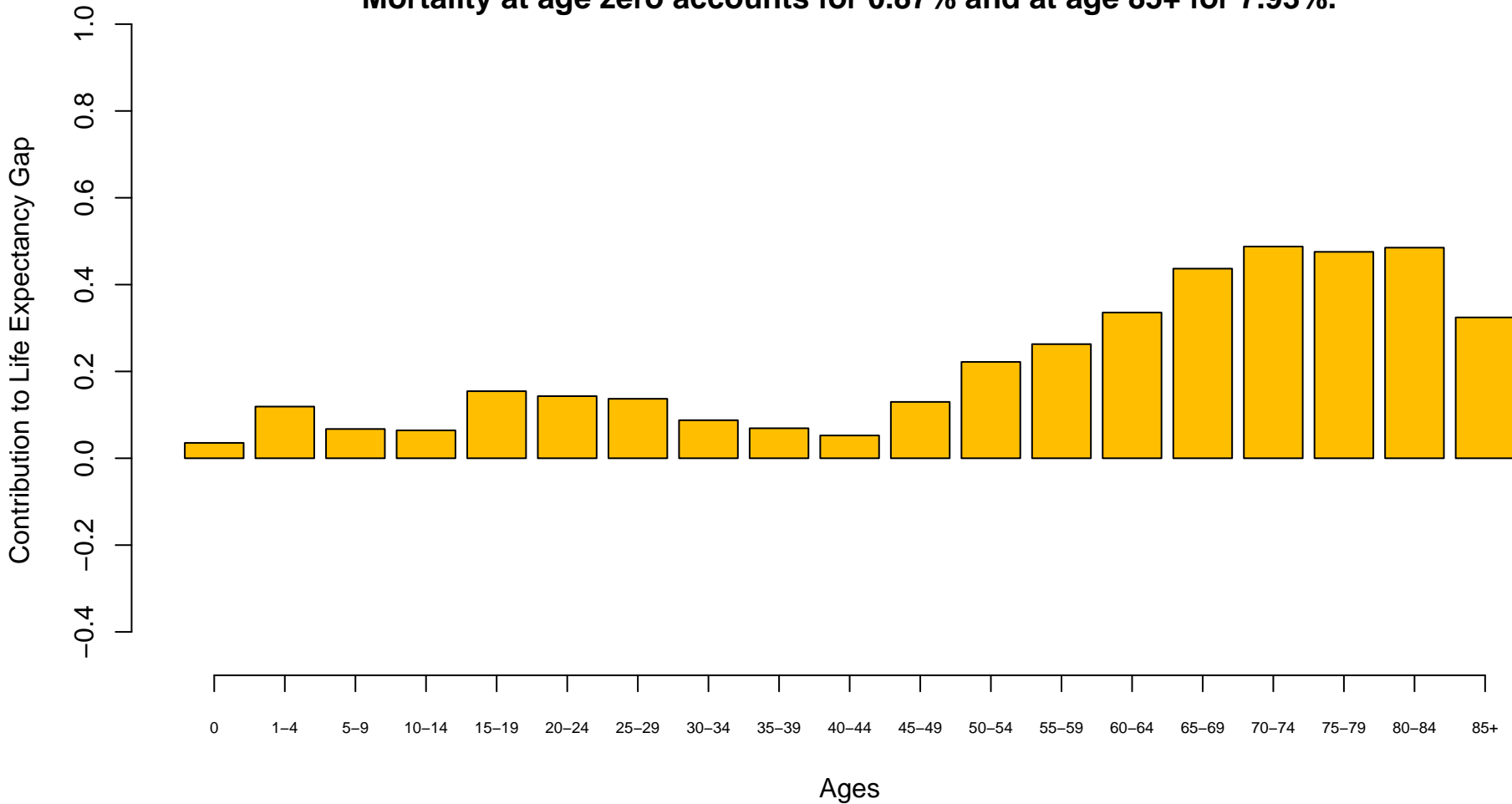
HMD: AUT, FIN, FRA, ISL, LUX, NLD, NOR, PRT, ESP, SWE,
GBR, JPN, ISR, CZE : **HLC**

WHO: 11 causes of death

Cause-decomposition

$$e_0^2 - e_0^1 = \sum_x \Delta_x \left(\sum_i \Delta_{x,i} \right)$$

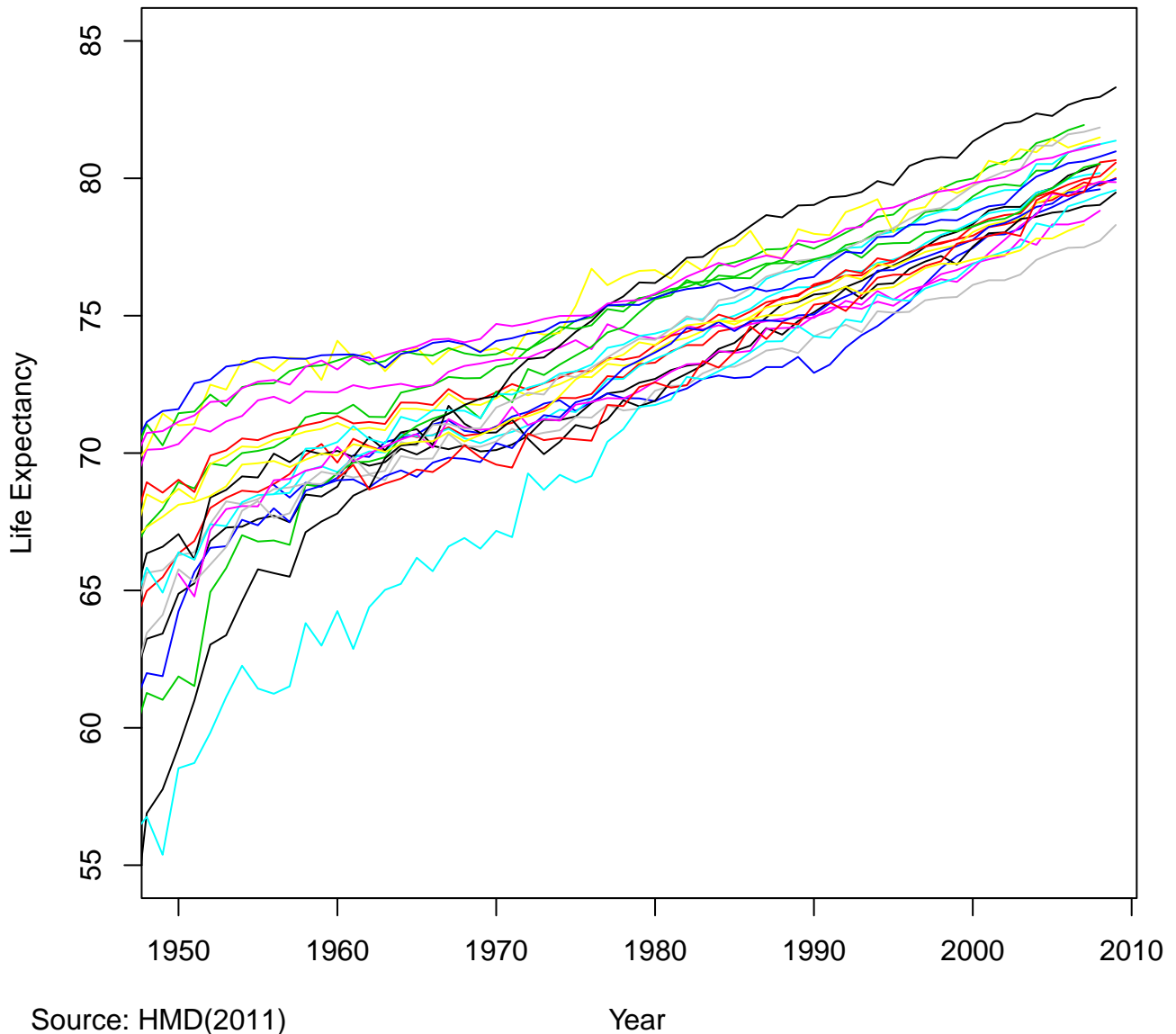
**Figure. Age-contribution to the 4.09 years of life expectancy (LE) difference in Taiwan from year 1991 (LE=74.27) to year 2008 (LE=78.36).
Mortality at age zero accounts for 0.87% and at age 85+ for 7.93%.**



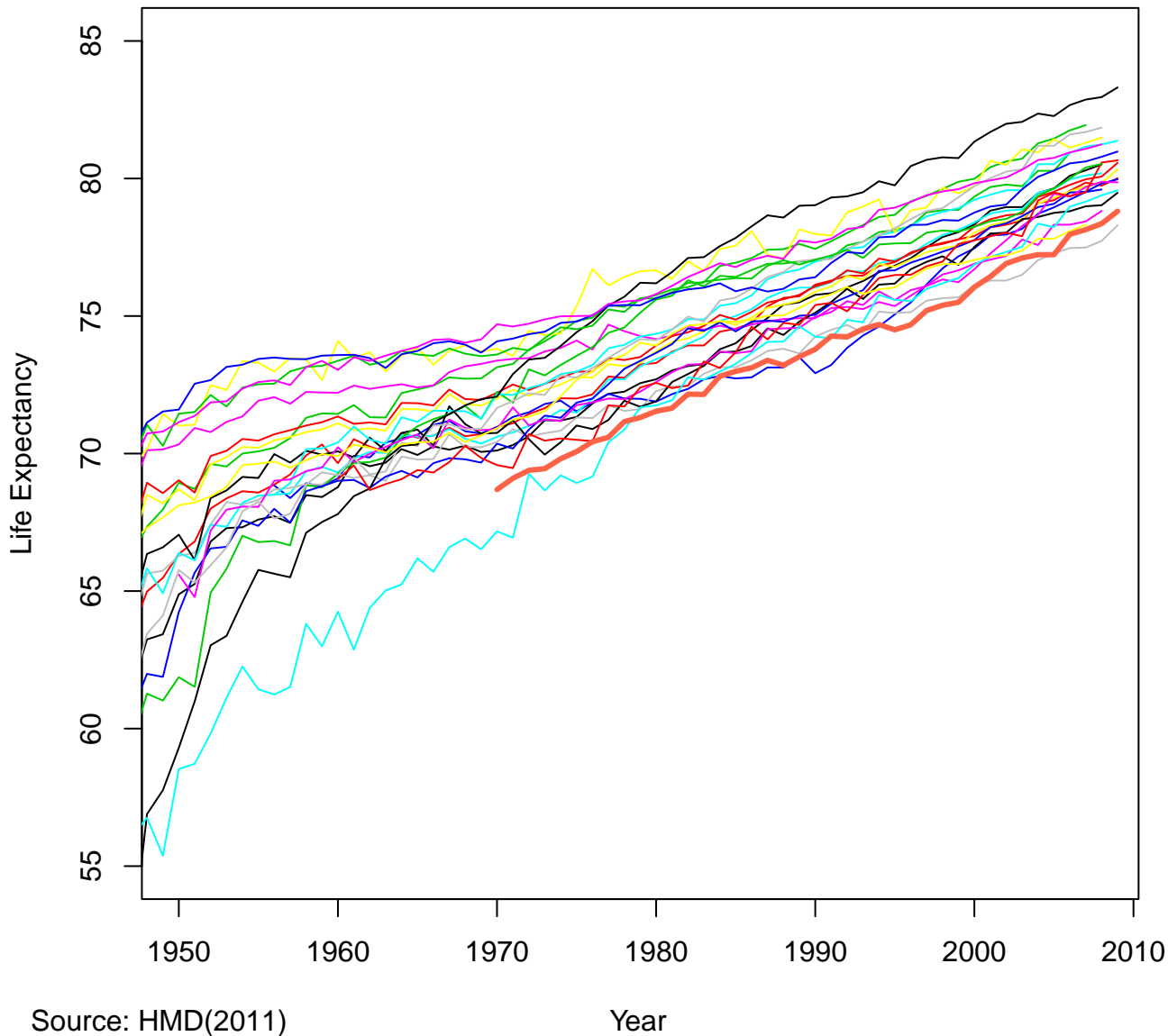
Results: Domestic Comparison

- **Neoplasms** at ages 40 and above contribute substantially to the Taiwanese increase in life expectancy
- Some **Cerebrovascular Diseases** have gone in the opposite direction, namely slowing down the life expectancy progress

Life expectancy in Western European Countries, USA and Japan, 1950–2008.



Life expectancy in Western European Countries, USA, Japan and TWN, 1950–2008.



Source: HMD(2011)

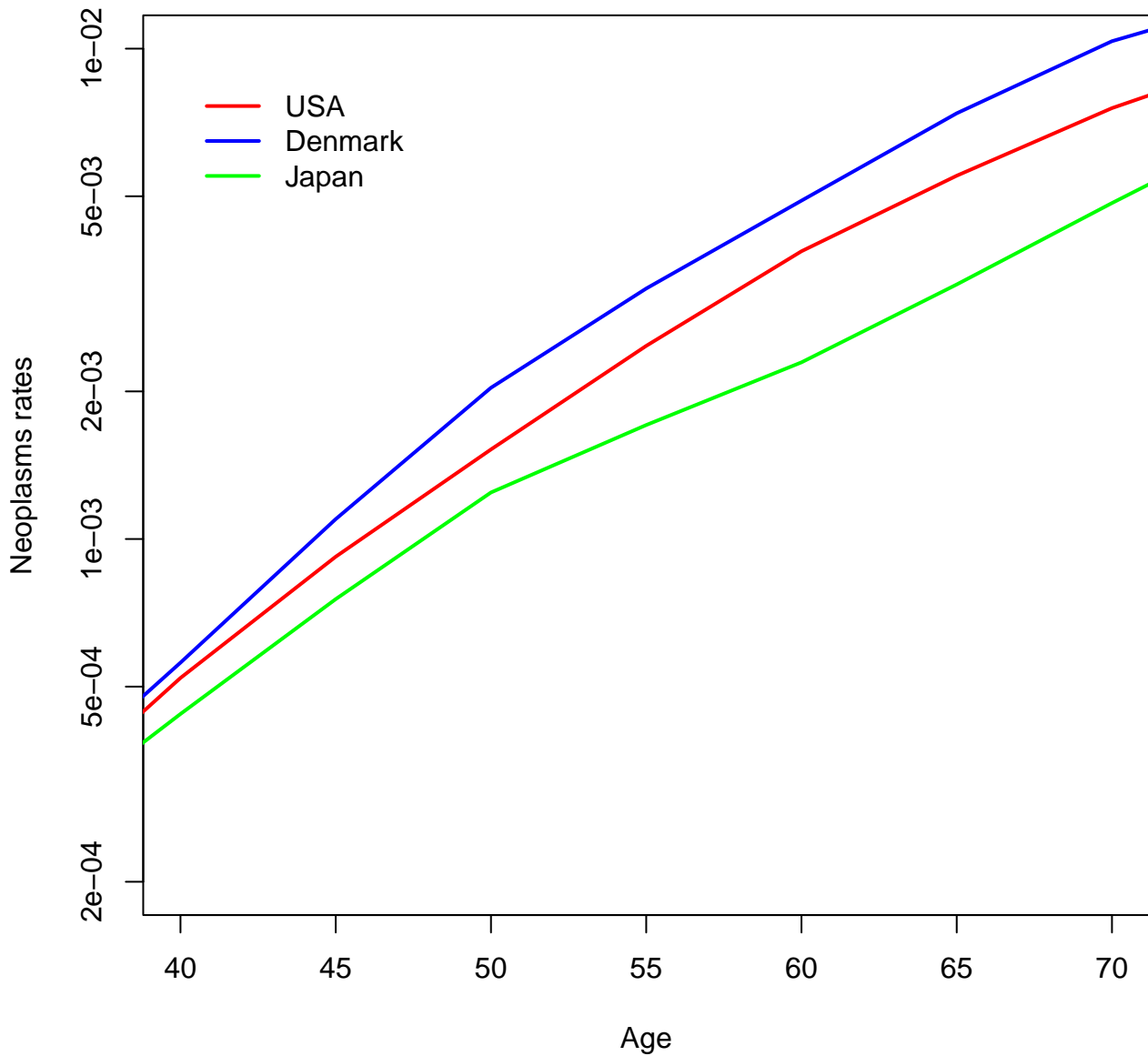
Year

Methods

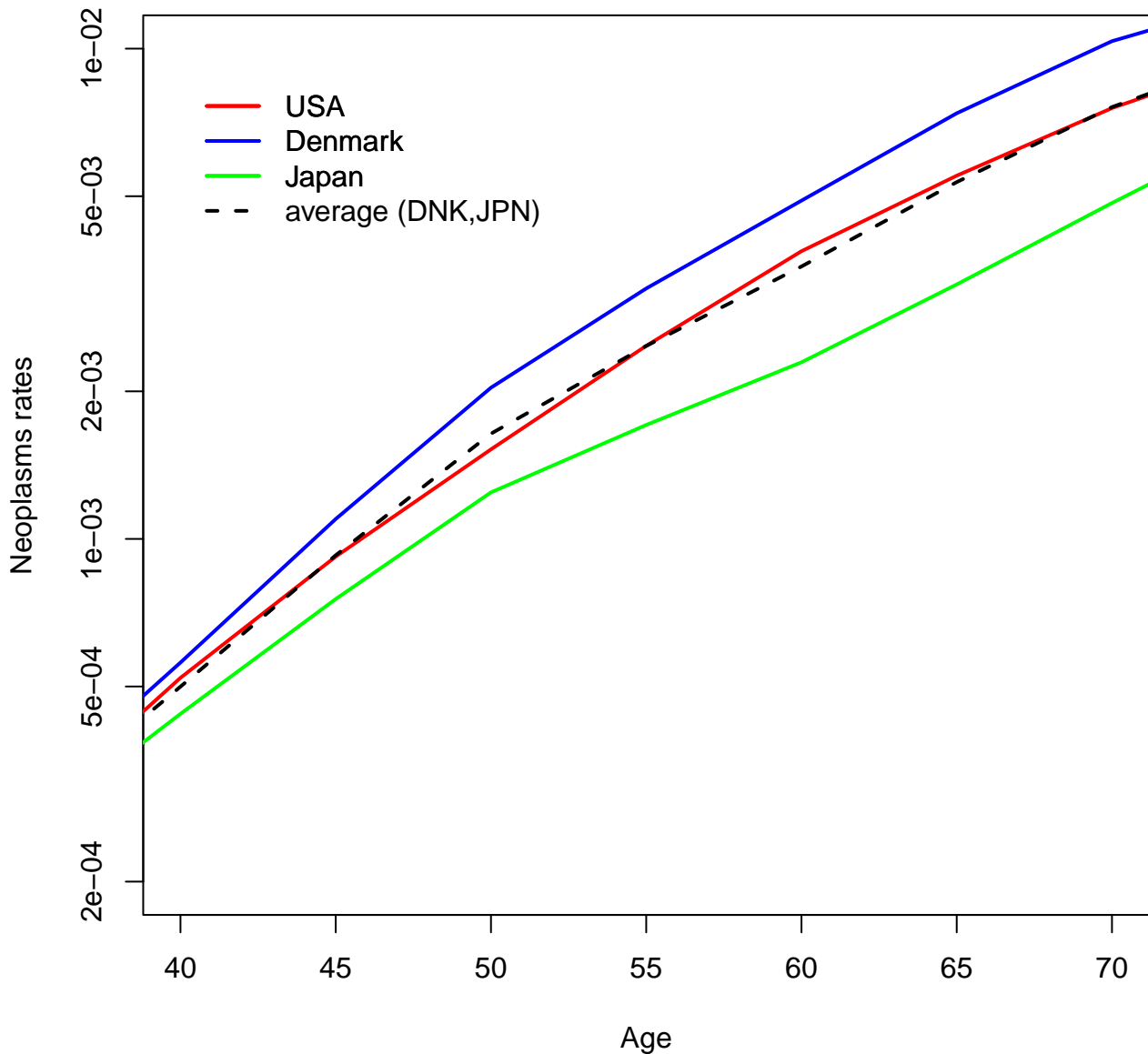
$$m_x^{HLC} = \frac{\sum_i m_x^i}{n}$$

- Ho & Preston. *US mortality in an international context: Age variations*. PDR 2010
- Gleij, Meslé & Vallin. *Diverging Trends in Life Expectancy at Age 50: A Look at Causes of Death*. In Crimmins, Preston SH, Cohen B, (Eds.) 2011.

**Figure. Neoplasm age-specific death rates for females:
USA, DNK and JPN in 2000–2005.**



**Figure. Neoplasm age-specific death rates for females:
USA, DNK and JPN in 2000–2005.**



Methods

$$m_x^{HLC} = \frac{\sum_i D_x^i}{\sum_i P_x^i}$$

**Figure. Neoplasm age-specific death rates for females:
USA, DNK and JPN in 2000–2005.**

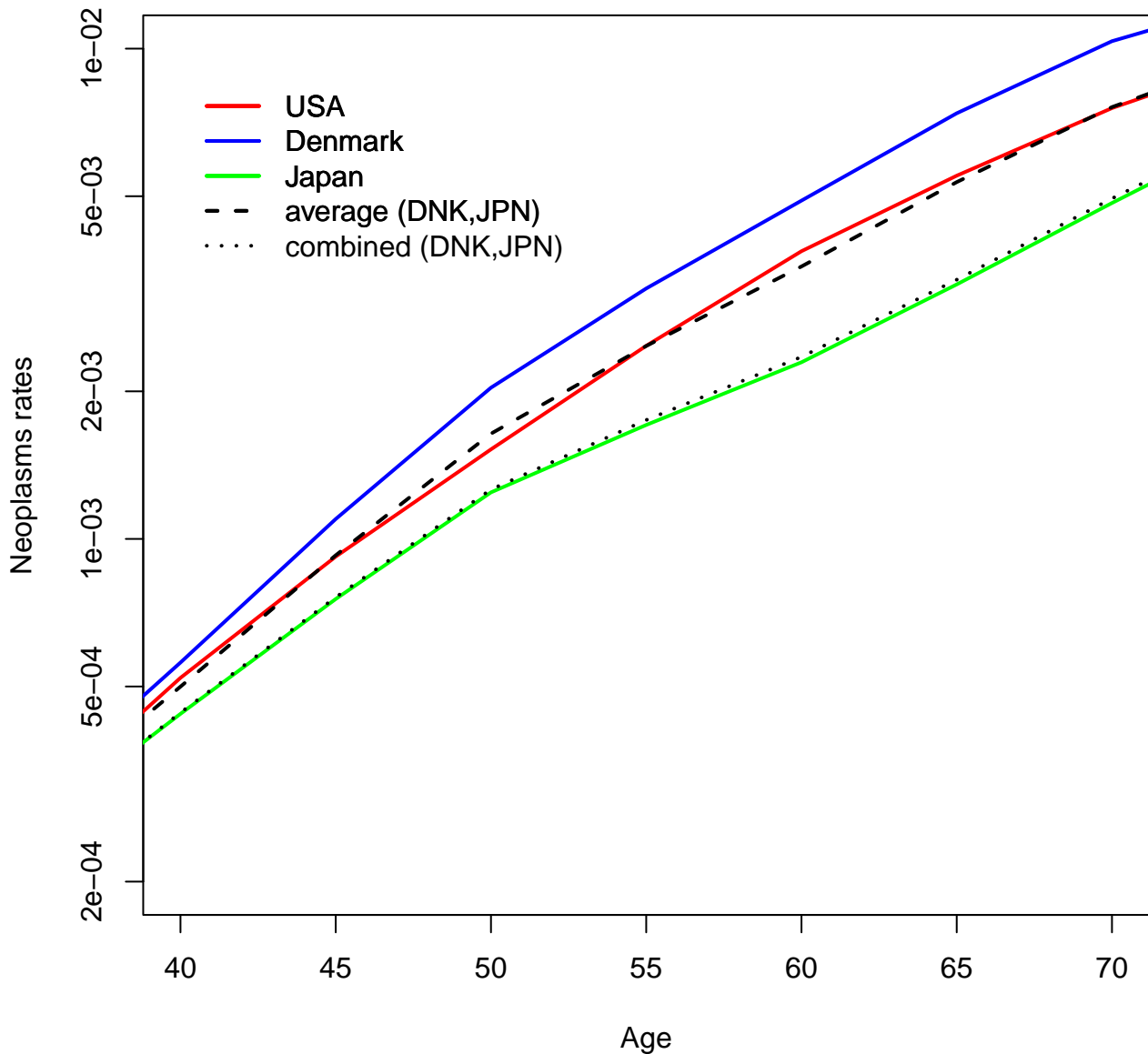


Table. Differences in the life expectancies between the TWN and HLCs, in 2008.

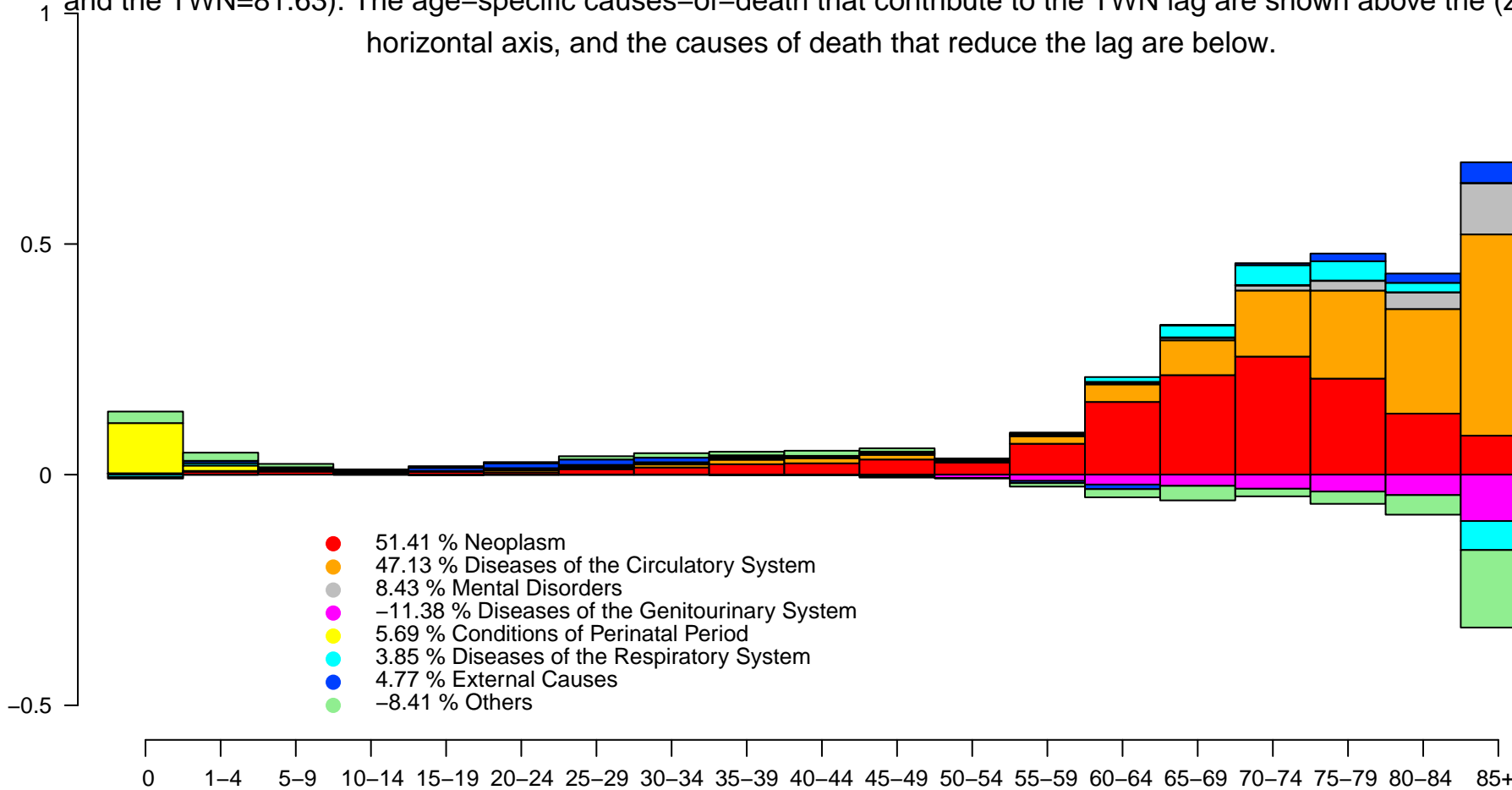
<u>Country</u>	<u>Gender</u>	
	Female	Male
HLCs	84.13	78.23
TWN	81.63	75.44
Gap	2.5	2.79

Figure. Age- and cause-specific contributions to the differences in the life expectancies between

Taiwan and high-longevity countries (HLCs), in 2008: 2.5 years of difference for females (HLCs=84.13

and the TWN=81.63). The age-specific causes-of-death that contribute to the TWN lag are shown above the (zero) horizontal axis, and the causes of death that reduce the lag are below.

Contribution to Life Expectancy Gap

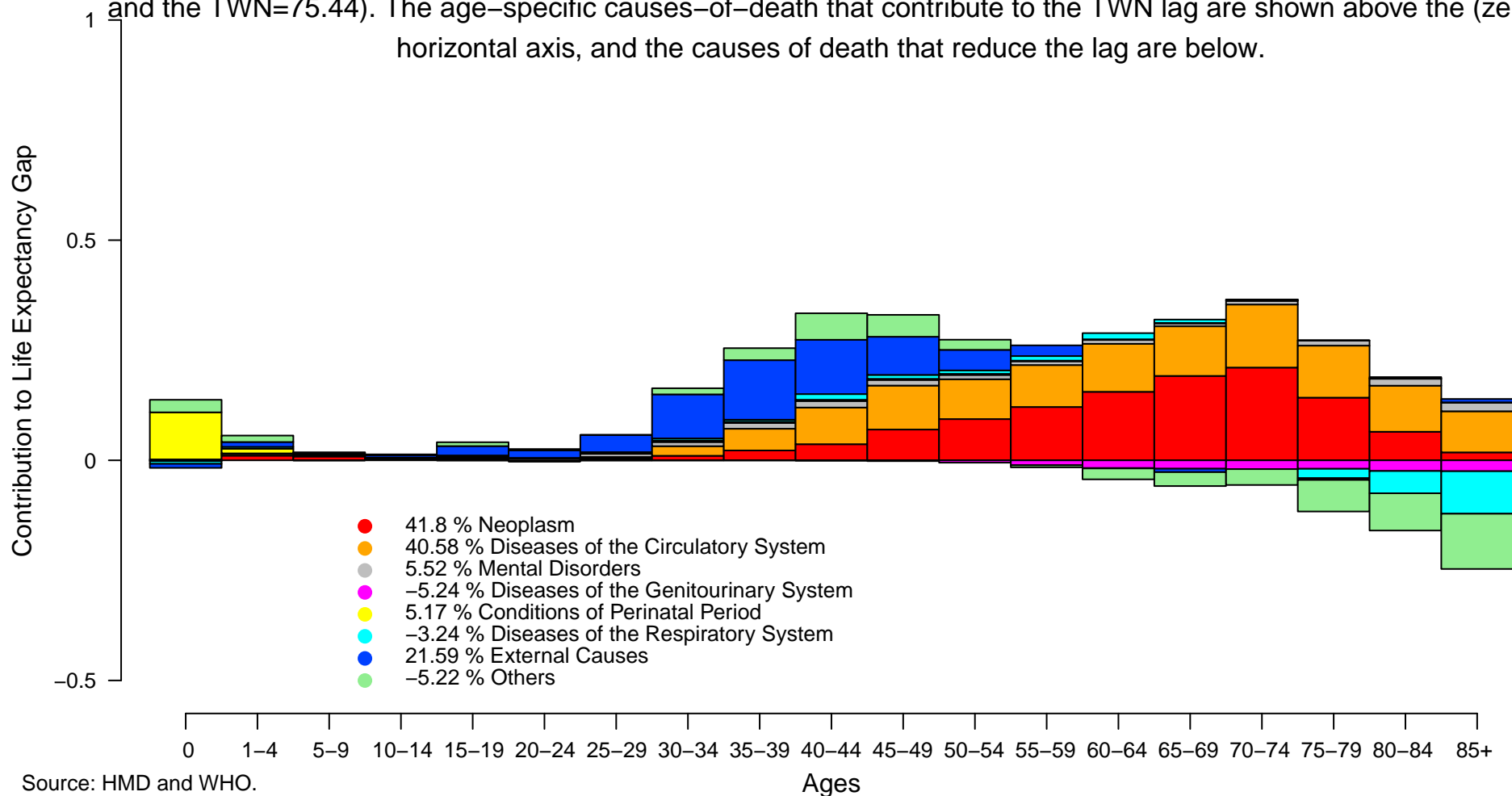


- 51.41 % Neoplasm
- 47.13 % Diseases of the Circulatory System
- 8.43 % Mental Disorders
- -11.38 % Diseases of the Genitourinary System
- 5.69 % Conditions of Perinatal Period
- 3.85 % Diseases of the Respiratory System
- 4.77 % External Causes
- -8.41 % Others

Source: HMD and WHO.

Ages

Figure. Age- and cause-specific contributions to the differences in the life expectancies between Taiwan and high-longevity countries (HLCs), in 2008: 2.79 years of difference for males (HLCs=78.23 and the TWN=75.44). The age-specific causes-of-death that contribute to the TWN lag are shown above the (zero) horizontal axis, and the causes of death that reduce the lag are below.



Results: International Comparison

- Taiwanese **males** are lagging behind their HLC counterparts at **young ages**, while **females at older ages**
- Neoplasms and Diseases of the Circulatory System are the main contributors of the disparity, but External Causes exacerbate the gap between males

Figure. Percentage distribution of deaths by the 10 leading causes of death and by marital status, Taiwan 2008.

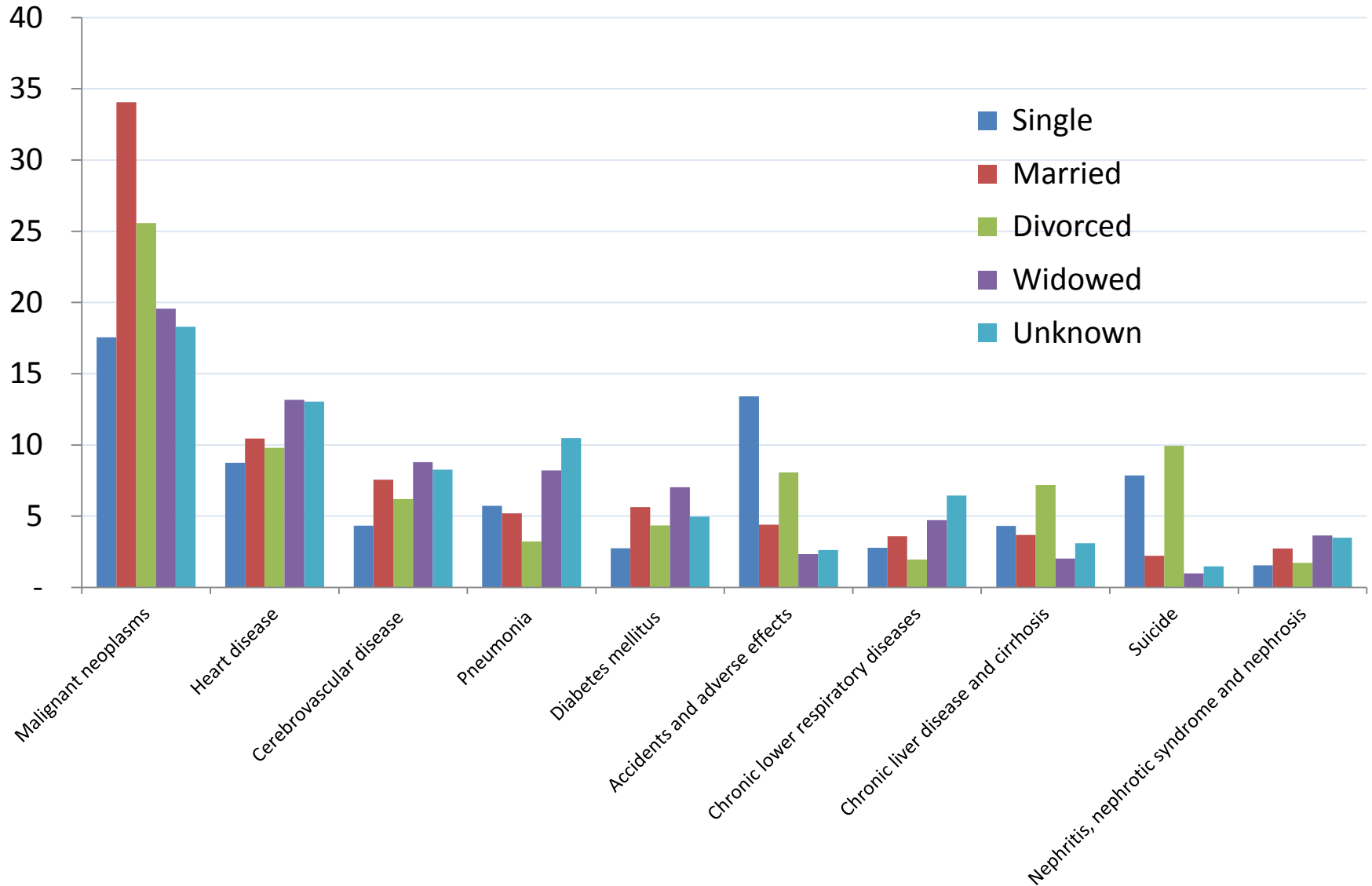


Figure. Percentage distribution of deaths by the 10 leading causes of death and by marital status, Taiwan 2008.

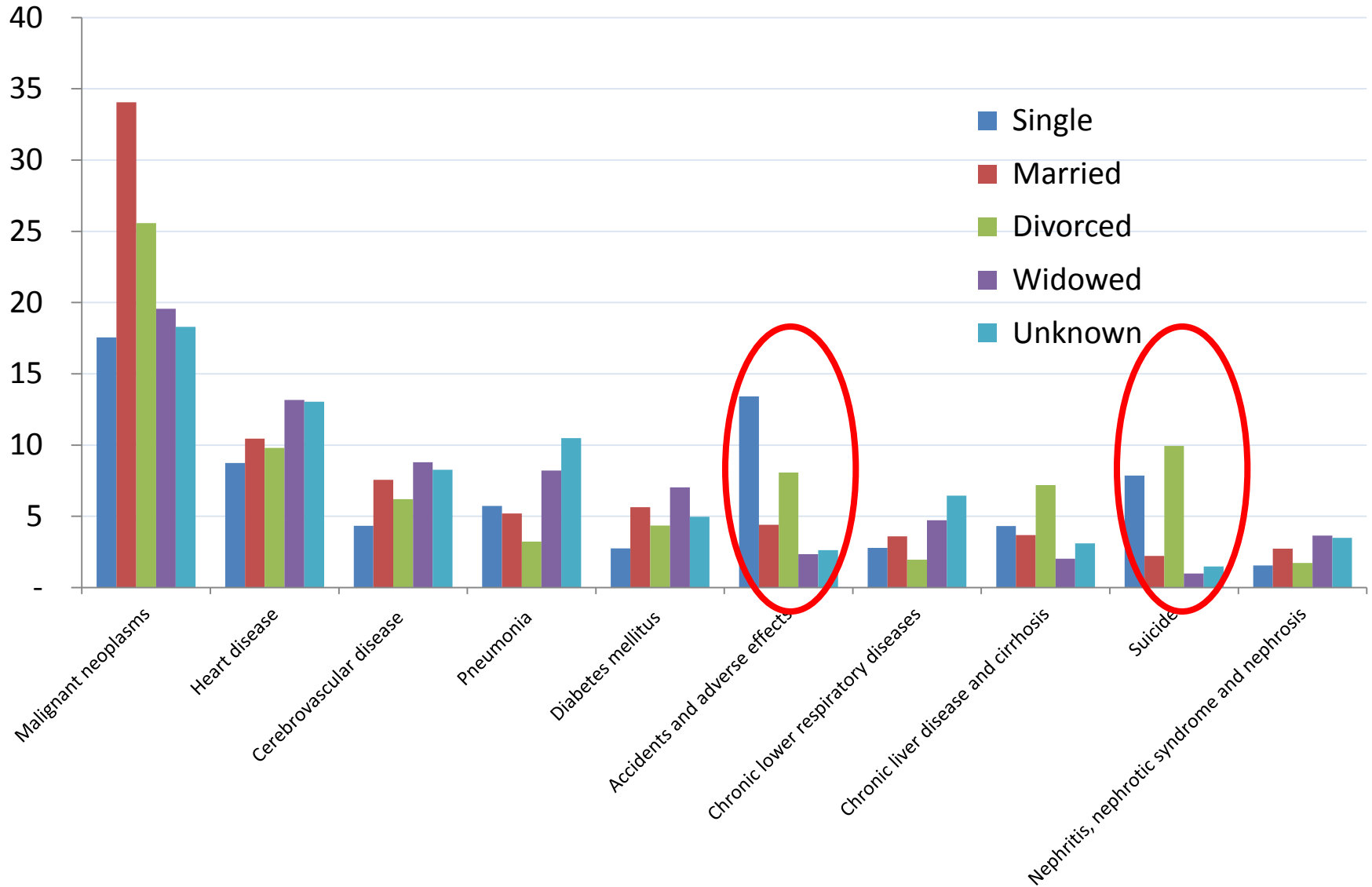


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