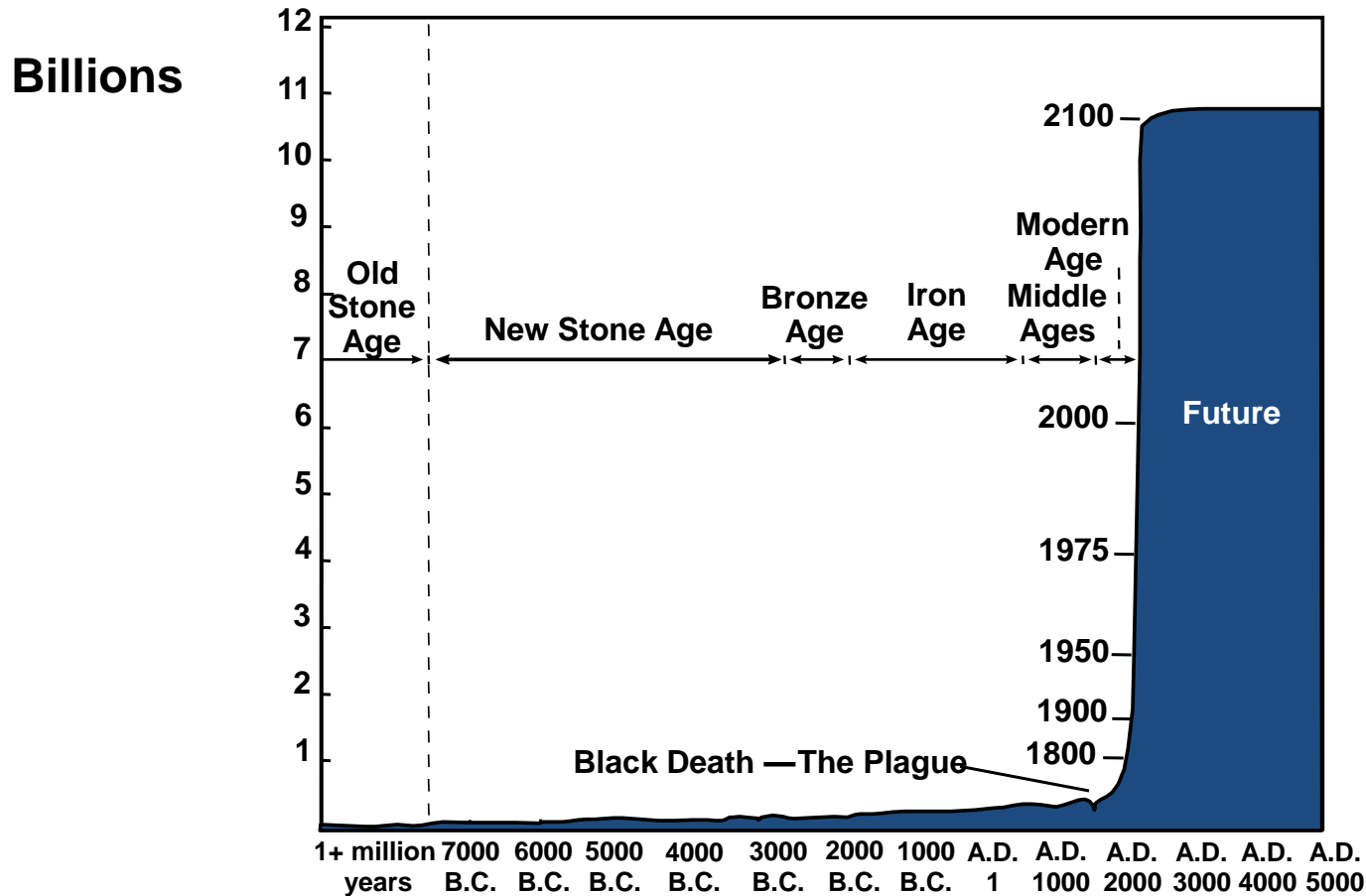


# Riding the Population Wave(s)

Prof Jane Falkingham  
Director ESRC Centre for Population Change  
University of Southampton

# The 'Really Big' Population Wave:

## World population growth through history



Source: Population Reference Bureau; and United Nations, *World Population Projections to 2100* (1998).

# World Population Growth, in Billions

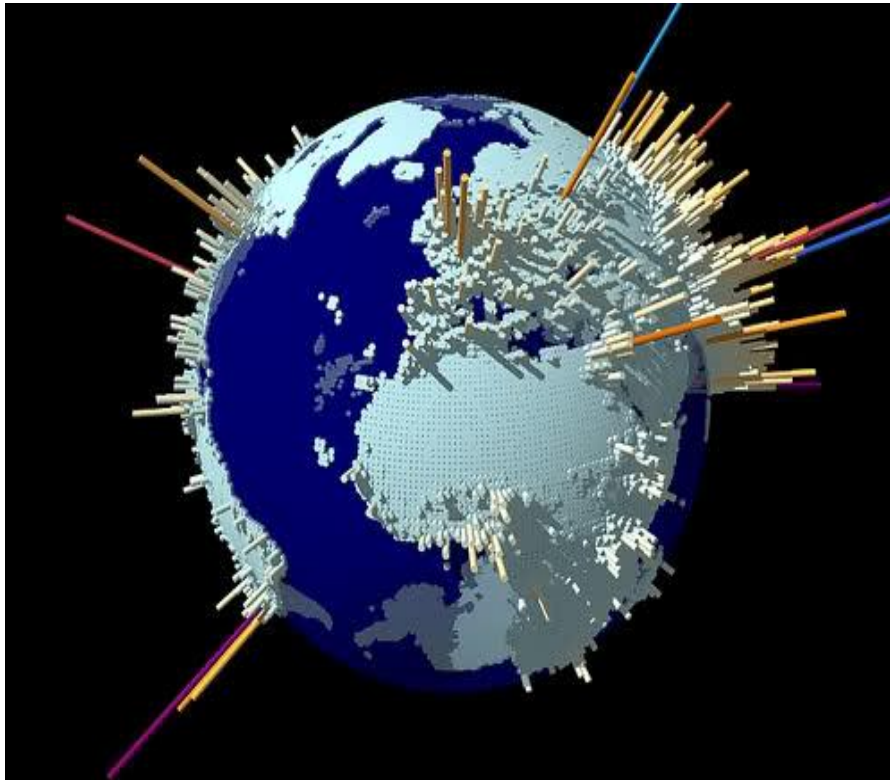


## Number of years to add each billion (date reached)

Sources: First and second billion: Population Reference Bureau.

Third through seventh billion: United Nations, *World Population Prospects: The 2010 Revision*, 2011.

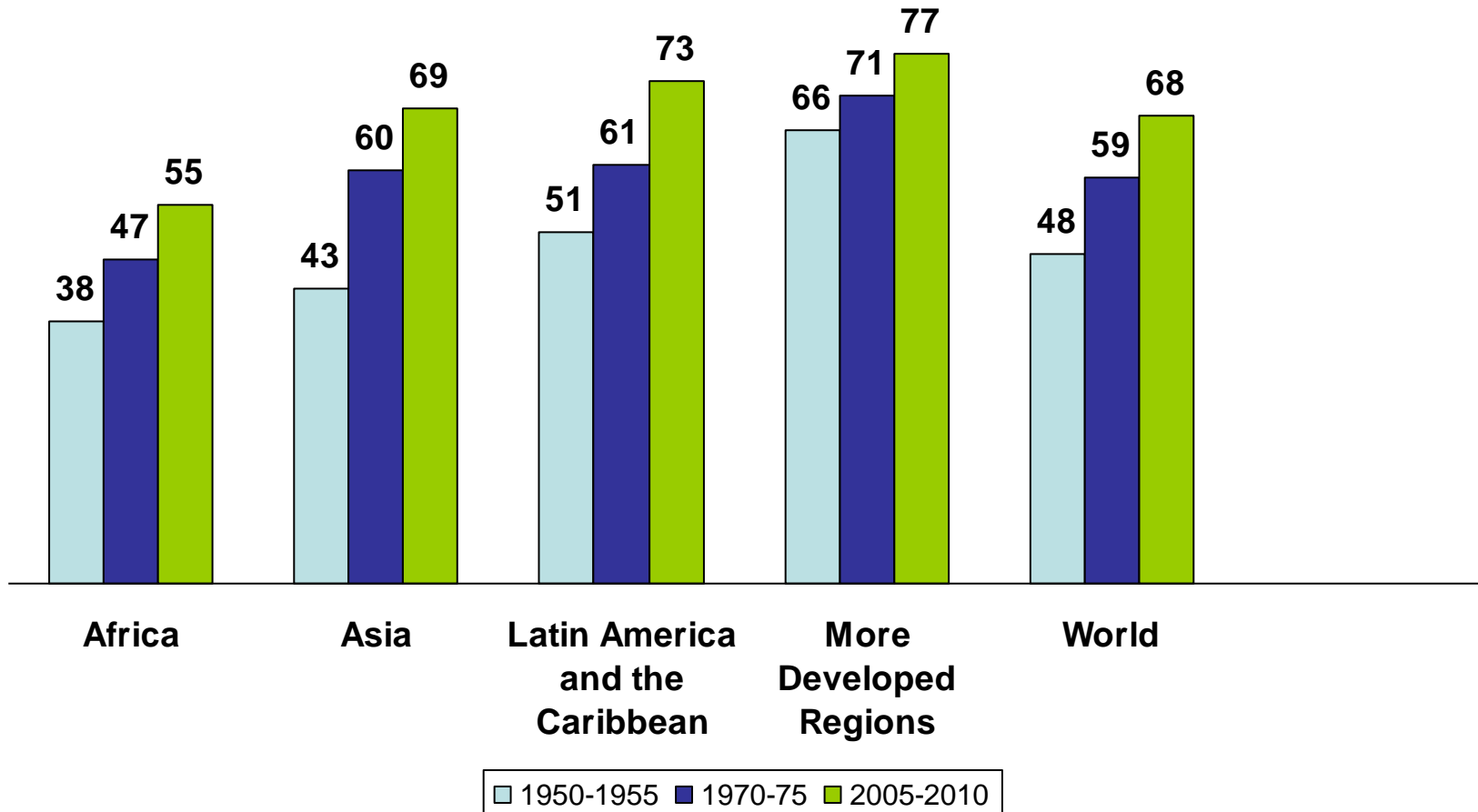
# Where are they?



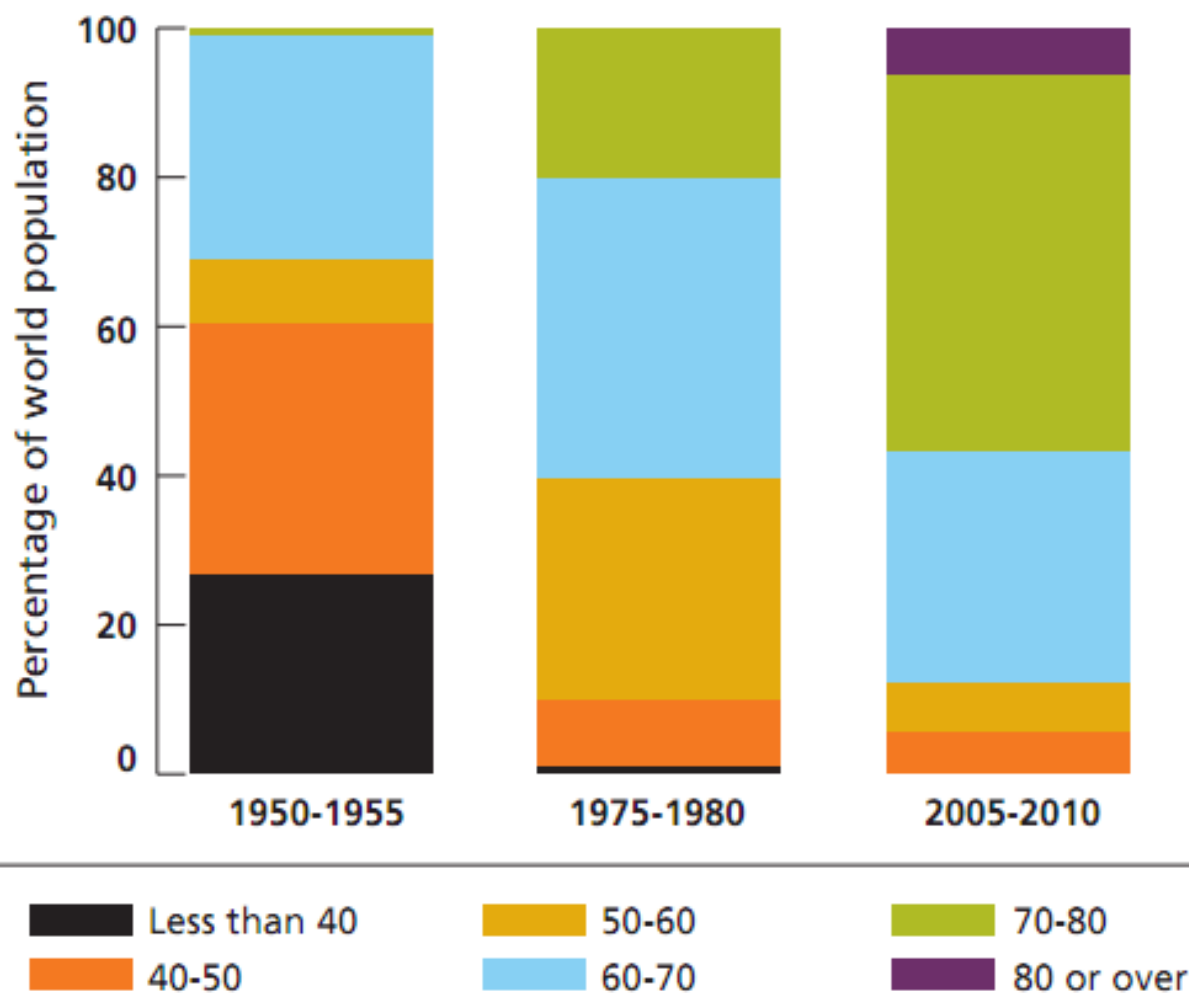
- China and India both one billion+
- Growth – high fertility, mainly African, countries
- 7 of the top 10 growth rates are in Africa
- Immigration key factor in developed countries

# A World Transformed: a healthier world

## Life Expectancy at Birth, in Years

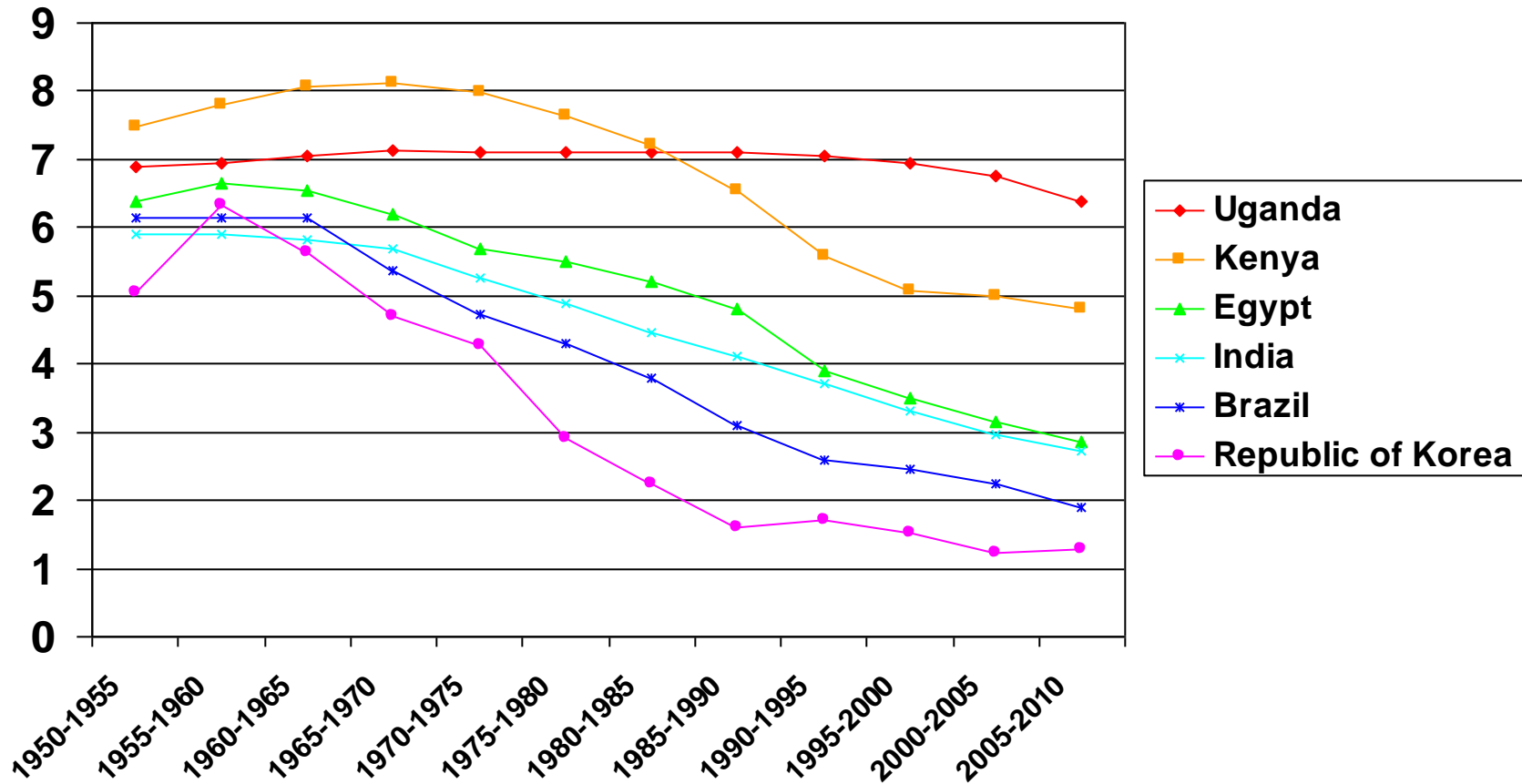


# Share of world population by level of life expectancy 1950–2010



# A World Transformed: With smaller families

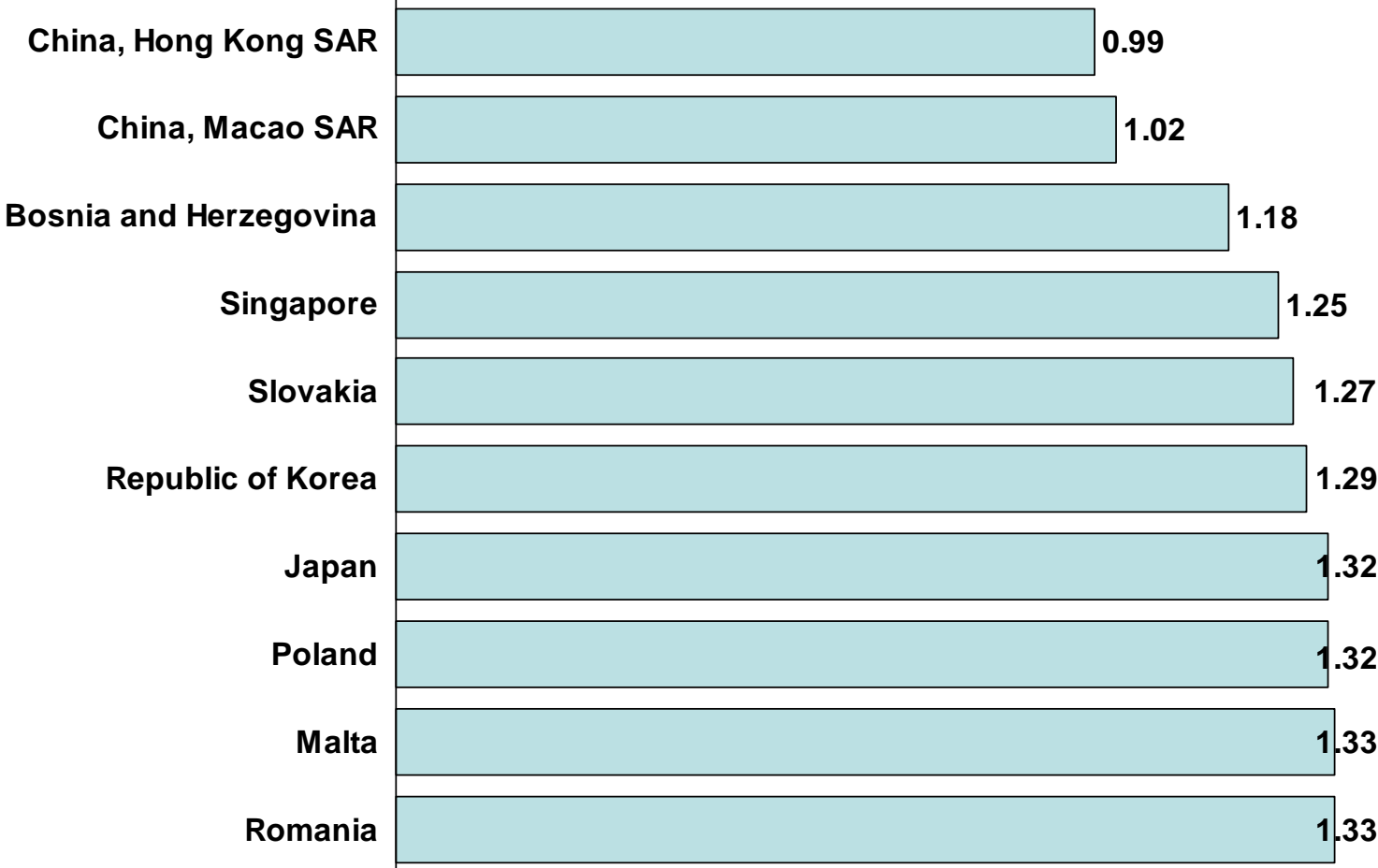
## Average number of children per woman



# 10 Places With the Lowest Total Fertility Worldwide



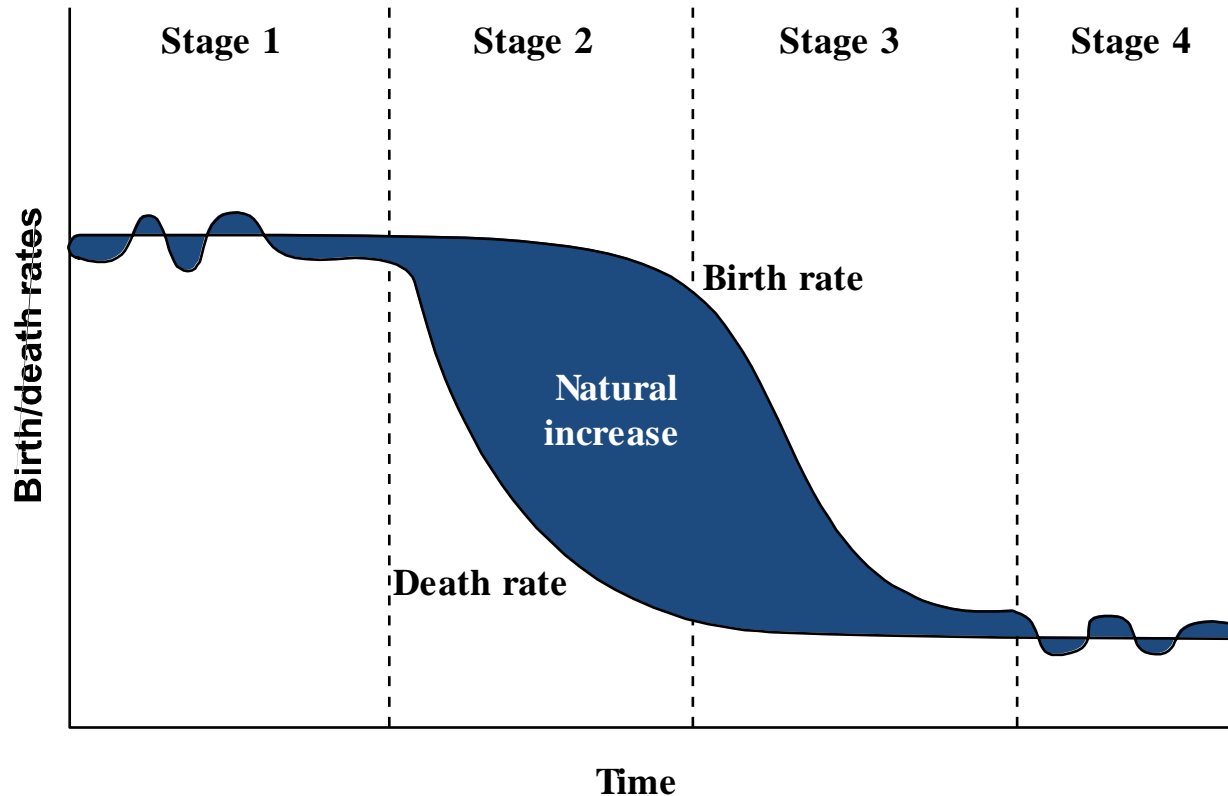
## Average number of children per woman, 2005-2010



Source: United Nations, *World Population Prospects: The 2010 Revision*, 2011.

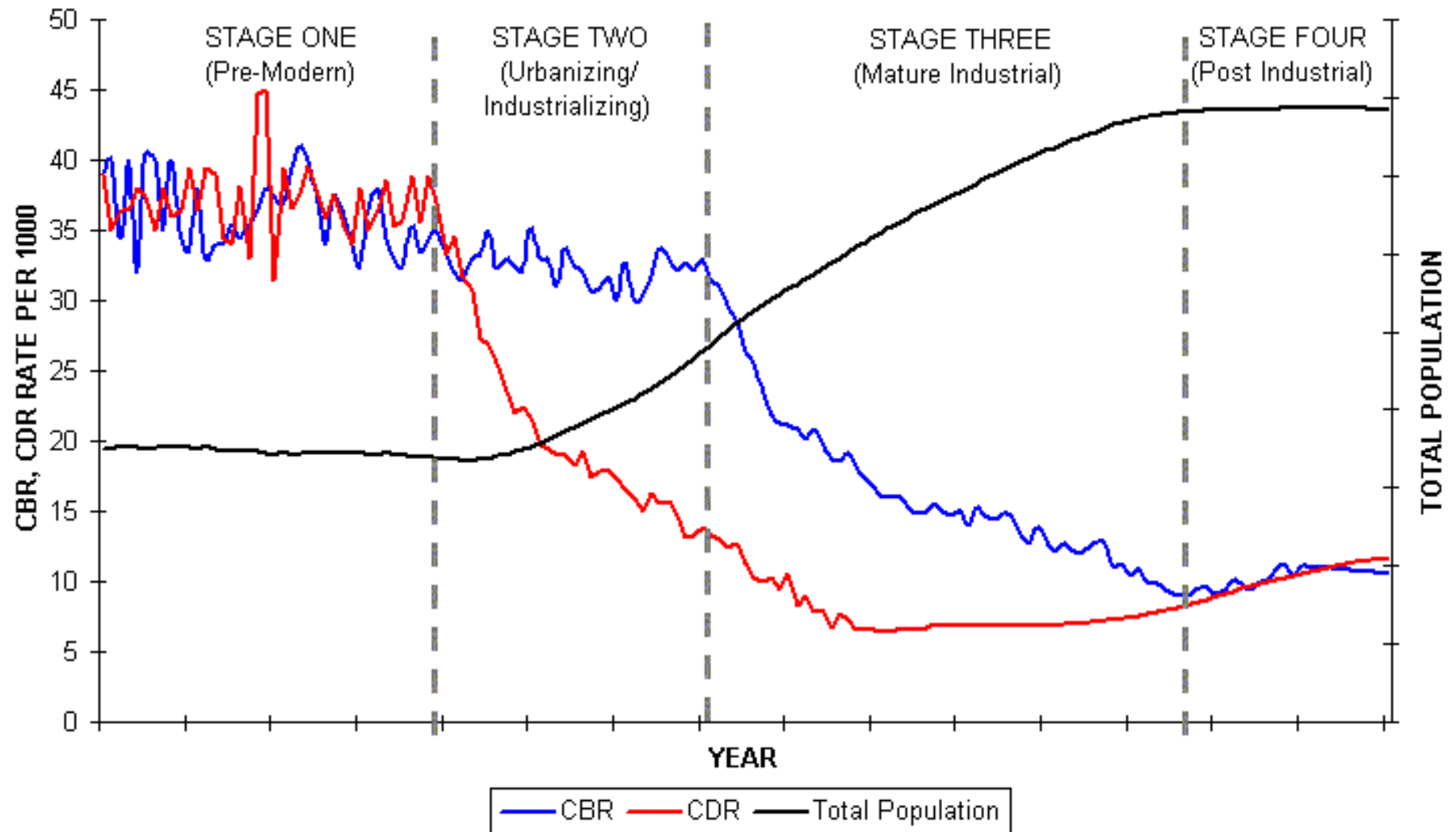


# 'Driving' the population wave: The classic stages of demographic transition

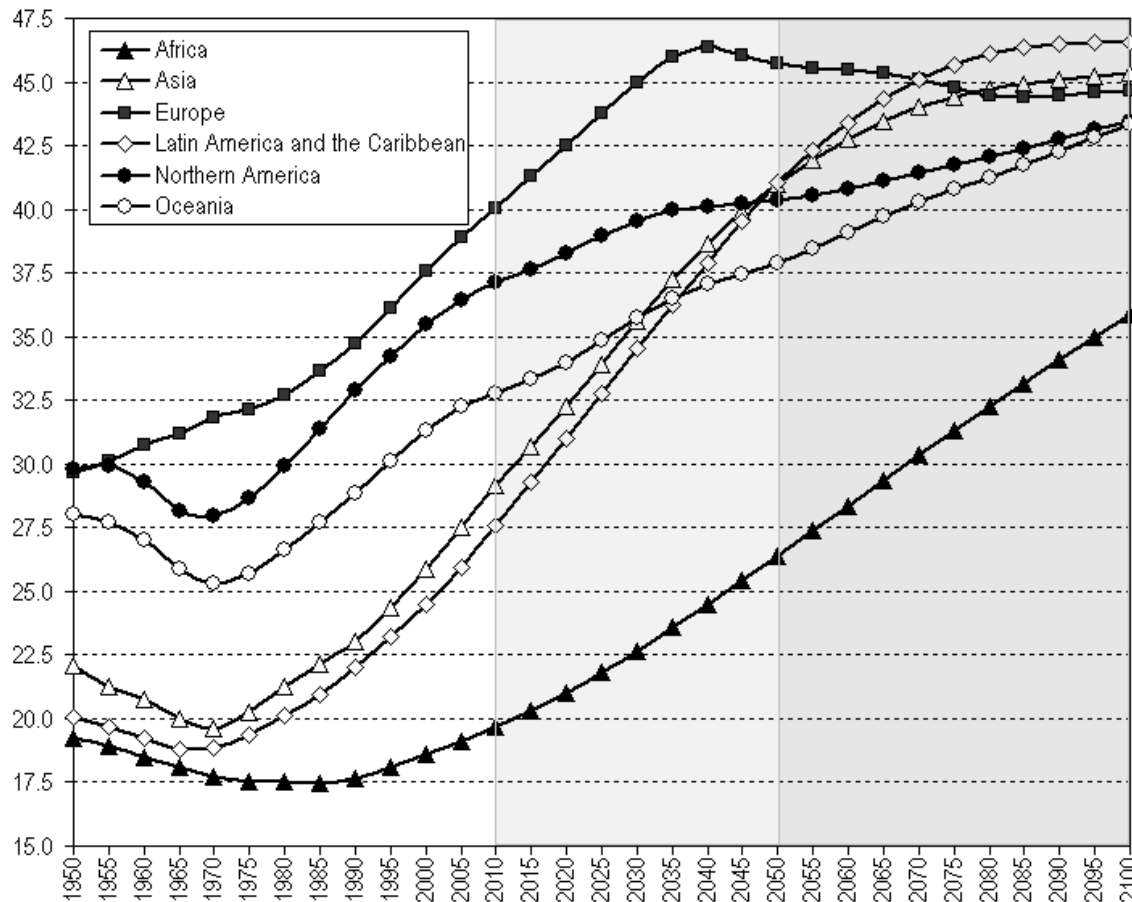


Note: Natural increase is produced from the excess of births over deaths.

## THE DEMOGRAPHIC TRANSITION MODEL

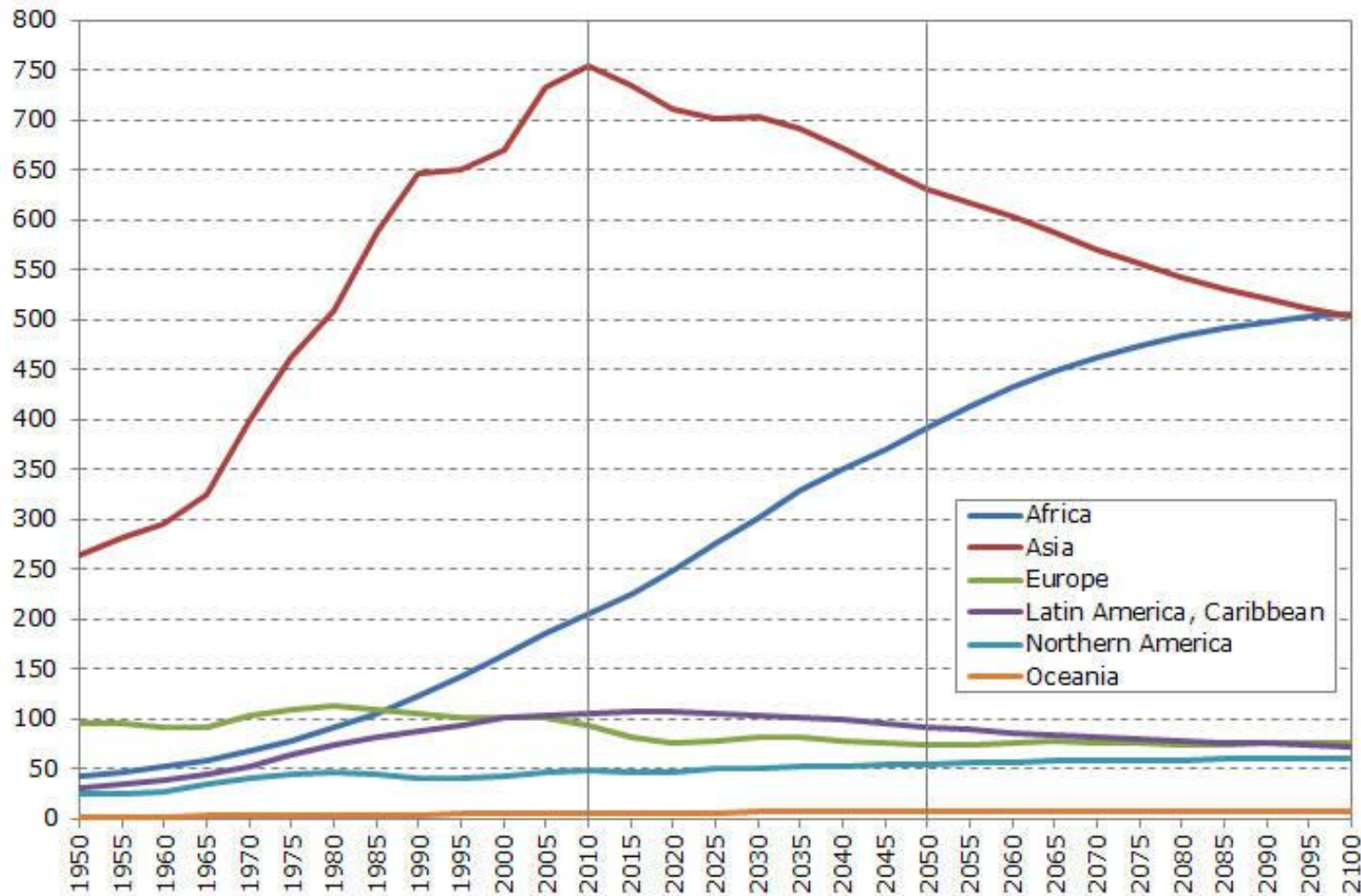


# The 'Age' Wave: Median age in different regions of the world



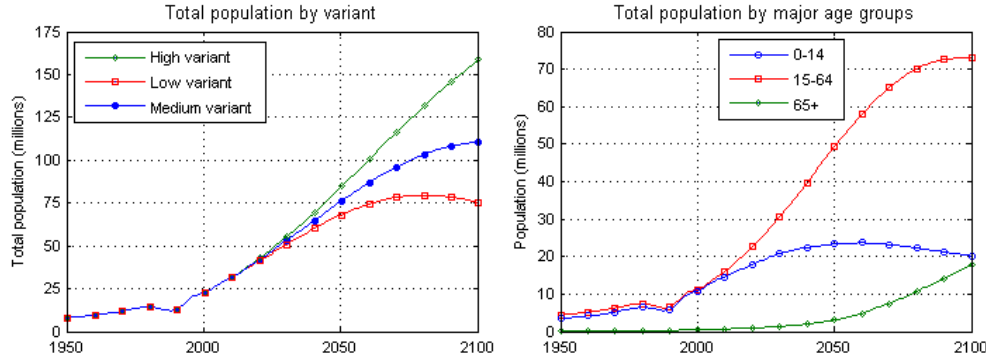
# Capitalising on the 'Age' Wave:

## Population age 15-24 by major regions (millions)

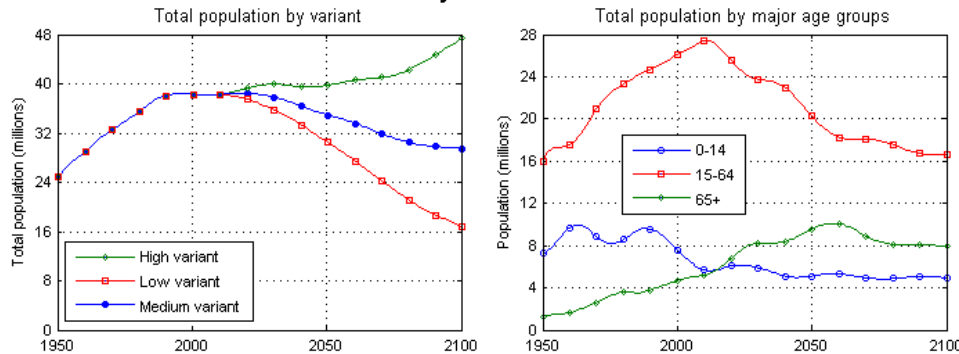


# Differential waves

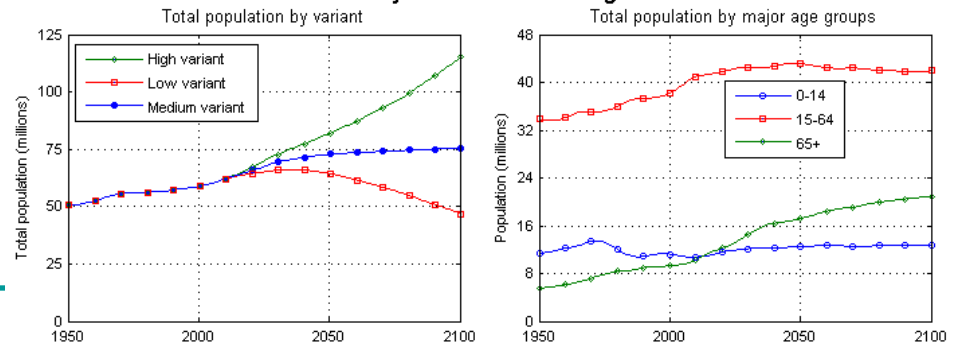
## Country Profile: Afghanistan



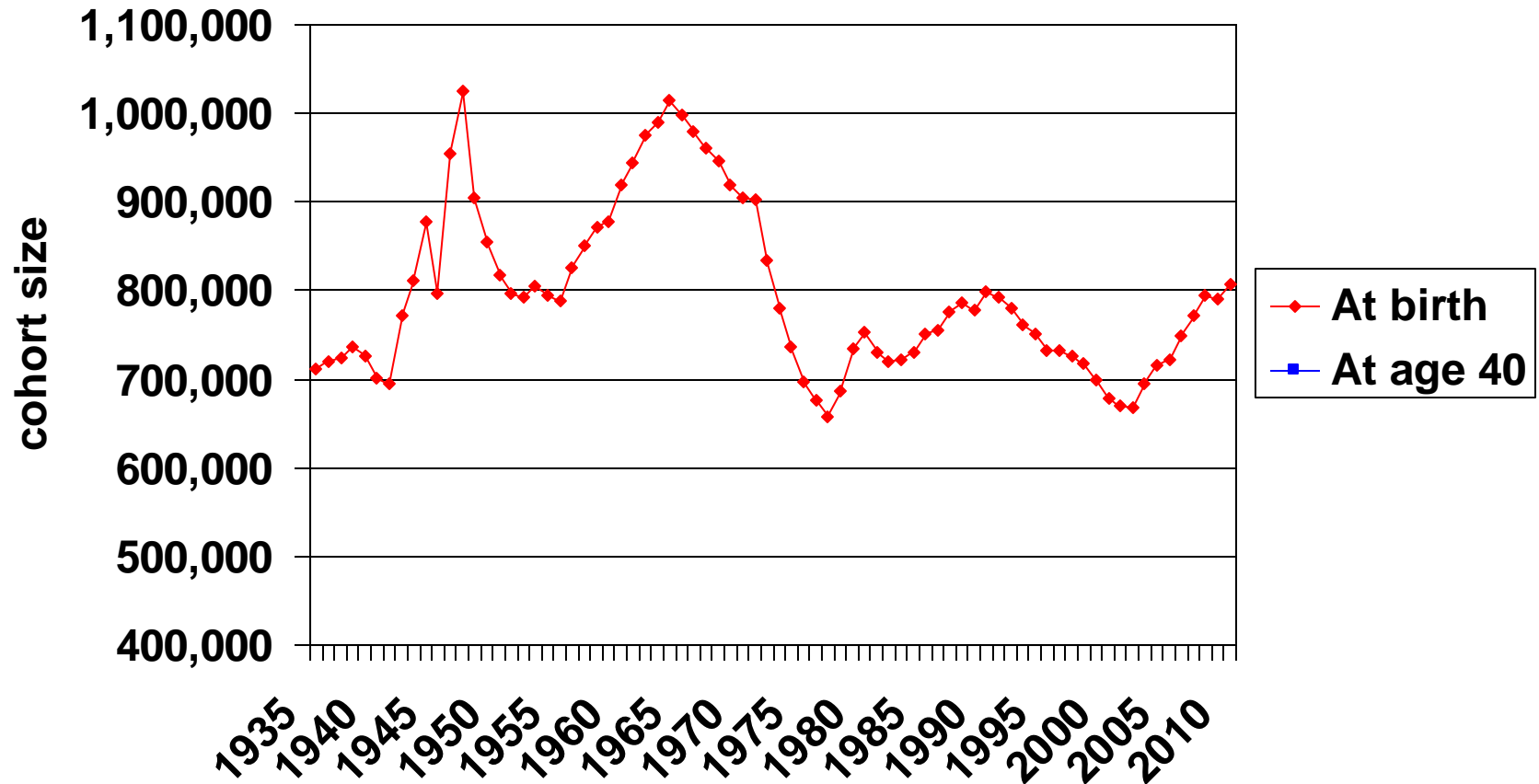
## Country Profile: Poland



## Country Profile: United Kingdom

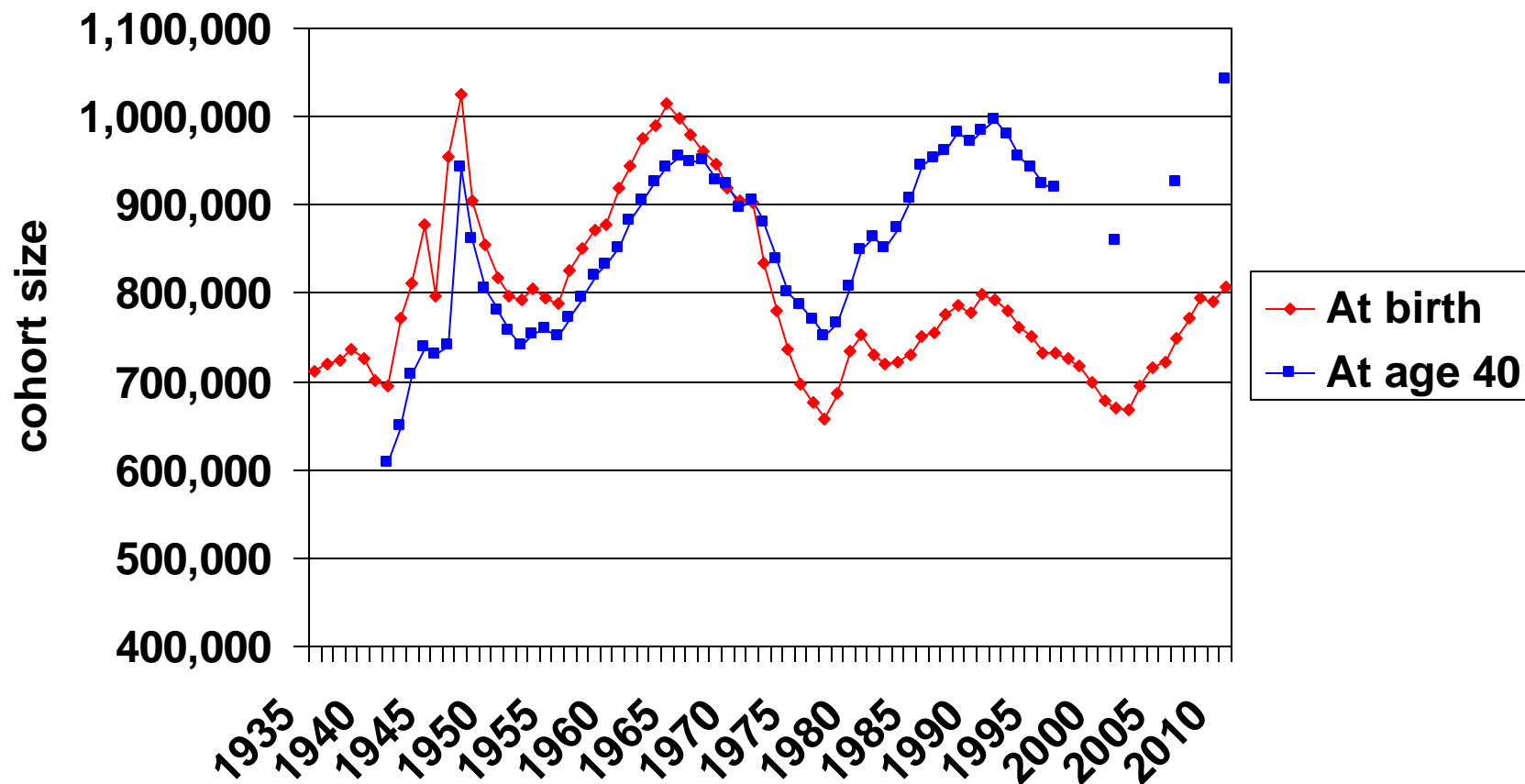


# Waves 'transformed': Baby Boomers in the UK



Source: ONS UK vital statistics 1935- 2010, & 2010 population projections

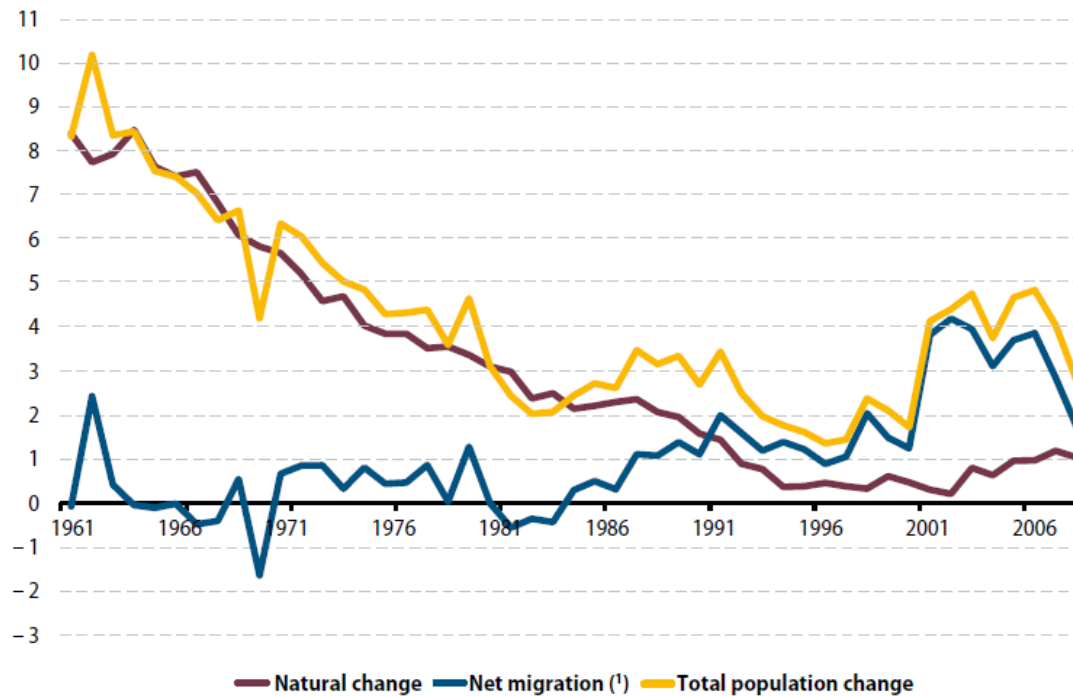
# Waves 'transformed': Baby Boomers in the UK



Source: ONS UK vital statistics 1935- 2010, & 2010 population projections

# The Migration Wave

**Figure I:** Population change by component, EU-27, 1990–2009  
(per 1 000 population)



(!) Including statistical adjustment.

Source: Eurostat (online data code: [demo\\_gind](#))



# The Migration Wave

**Table I:** Top 10 citizenships of immigrants to EU-27 Member States, 2008

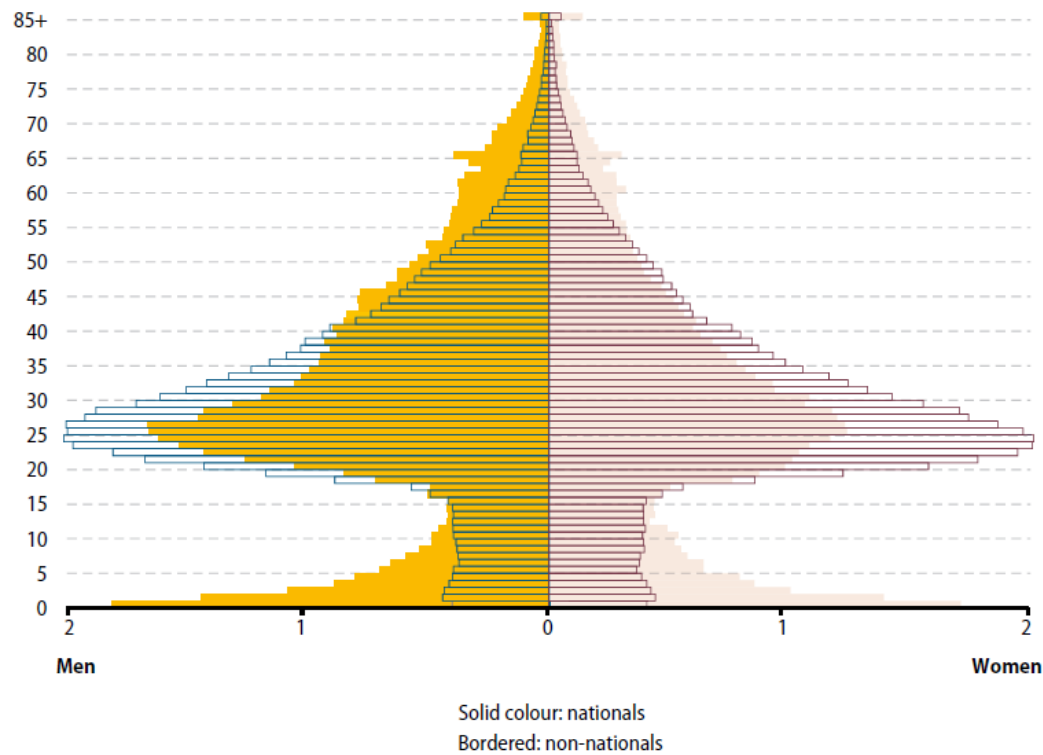
EU citizens (including nationals)		EU citizens (excluding nationals)		Non-EU citizens	
Country of citizenship	(1 000)	Country of citizenship	(1 000)	Country of citizenship	(1 000)
Romania	: <sup>(1)</sup>	Romania	384	Morocco	157
Poland	302	Poland	266	China	97
Germany	196	Bulgaria	91	India	93
United Kingdom	146	Germany	88	Albania	81
France	126	Italy	67	Ukraine	80
Italy	105	France	62	Brazil	62
Bulgaria	92	United Kingdom	61	United States	61
Netherlands	81	Hungary	44	Turkey	51
Spain	61	Netherlands	40	Russian Federation	50
Belgium	48	Portugal	38	Colombia	49

<sup>(1)</sup> At least 384 000.

Source: Eurostat (online data code: [migr\\_imm1ctz](#)) and Eurostat estimates

# The Migration Wave

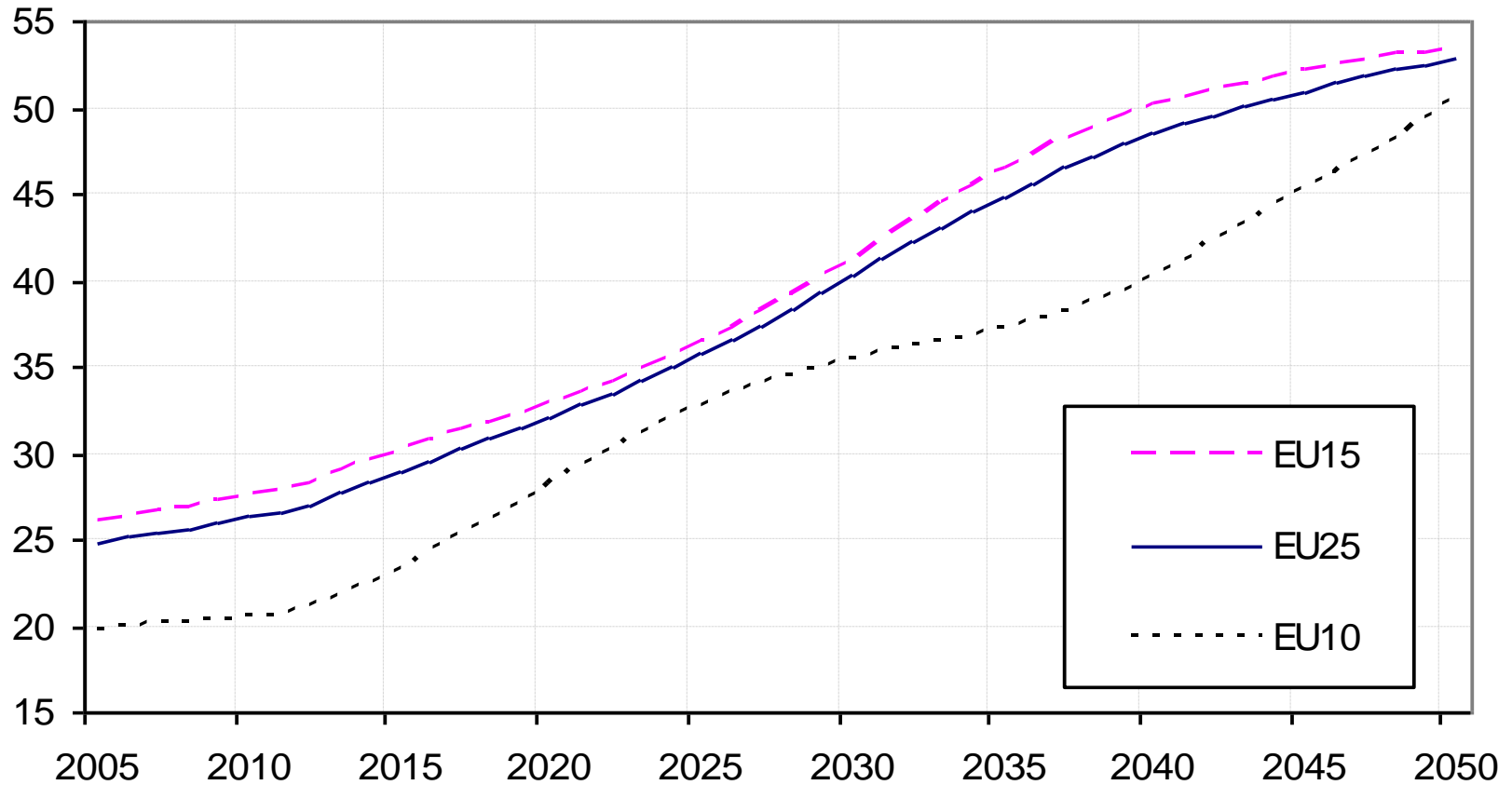
**Figure V:** Age structure of immigrants by basic citizenship groups, EU-27, 2008 (1)  
(%)



(1) EU-27 excluding BE, EL, CY, RO and UK.

Source: Eurostat (online data code: migr\_imm2ctz)

# Riding the age wave: Old-age dependency ratio in the EU, 2005-2050



Source: Eurostat 2005 projections

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# Deconstructing the wave

## Demographic determinism?



- Demographic dependency ratio

$$\frac{0-19\text{yrs} + 65+\text{yrs}}{20-64\text{yrs}}$$

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# Demography is only part of the picture: Work Matters

- Demographic dependency ratio

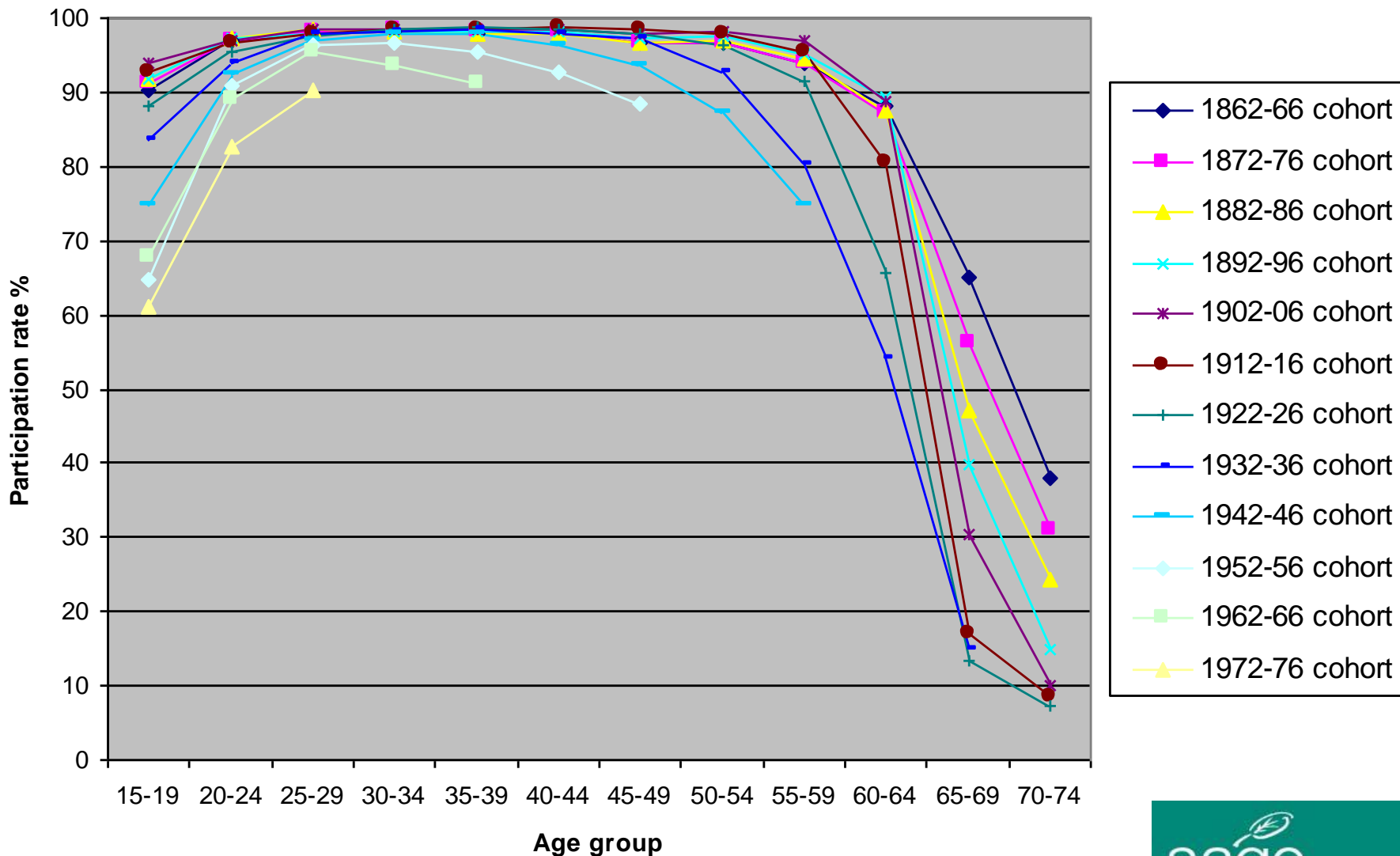
$$\frac{0-19\text{yrs} + 65+\text{yrs}}{20-64\text{yrs}}$$

- Economic dependency ratio

$$\frac{\sum P_x - \sum (P_x \cdot E_x)}{\sum P_x \cdot E_x}$$

Non workers/ workers

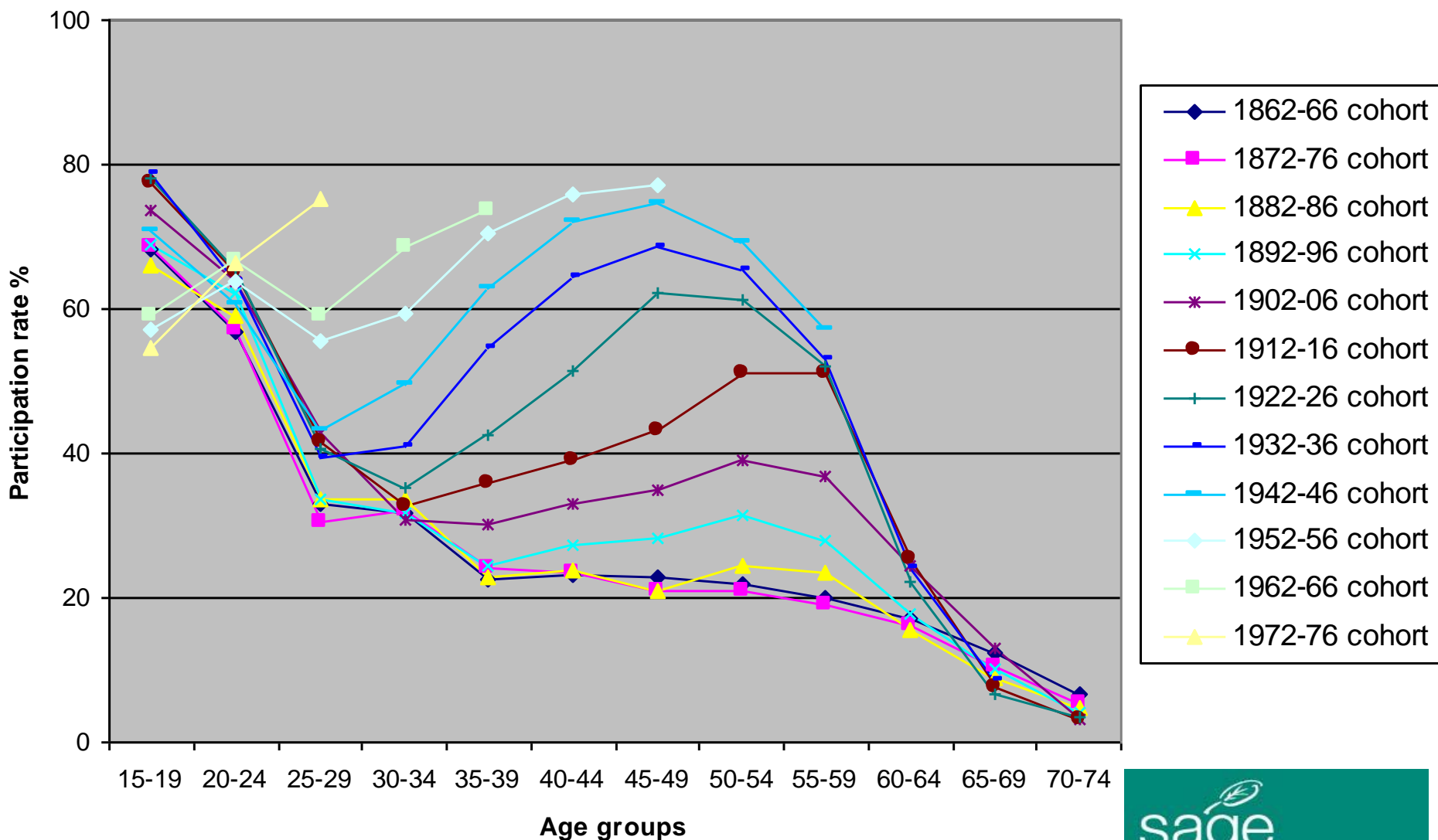
## Cohort participation rates: males, UK



Source: P. Johnson and A. Zaidi (2004) *Work over the life course* Discussion Paper No. 18, ESRC SAGE Research Group, London School of Economics, London.

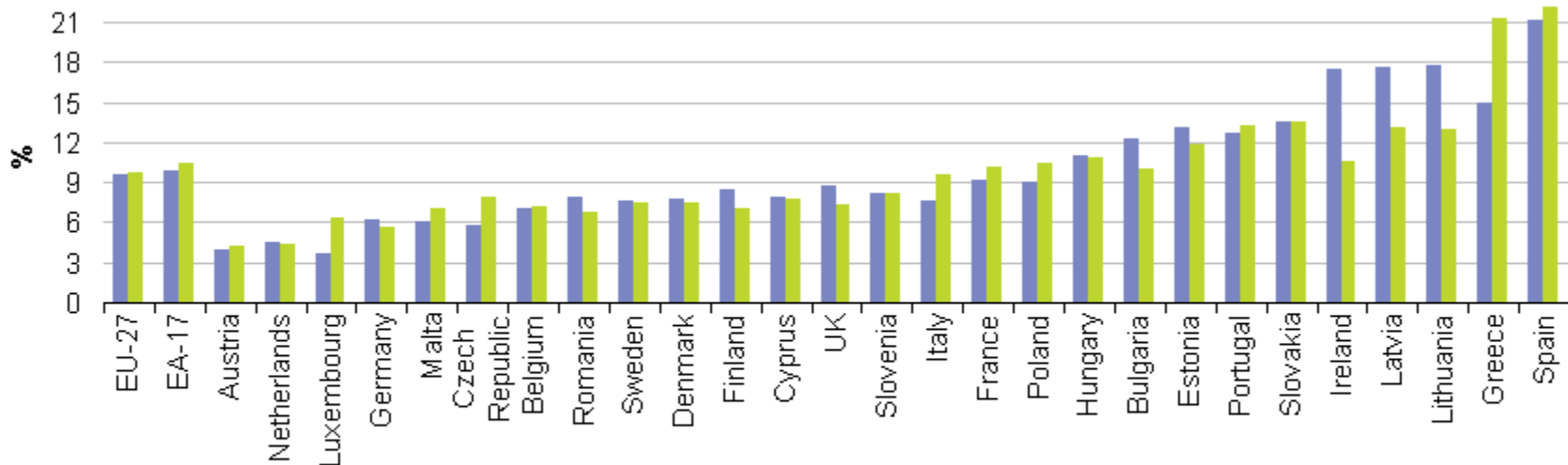


## Cohort participation rates: females, UK



Source: P. Johnson and A. Zaidi (2004) *Work over the life course* Discussion Paper No. 18, ESRC SAGE Research Group, London School of Economics, London.

# Unemployment Rates by Sex EU Member States, 2011



(1) The figure is ranked on the average of male and female  
Source: Eurostat (une\_rt\_a)

■ Male      ■ Female

Source: Eurostat, 2012



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# Demography is only part of the picture: Pension membership matters

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- Demographic dependency ratio

$$\frac{0-19\text{yrs} + 65+\text{yrs}}{20-64\text{yrs}}$$

- Economic dependency ratio

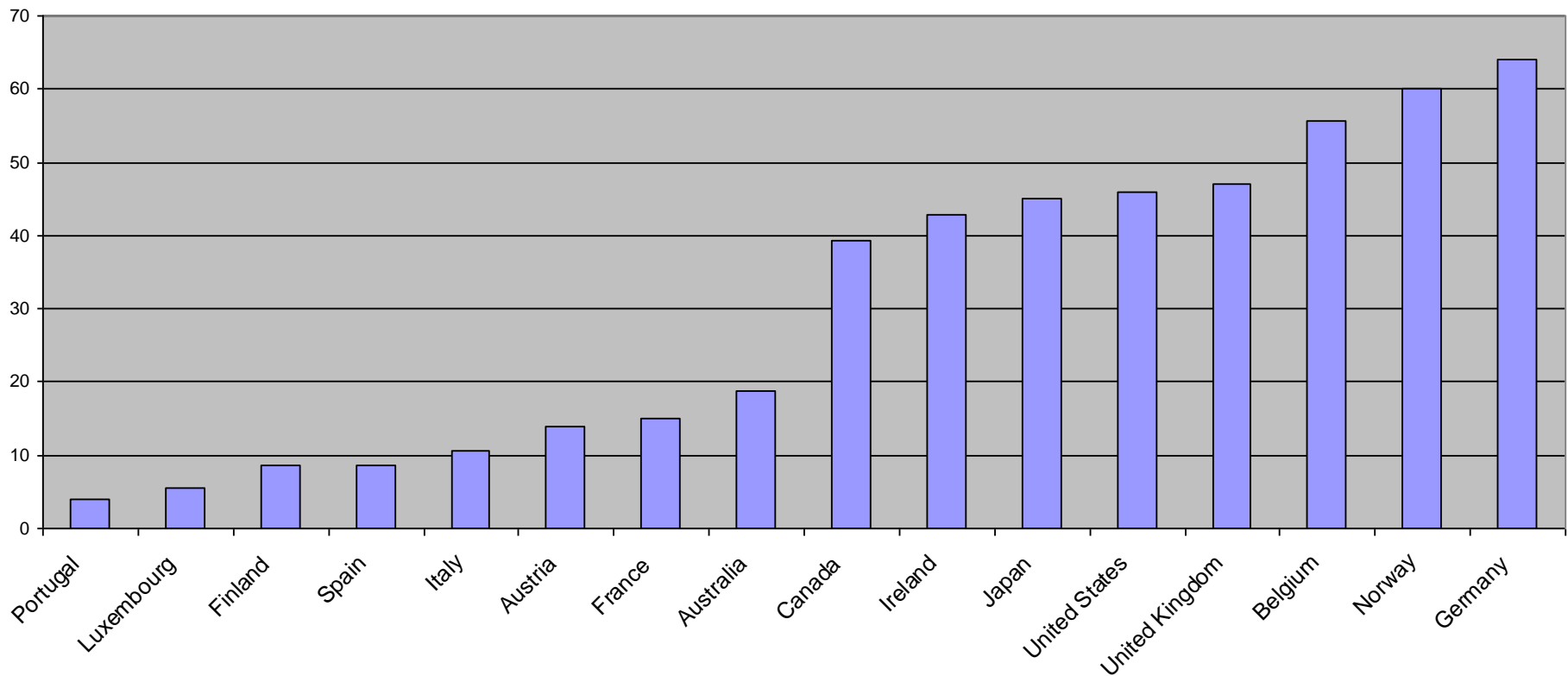
$$\frac{\sum P_x - \sum (P_x \cdot E_x)}{\sum P_x \cdot E_x}$$

Non workers/ workers

- System dependency ratio

Beneficiaries / Contributors

# Coverage of Occupational Pensions, OECD August 2009



Source: OECD, 2010

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# Deconstructing the wave

## Policy levers



- Age is *not* the only factor that determines whether a person contributes or benefits (Falkingham, 1989)
- Other factors amenable to policy intervention are also important:
  - Unemployment
  - Female labour force participation
  - Age of entry into work and exit to retirement
  - Membership of pension schemes
  - Level of benefits, contribution rates and earnings profiles

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# The challenge is to catch the wave and to ride safely it to shore

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**Thank you !**