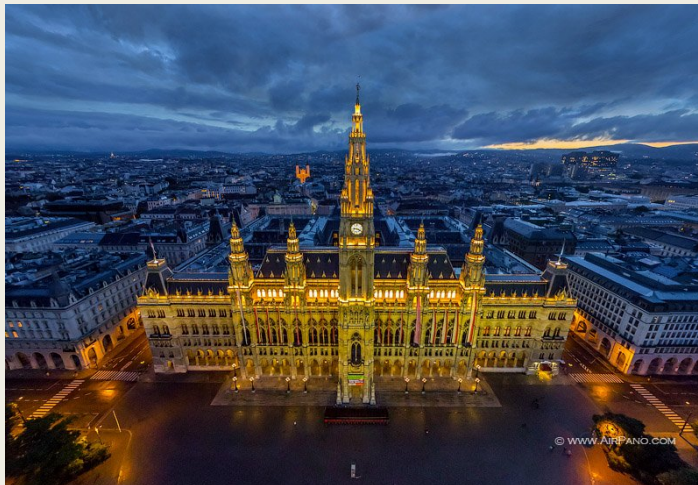


# Past, Present, and Future Perspectives on REVES, and “My Brilliant Career”



Dr. Sandy Reynolds  
George Myers Memorial Lecture,  
REVES 28  
Vienna, Austria

# Agenda

## 1. The Past

*REVES and My Career – vaguely, 1990 through 2015*

## 2. The Present

*The State of Health in the World (largely according to OECD and WHO)*

## 3. The Future

*Future Health Concerns*

# Who Ruled the World? 1990

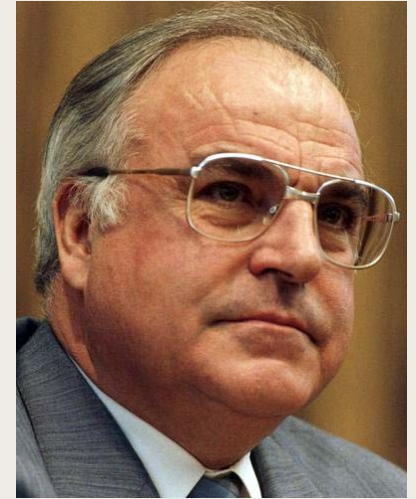
Margaret Thatcher



Li Peng



Toshiki Kaifu



Helmut Kohl



Francois Mitterrand



Mikhail Gorbachev



George H.W. Bush

# Who Rules The World: Now



David Cameron



Le Keqiang



Angela Merkel



Francois  
Hollande



Vladimir Putin



Shinzo Abe



Barack Obama



Well, some things never change

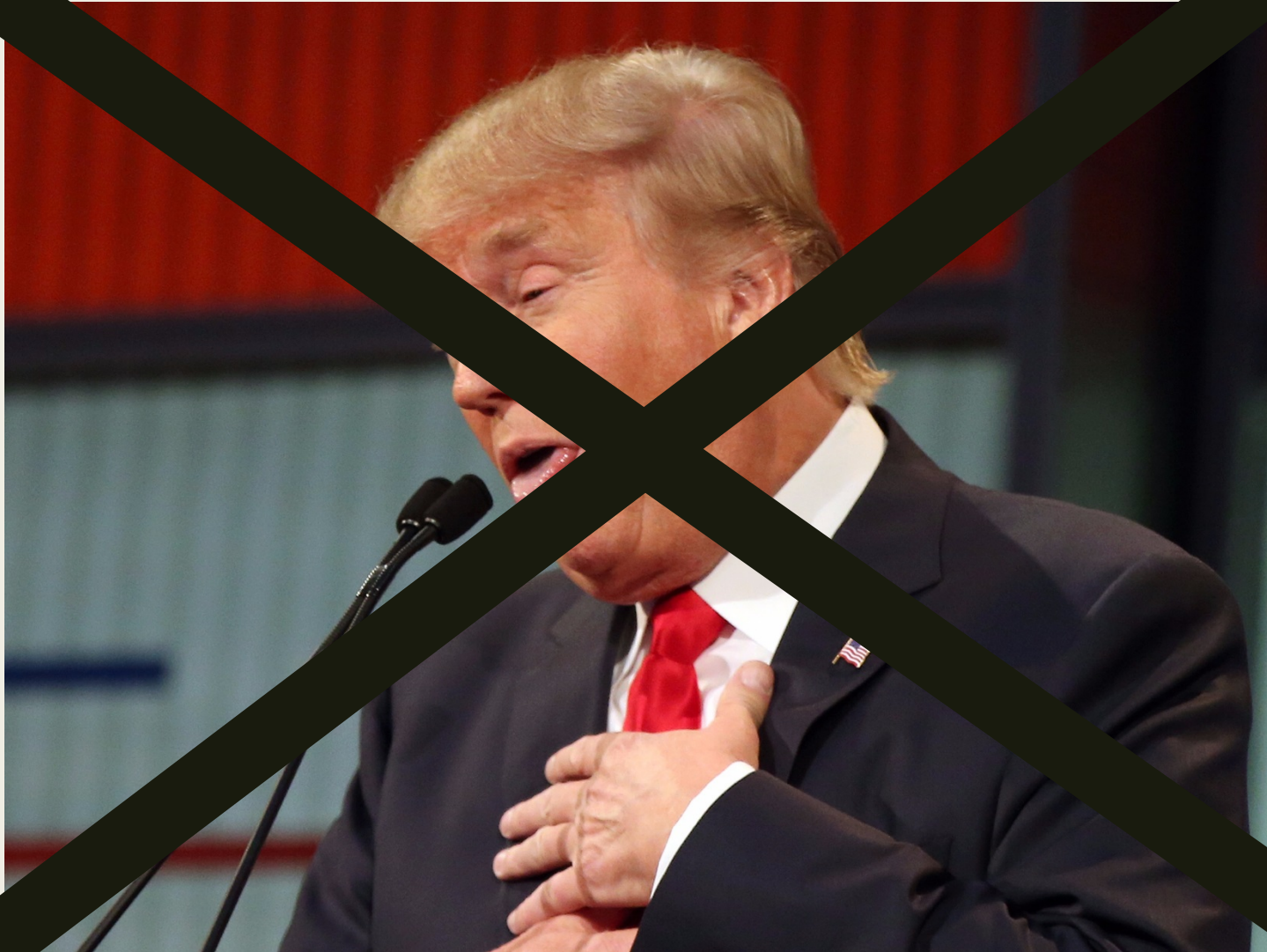


1990



NOW

And In the Future?



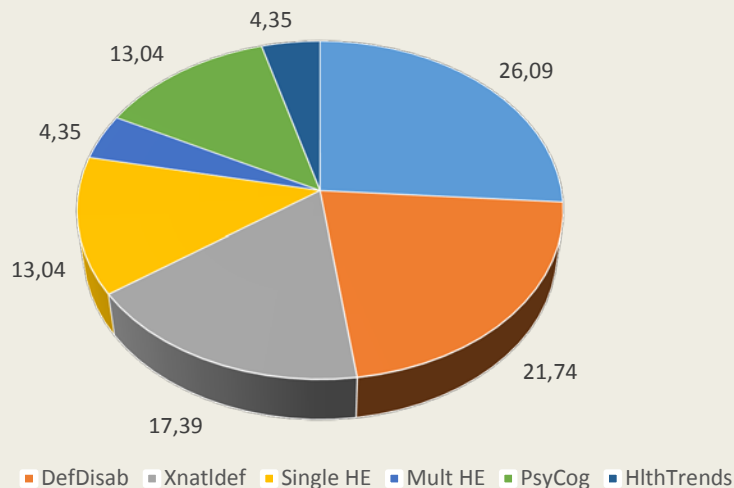
# In the Beginning: 1989-1990

## ■ REVES

- *1990 Geneva*
- *1990 Durham*

## ■ MOI!

- *Still in Banking in New England*



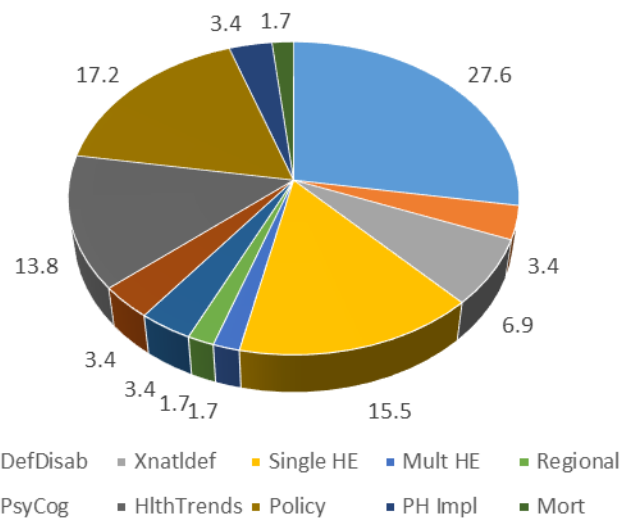
# Then 1991-1993

## ■ REVES

- 1991 Leiden
- 1992 Ottawa
- 1993?

## ■ MOI

- Fall, 1991 - USC!





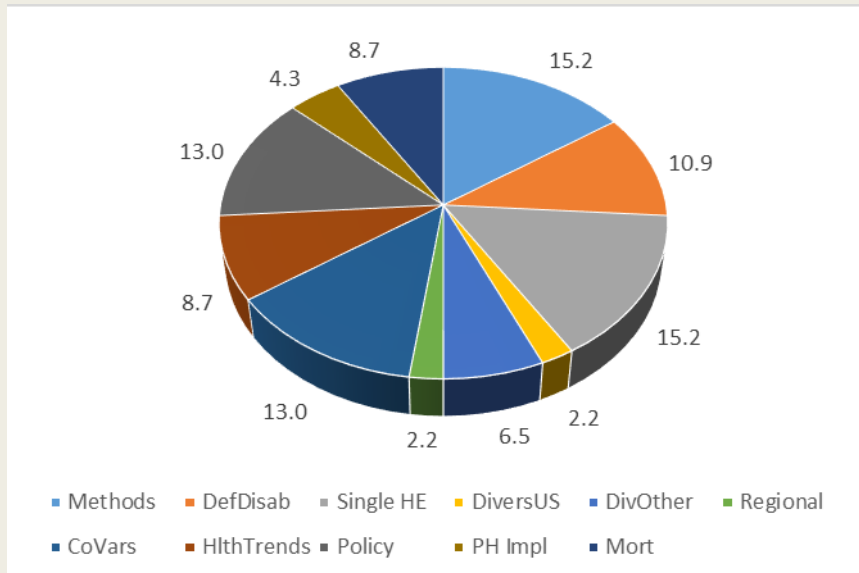
# Then 1994-5!

## ■ REVES

- *1994 Canberra*
- *1995 Chicago*

## ■ MOI

- *started working with Eileen! 1994*
- *1995 - PhD*



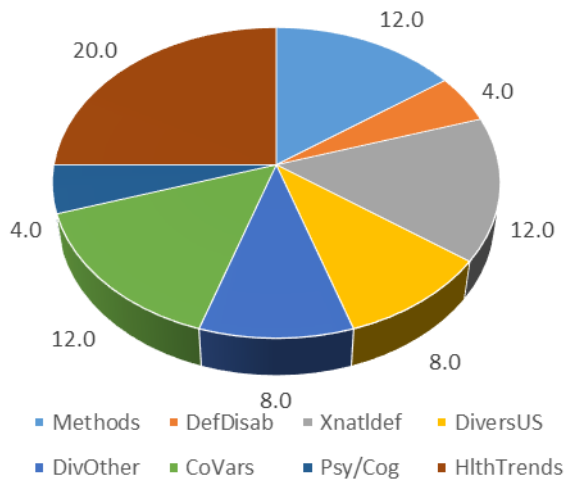
# 1996

- REVES

- *1996 - Rome!*

- MOI -

- *Graduation and*
  - *USF!!*



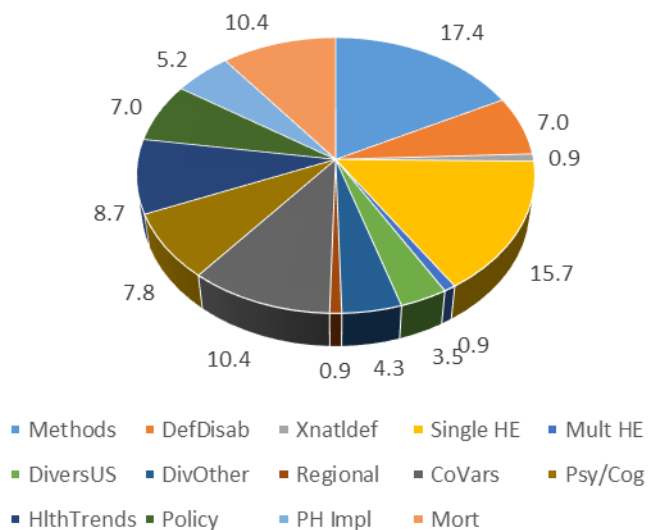
# 1997- 2000

## ■ REVES

- 1997 Tokyo
- 1999 London
- 2000 Los Angeles

## ■ MOI

- *Publish, Publish, Publish*
  - My own Guardianship Research
  - With Eileen and Saito



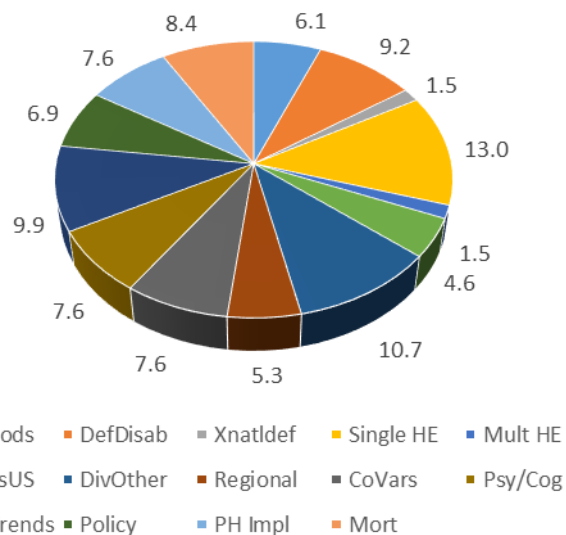
# 2001 - 2003

## ■ REVES

- 2001 Vancouver
- 2002 Hammamet
- 2003 Guadalajara

## ■ MOI

- *Publish, Publish, Publish*
  - My own Guardianship Research
  - With Eileen and Saito
- 2002 - **TENURE!!!**
- **And my first REVES in 2003!**





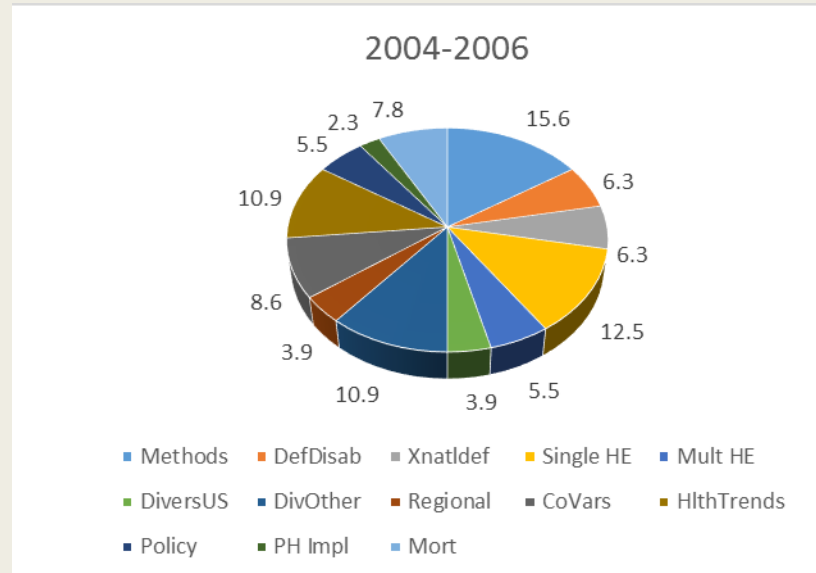
# 2004 - 2006

## ■ REVES

- 2004 Bruges
- 2005 Beijing
- 2006 Amsterdam

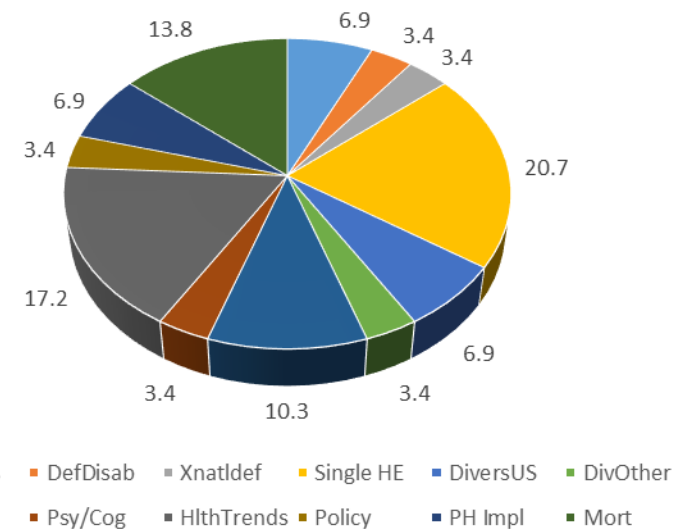
## ■ MOI

- *Sabbatical with Eileen*
- *Publish, Publish, Publish*
  - Obesity and Active Life Expectancy
  - With Eileen and Saito
- *And Spin-offs*
- *Treasurer of GSA!!*

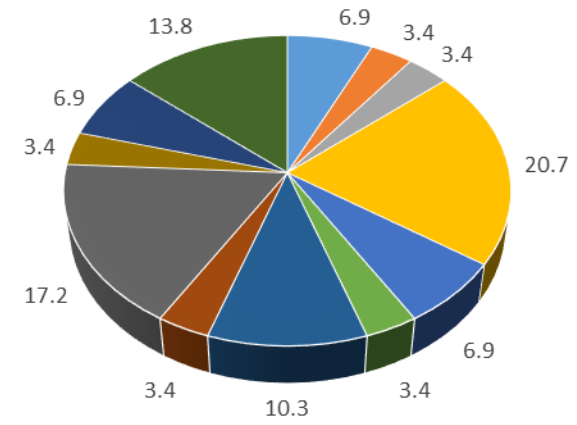


# 2007 – REVES and I COINCIDE:

## St. Petersburg Beach, Florida



# 2007 – REVES and I COINCIDE



- Methods
- DefDisab
- Xnatldef
- Single HE
- DiversUS
- DivOther
- CoVars
- Psy/Cog
- HlthTrends
- Policy
- PH Impl
- Mort

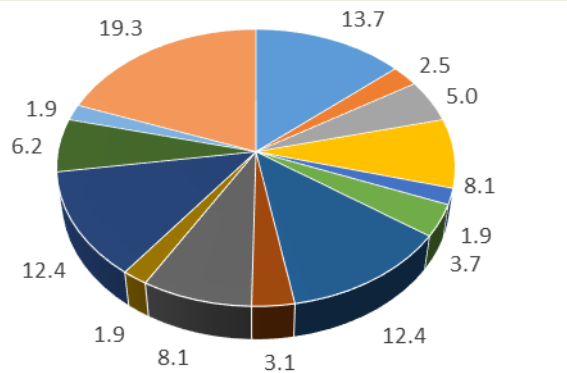
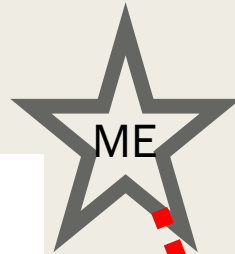
# 2008 - 2011

## ■ REVES

- 2008 Manila
- 2009 Copenhagen
- 2010 Havana!
- 2011 Paris!!!!

## ■ MOI

- Publish, Publish
- Administrative Work
- Finished up as GSA Treasurer - 2010
- Master Chorale of Tampa Bay



- Methods ■ DefDisab ■ Xnatldef ■ Single HE ■ Mult HE
- DiversUS ■ DivOther ■ Regional ■ CoVars ■ Psy/Cog
- HlthTrends ■ Policy ■ PH Impl ■ Mort





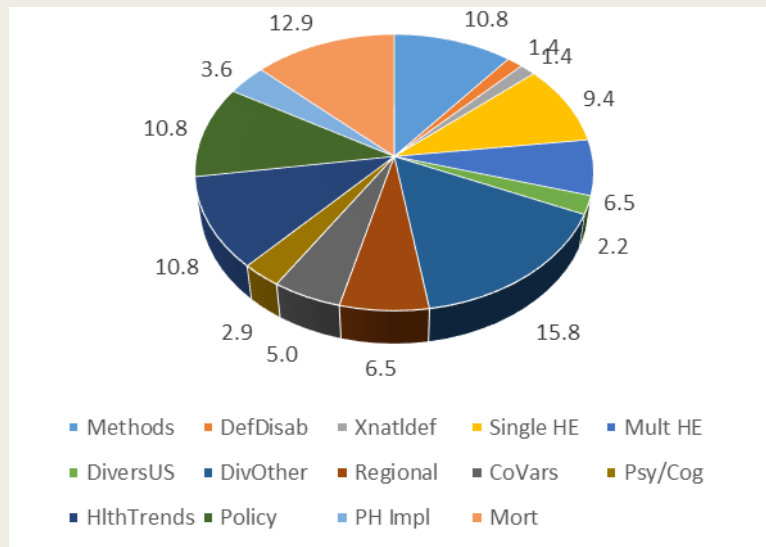
# 2012 - 2014

## ■ REVES

- 2012 Taipei
- 2013 Austin
- 2014 Edinburgh

## ■ MOI

- *Publish, Publish*
- *Administrative Work*
- *Master Chorale of Tampa Bay*



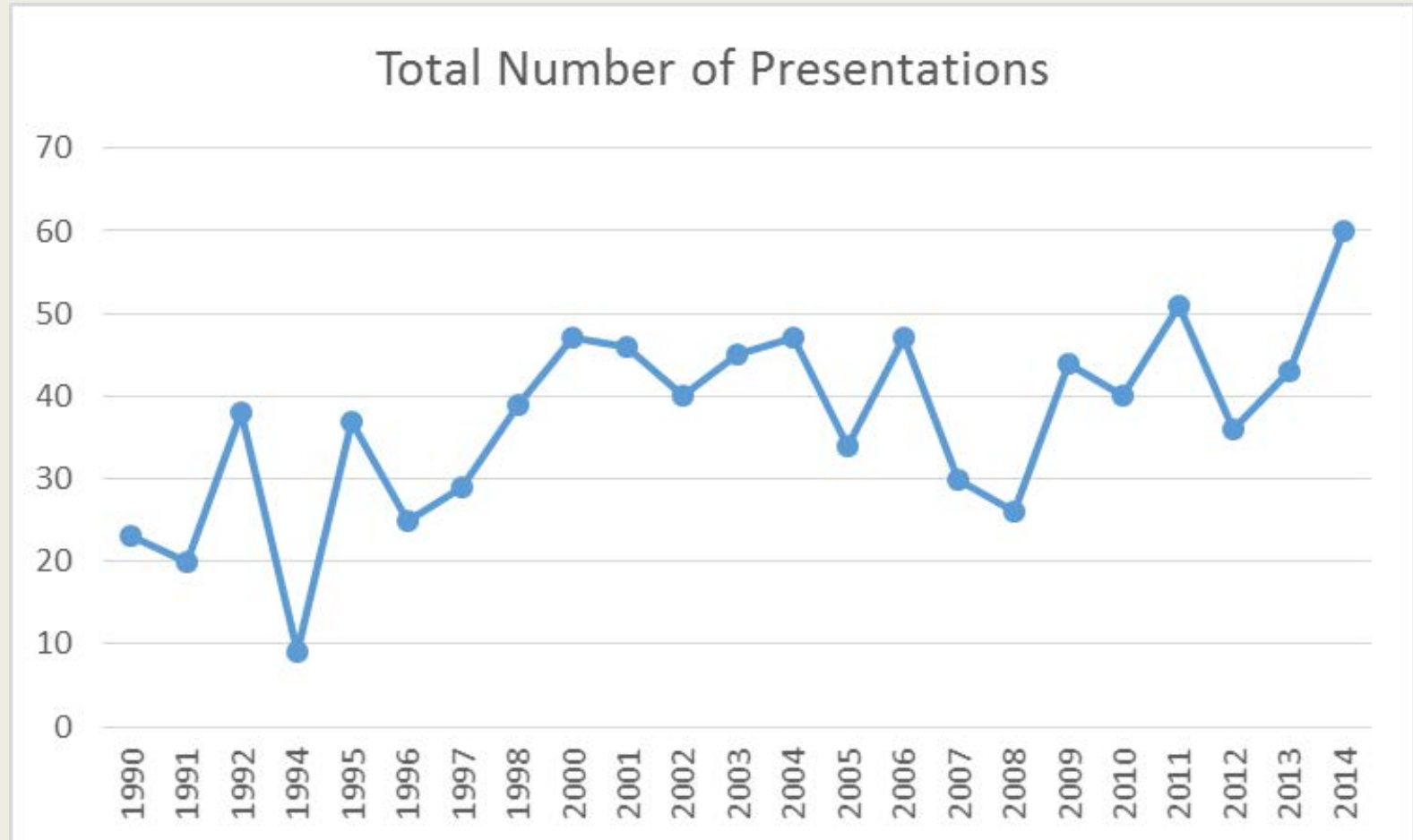
# 2015-2016

- REVES -
  - *2015 Singapore*
  - *2016 Vienna*

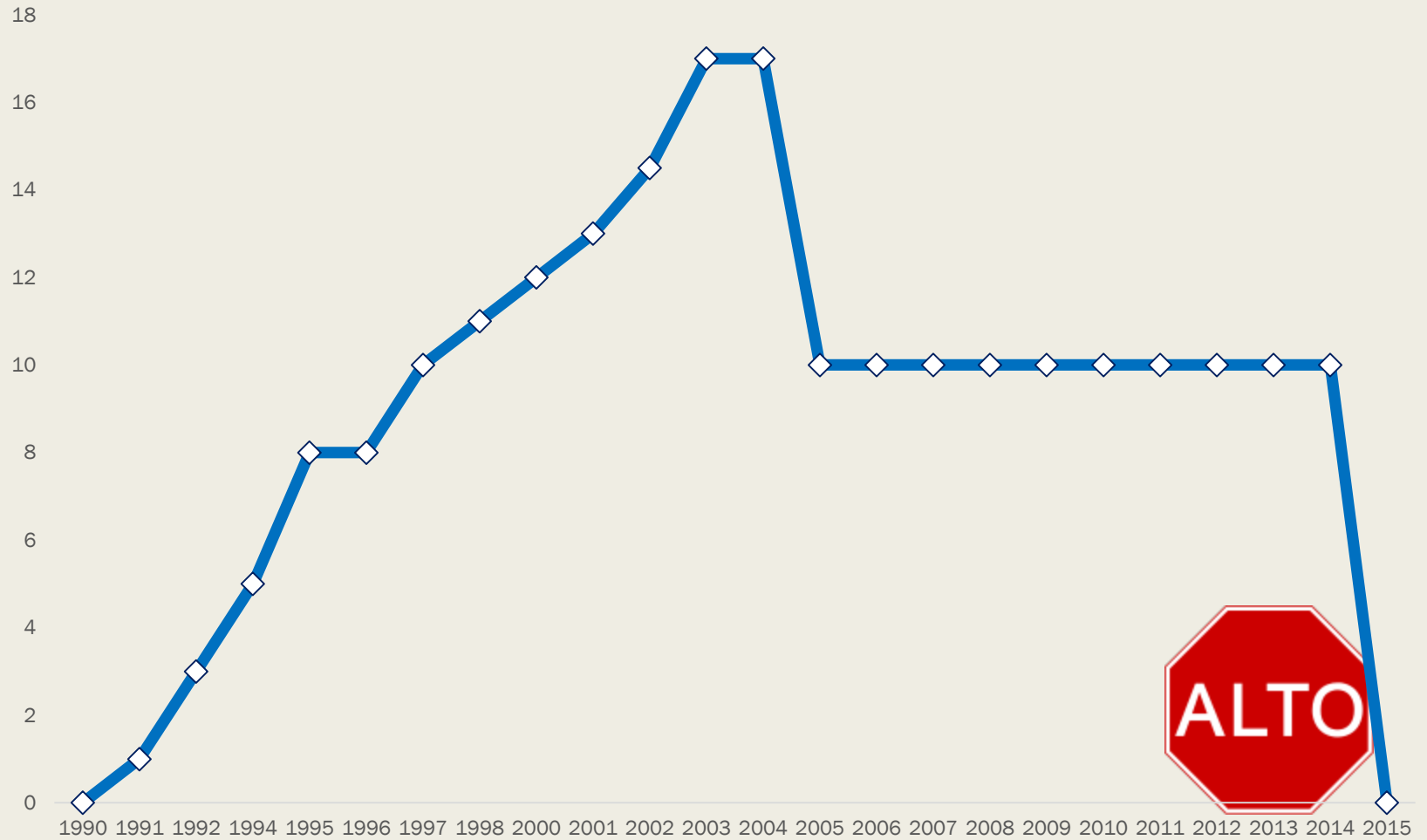
ME - *RETIREMENT!!!*



# REVES Agendas, 1990 - 2014

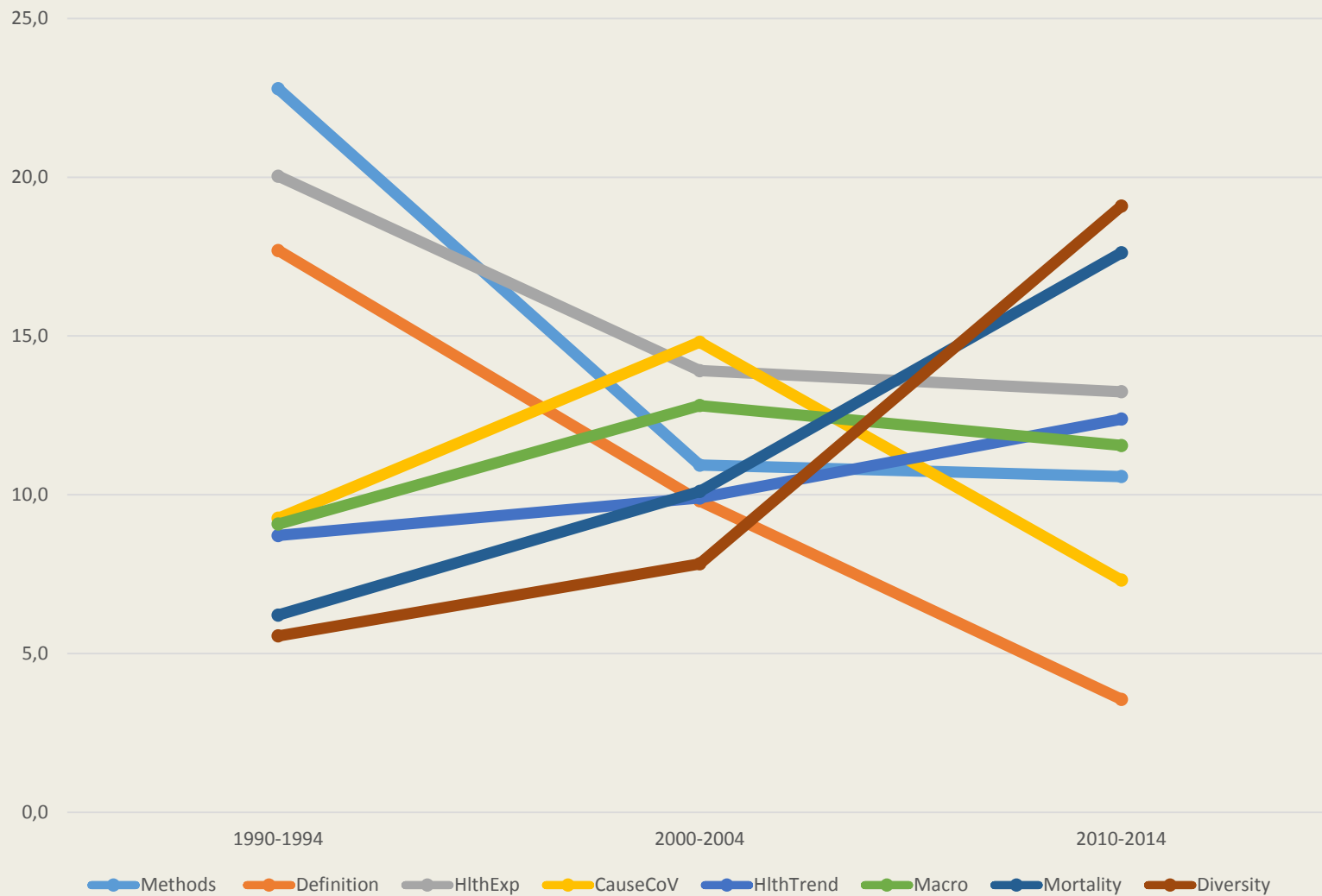


# And My Career





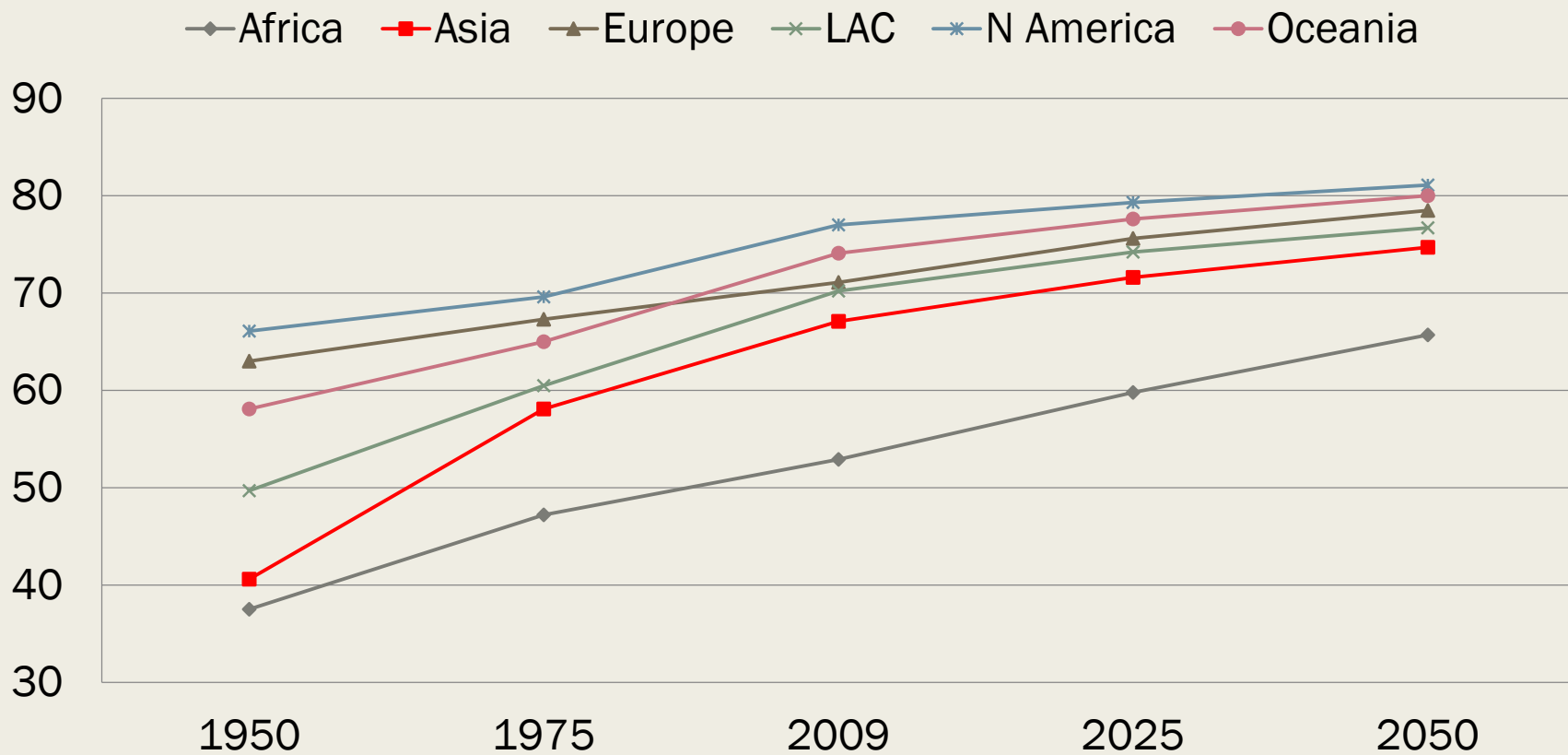
# Topic Trends – Beginning, Middle and End



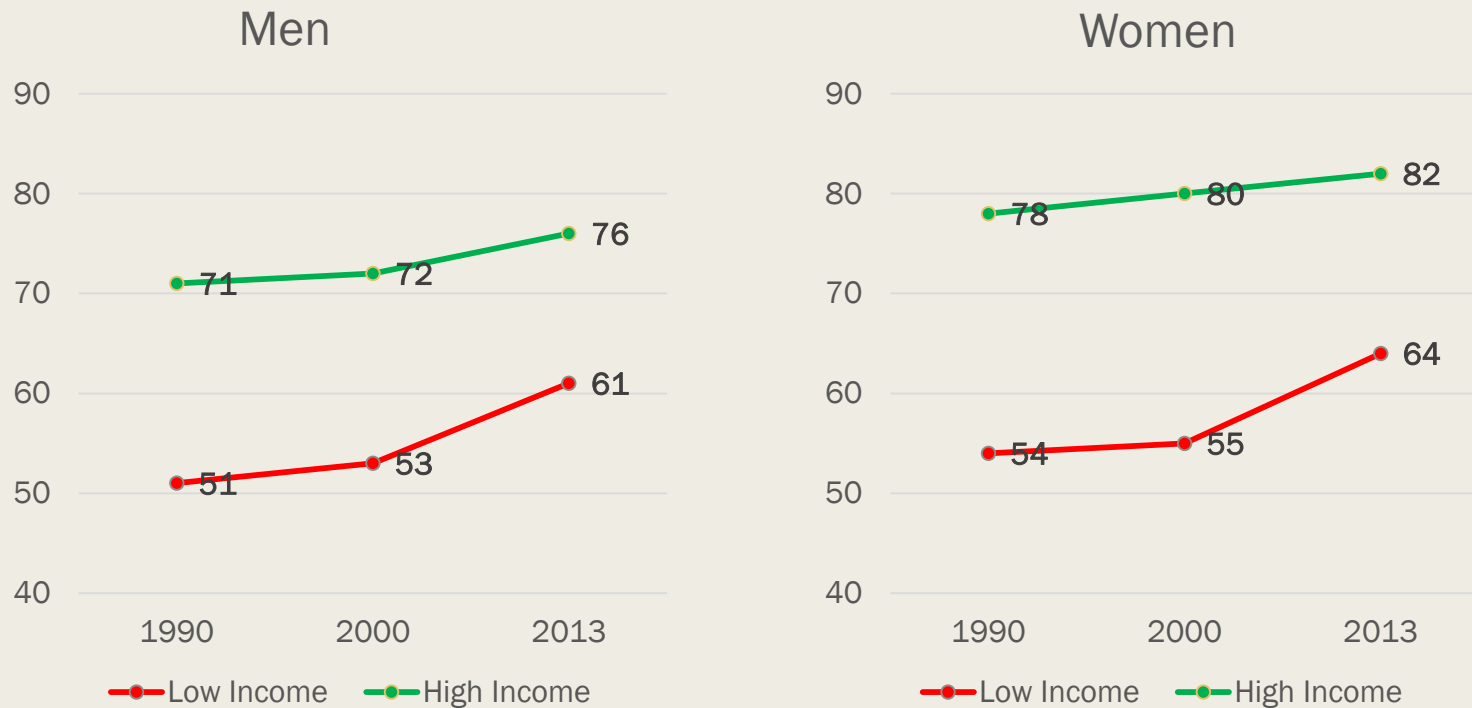


# The Regions

## Life Expectancy at Birth - MALES

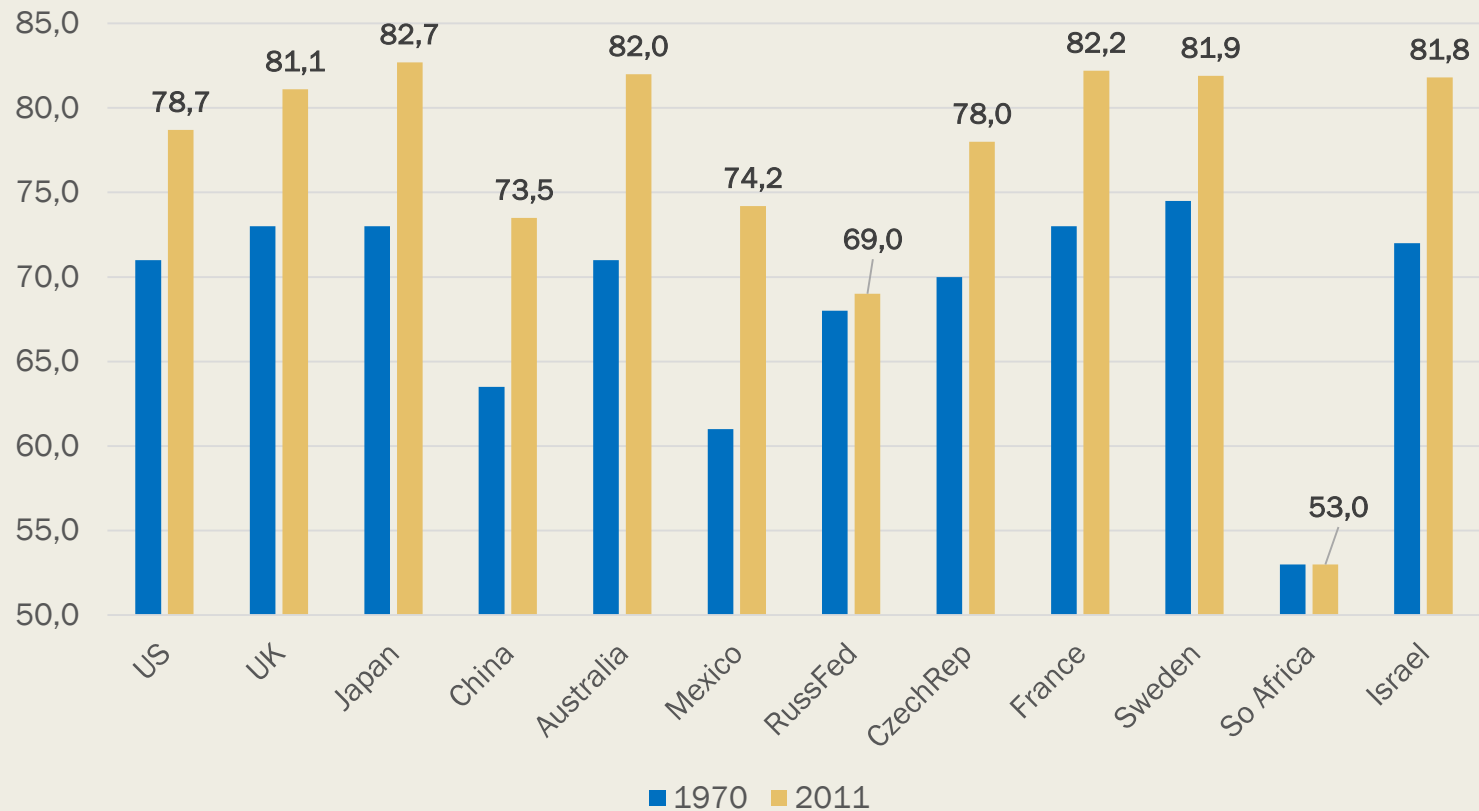


# Life Expectancy at Birth: Global, High and Low Income Countries, Men and Women



Source: WHO, Global Health Observatory Data Repository, Life Expectancy, 2016

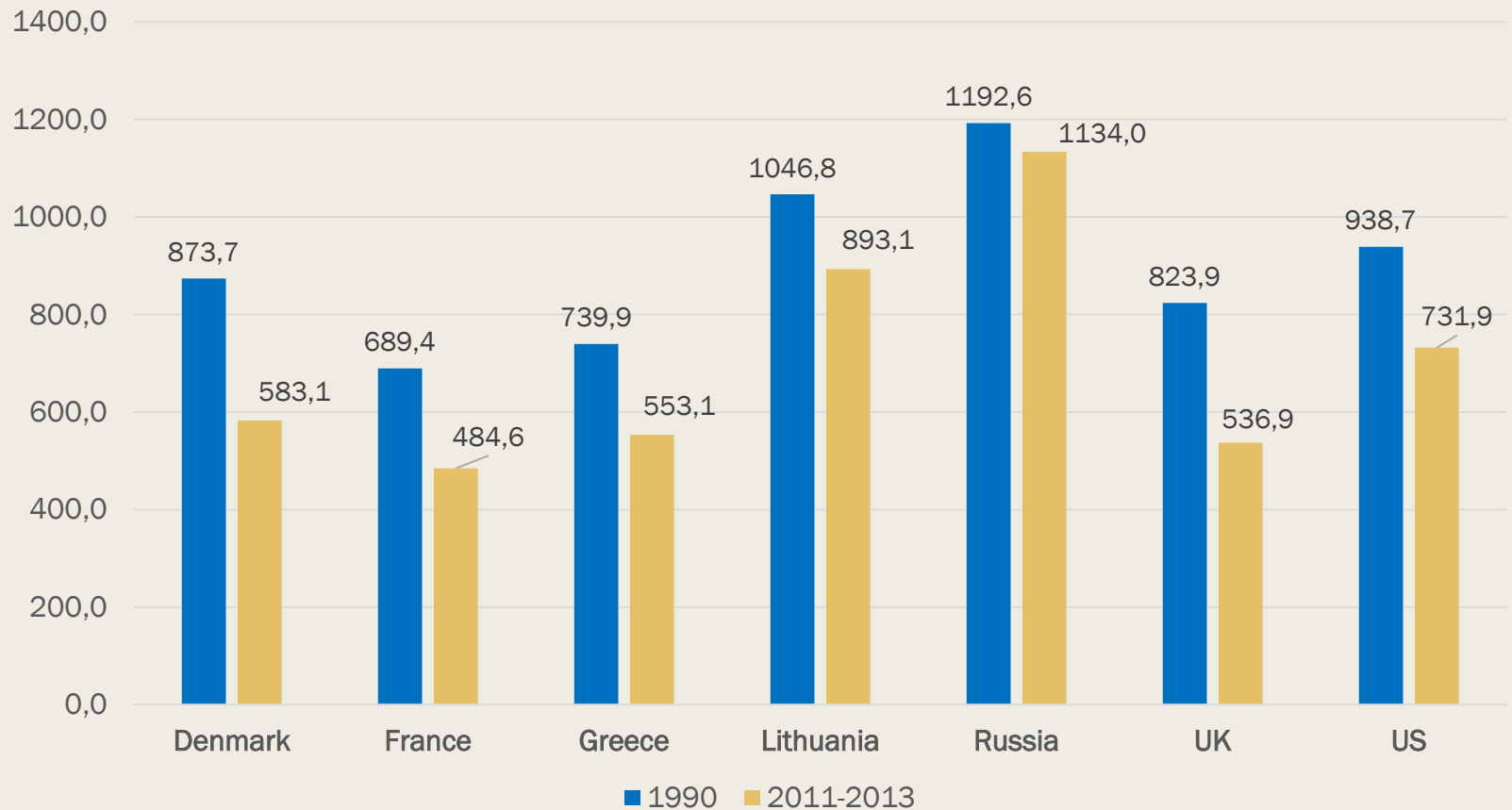
# Specific Countries: LE at Birth, 1970 and 2011



Source: OECD Health Statistics 2013, <http://dx.doi.org/10.1787/health-data-en>; World Bank for non-OECD countries.

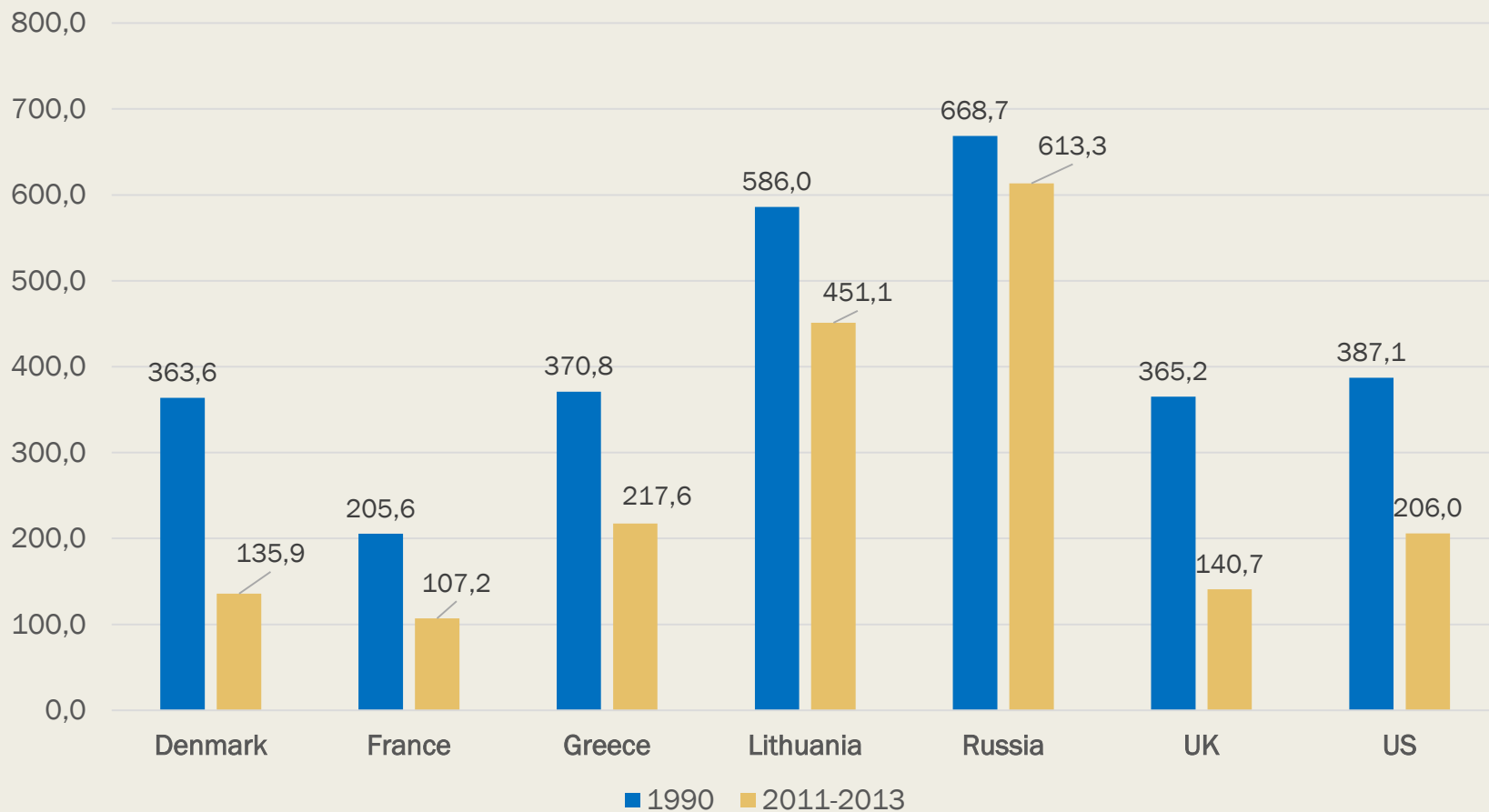


# Death Rates – All Causes (rates per 100,000 pop.)



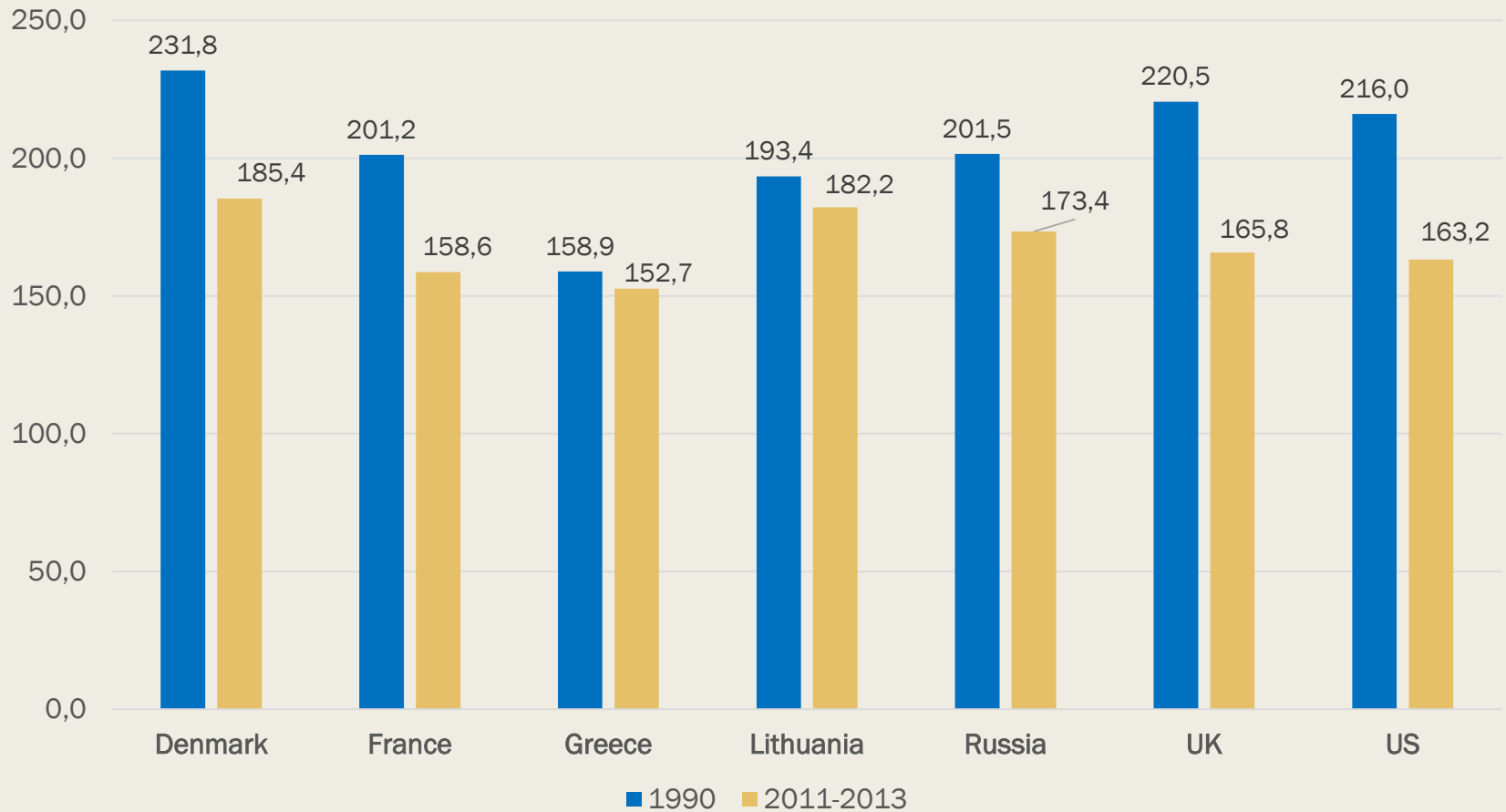
Source: European Health for All Database

# Death Rates – Circulatory Diseases



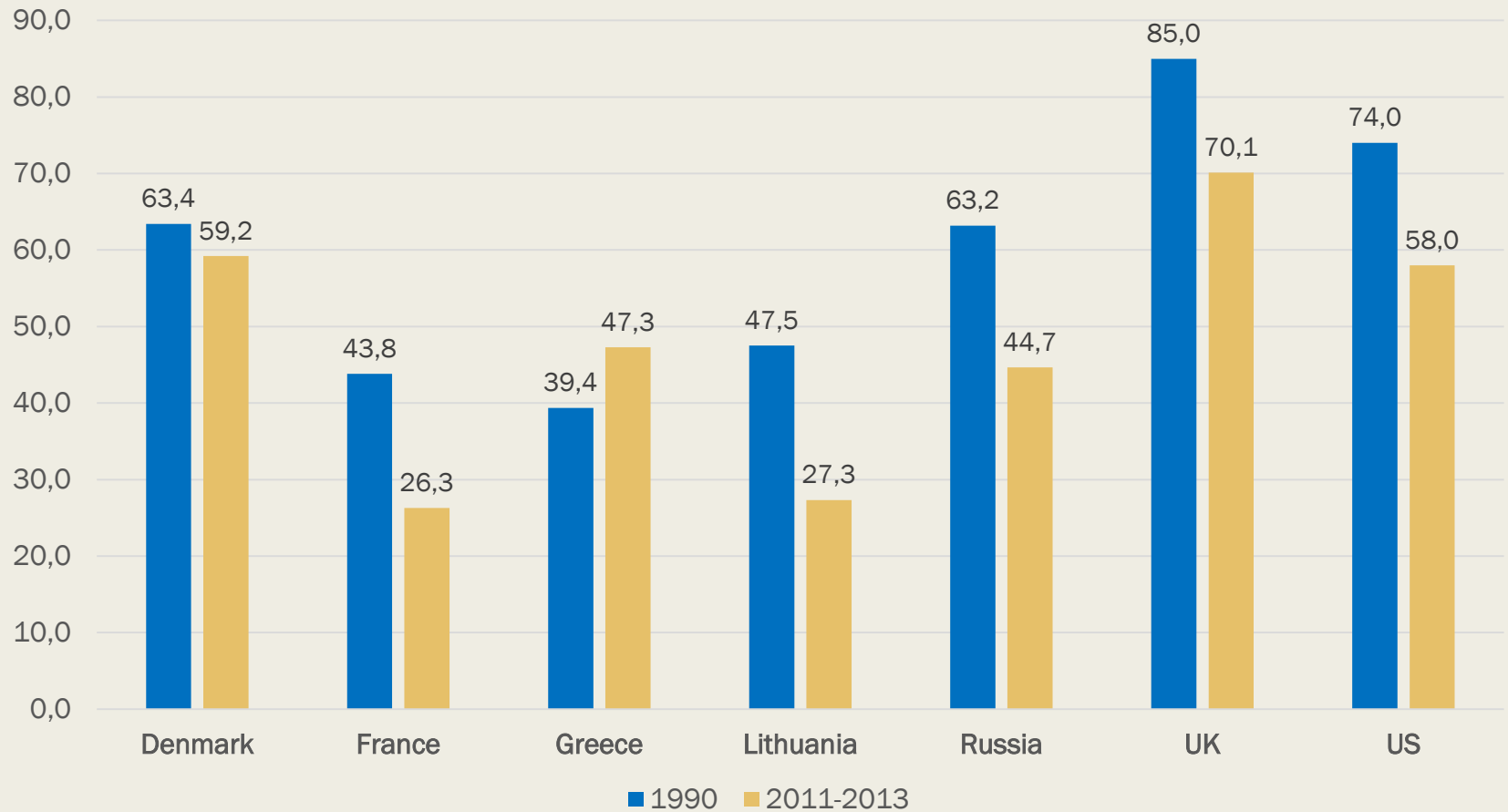
Source: European Health for All Database

# Death Rates – Cancer



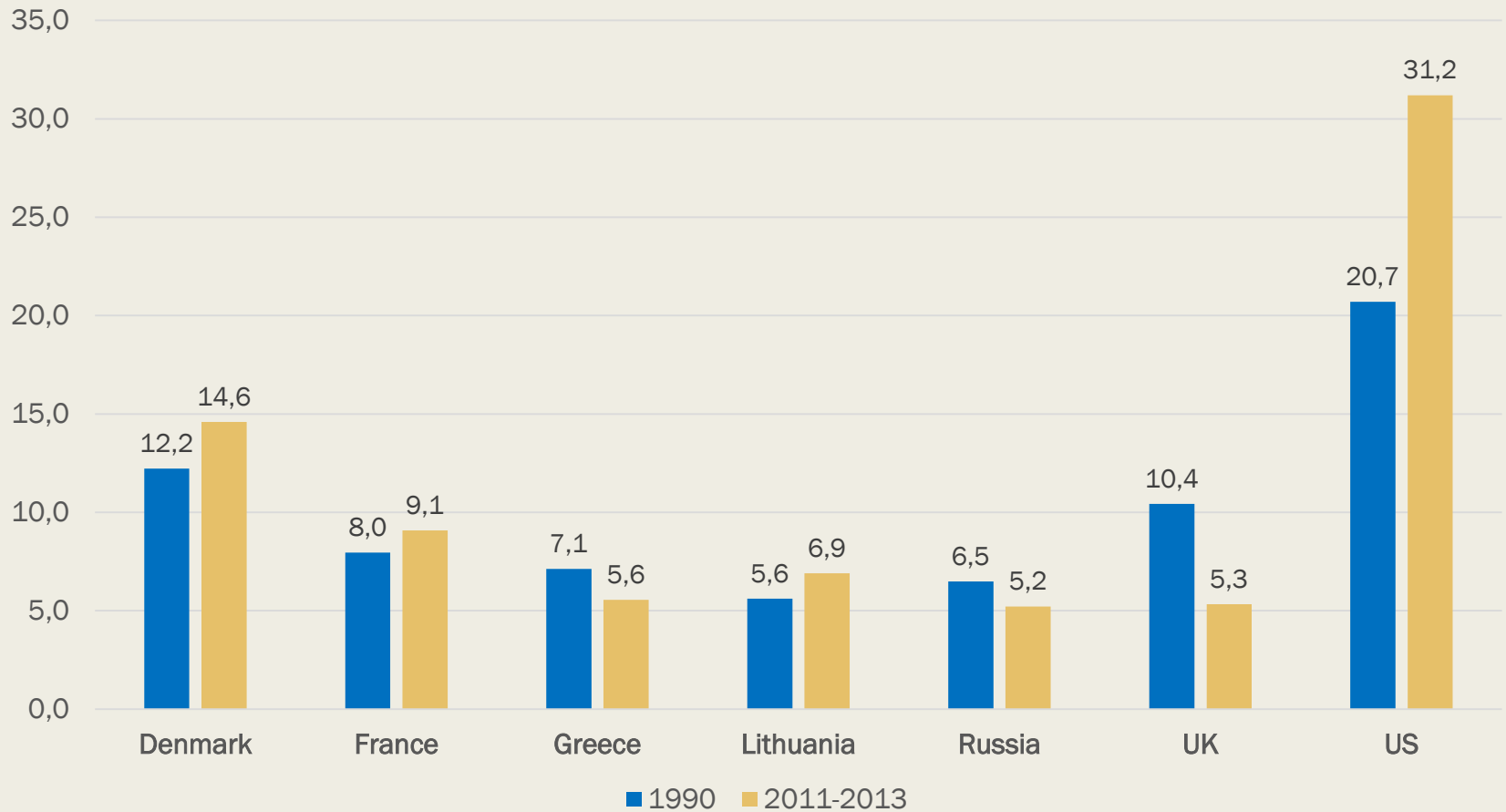
Source: European Health for All Database

# Death Rates – Respiratory System



Source: European Health for All Database

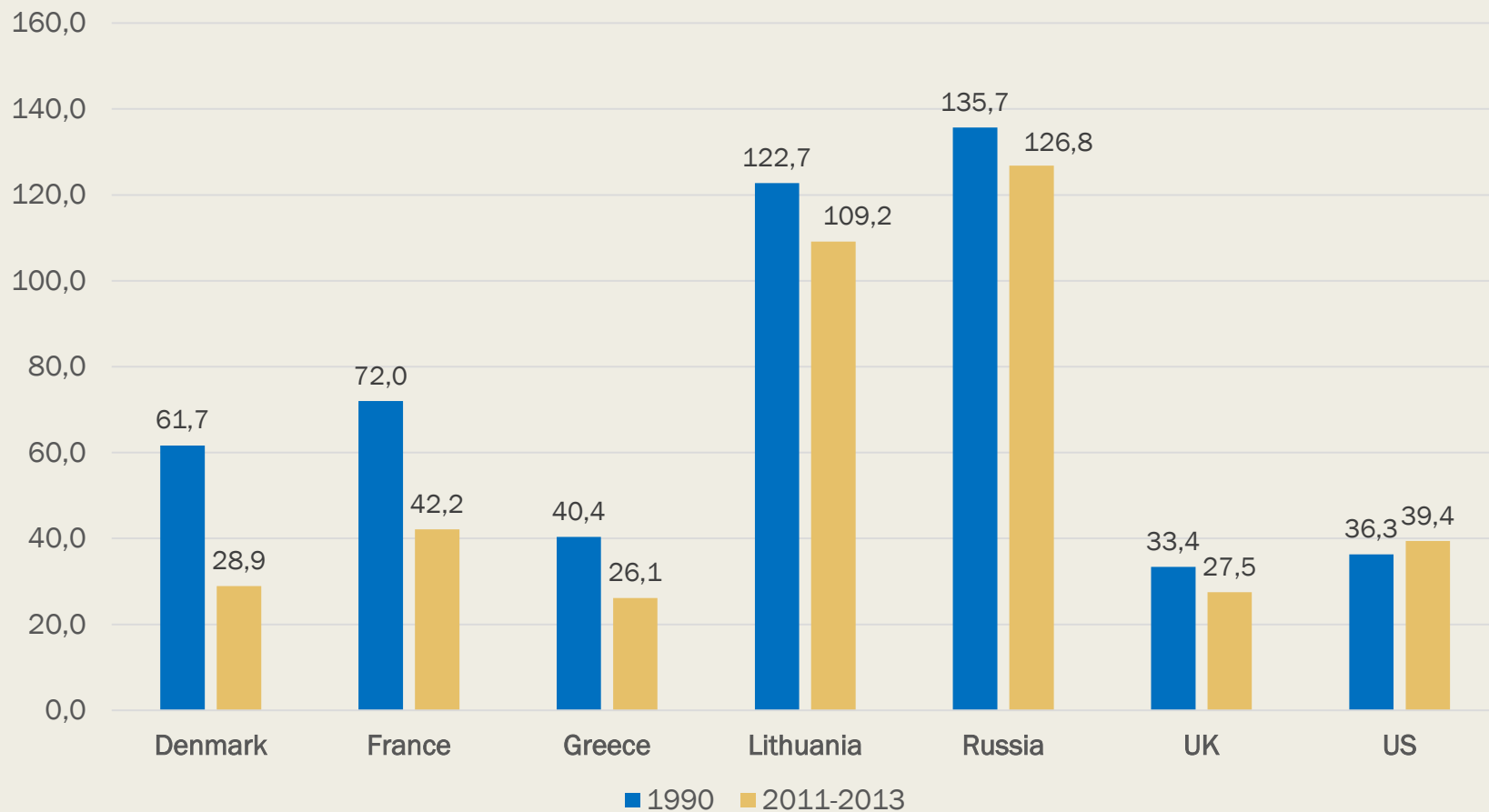
# Death Rates – Diabetes



Source: European Health for All Database

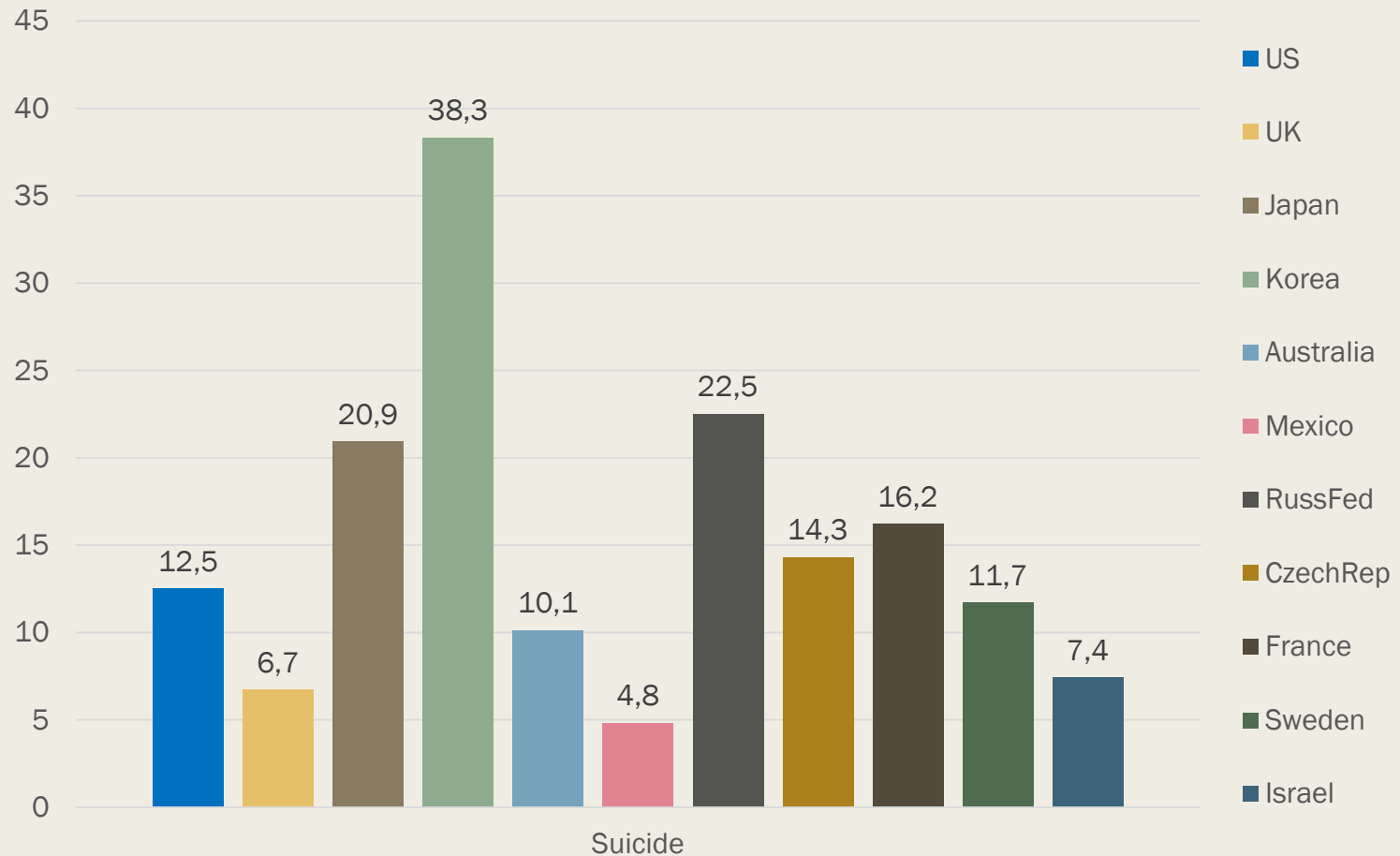


# Death Rates – External Causes



Source: European Health for All Database

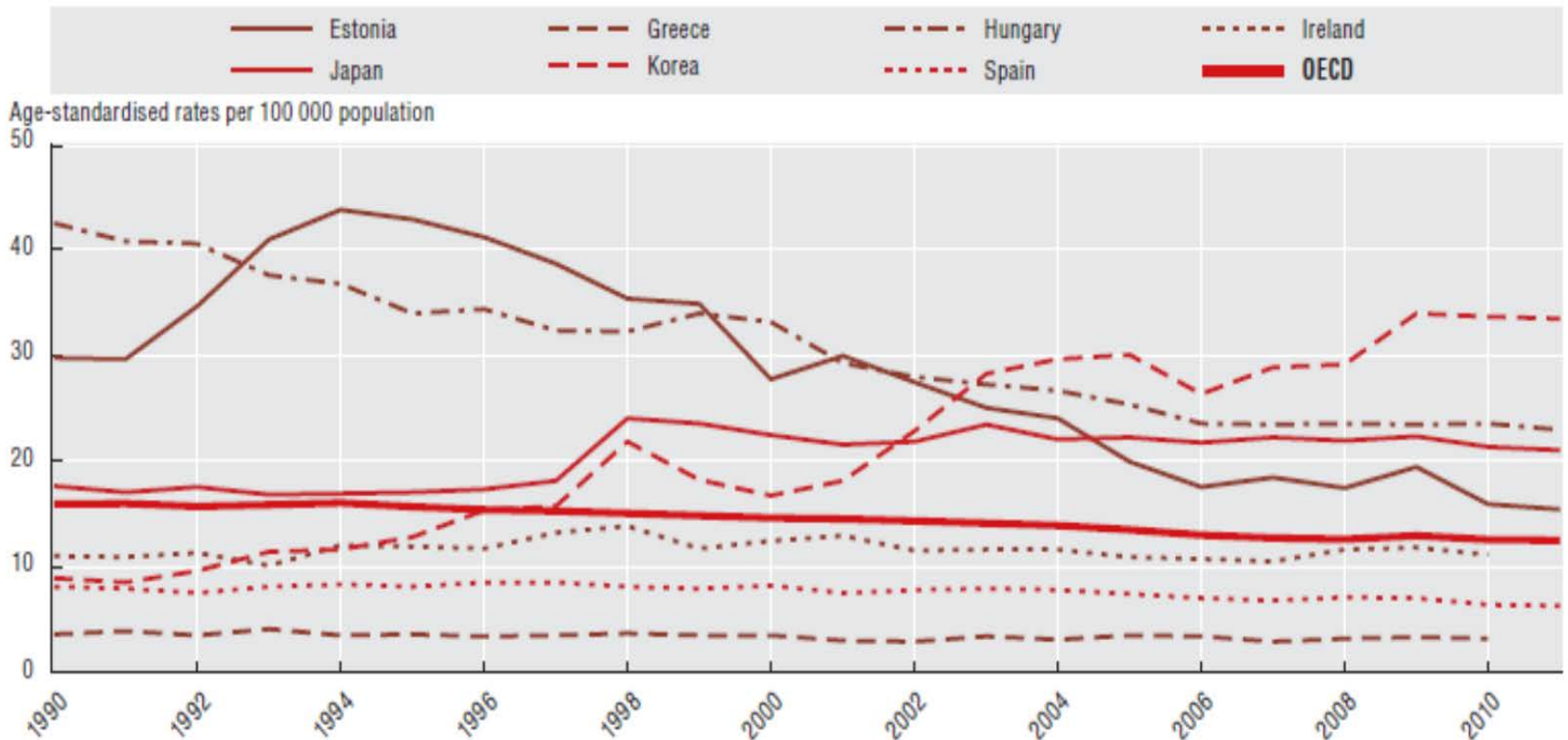
# Death Rates from Suicide, Selected Countries, 2011



Source: OECD Health Statistics 2013, <http://dx.doi.org/10.1787/health-data-en>; World Bank for non-OECD countries.

# Trends in Suicide, Selected Countries, 1990-2011

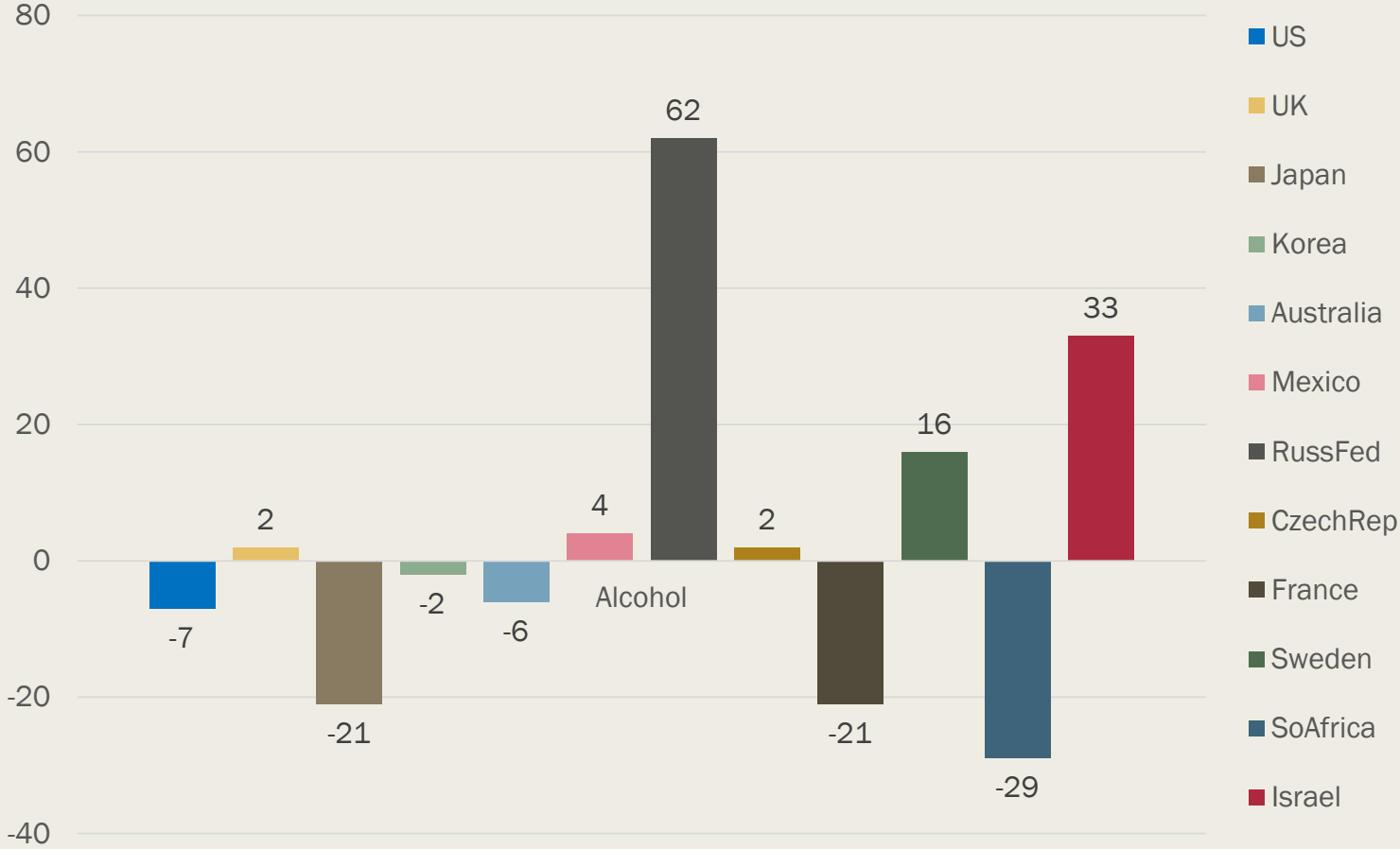
1.6.2. Trends in suicide rates, selected OECD countries, 1990-2011



Source: OECD Health Statistics 2013, <http://dx.doi.org/10.1787/health-data-en>.

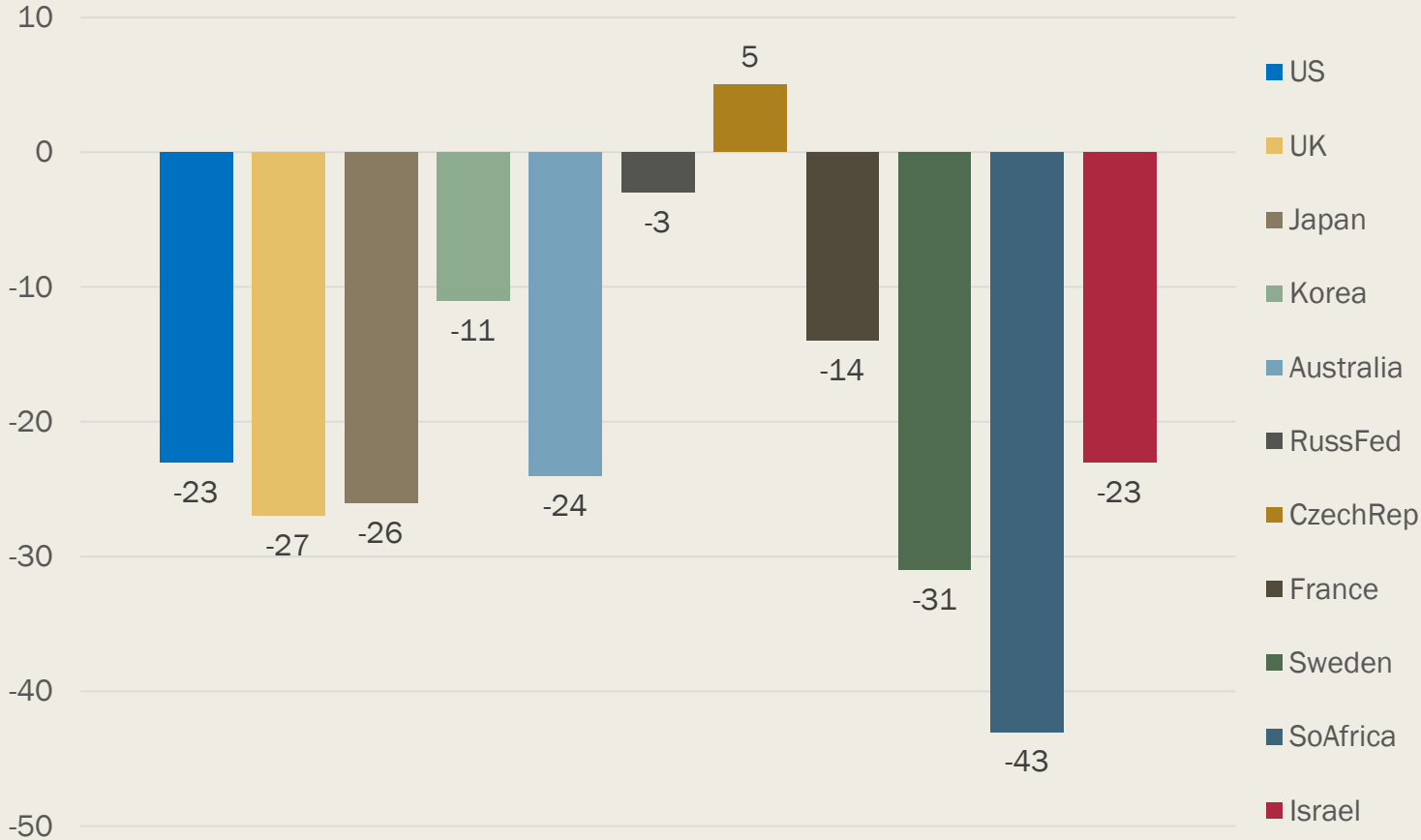
StatLink  <http://dx.doi.org/10.1787/888932916230>

# % Change per Capita in Adult Alcohol Consumption, Selected Countries, 1990-2011



Source: OECD Health Statistics 2013, <http://dx.doi.org/10.1787/health-data-en>; World Bank for non-OECD countries.

# % Change in Smoking Rates, Selected Countries, 2000-2011



Source: OECD Health Statistics 2013, <http://dx.doi.org/10.1787/health-data-en>; World Bank for non-OECD countries.



# Prevalence of Obesity Among Adults in Selected Countries, 2011



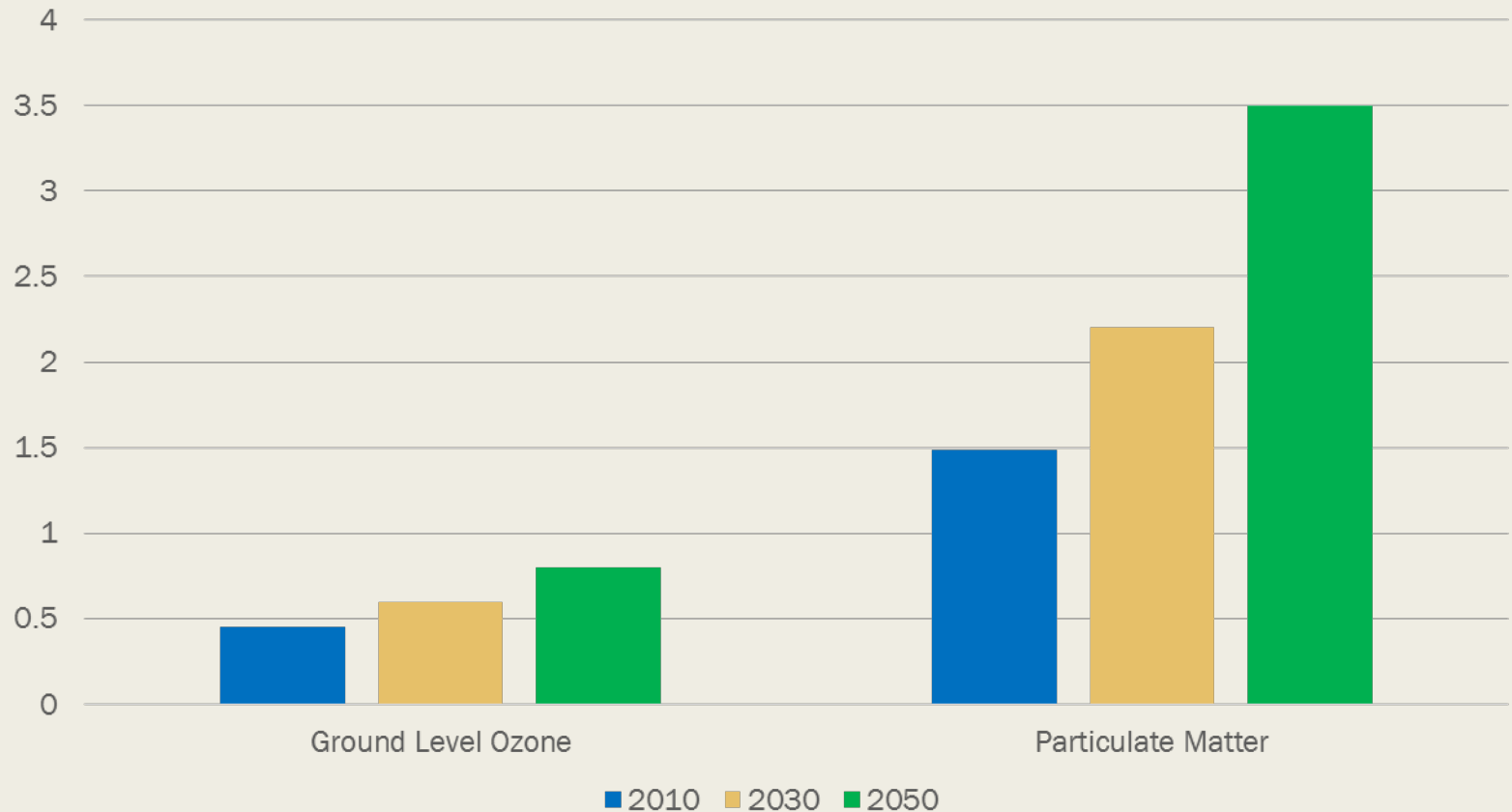
Source: OECD Health Statistics 2013, <http://dx.doi.org/10.1787/health-data-en>; World Bank for non-OECD countries.

# Future Health Issues

- Air Pollution
- Global Warming
- Increasing Population Diversity and Refugees!

# Air Pollution

## ■ Particulate Matter<sub>2.5</sub> and Ozone Production



# “Worst” areas for Ozone (% days 8-hr max > 100 $\mu\text{g}/\text{m}^3$ ) and PM<sub>2.5</sub> (Annual mean)

City	Ozone	City	PM <sub>2.5</sub>
Rome	32.3	Bucharest	38.2
Athens	32.2	Budapest	33.7
Marseille	28.0	Ljubljana	29.4
Ljubljana	23.9	Athens	29.4
Toulouse	22.9	Valencia	23.0

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Ljubljana	23.9	<b>Athens</b>	<b>29.4</b>
Toulouse	22.9	Valencia	23.0



# “Best” areas for Ozone (% days 8-hr max > 100 $\mu\text{g}/\text{m}^3$ ) and PM<sub>2.5</sub> (Annual mean)

City	Ozone	City	PM <sub>2.5</sub>
Dublin	0.7	Stockholm	9.4
Seville	1.0	Dublin	10.5
Bilbao	2.2	Malaga	12.8
Valencia	2.6	London	13.1
London	3.2	Toulouse	14.2

# “Best” areas for Ozone (% days 8-hr max > 100 $\mu\text{g}/\text{m}^3$ ) and PM<sub>2.5</sub> (Annual mean)

City	Ozone	City	PM <sub>2.5</sub>
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Valencia	2.6	London	13.1
London	3.2	Toulouse	14.2

So you think there's little we can do about Air Pollution?



# Climate Change – Global Warming

- Greenhouse Gases

- $O_3$
- $CO_2$ ,
- *Methane*
- *CFCs (less so, these days)*

- Several threats to Public Health

- *Natural Disasters – Floods, Wildfires, Extreme Storms*
- *Heat Waves and Sea-level Rise*

# Natural Disasters

- Storms, floods, cyclones, landslides, wildfires, droughts
  - *1970 to 2012 8,335 disasters*
    - 1.94 million deaths
    - \$2.4US Trillion in economic losses
  - *Consequences*
    - Large-scale dislocation of populations
    - Often to places ill-prepared to cope
    - Displaced pops often subject to:
      - *Undernutrition, violence, sexual abuse, mental illness including PTSD*
      - *Crude mortality rate as much as 30x base rate, often highest in children <5 years*

# Heat Waves

- Mortality relationship is J-shaped with high mortality at highest temperatures
- European 2003 heat wave
  - *Killed 40,000 in 2 weeks*

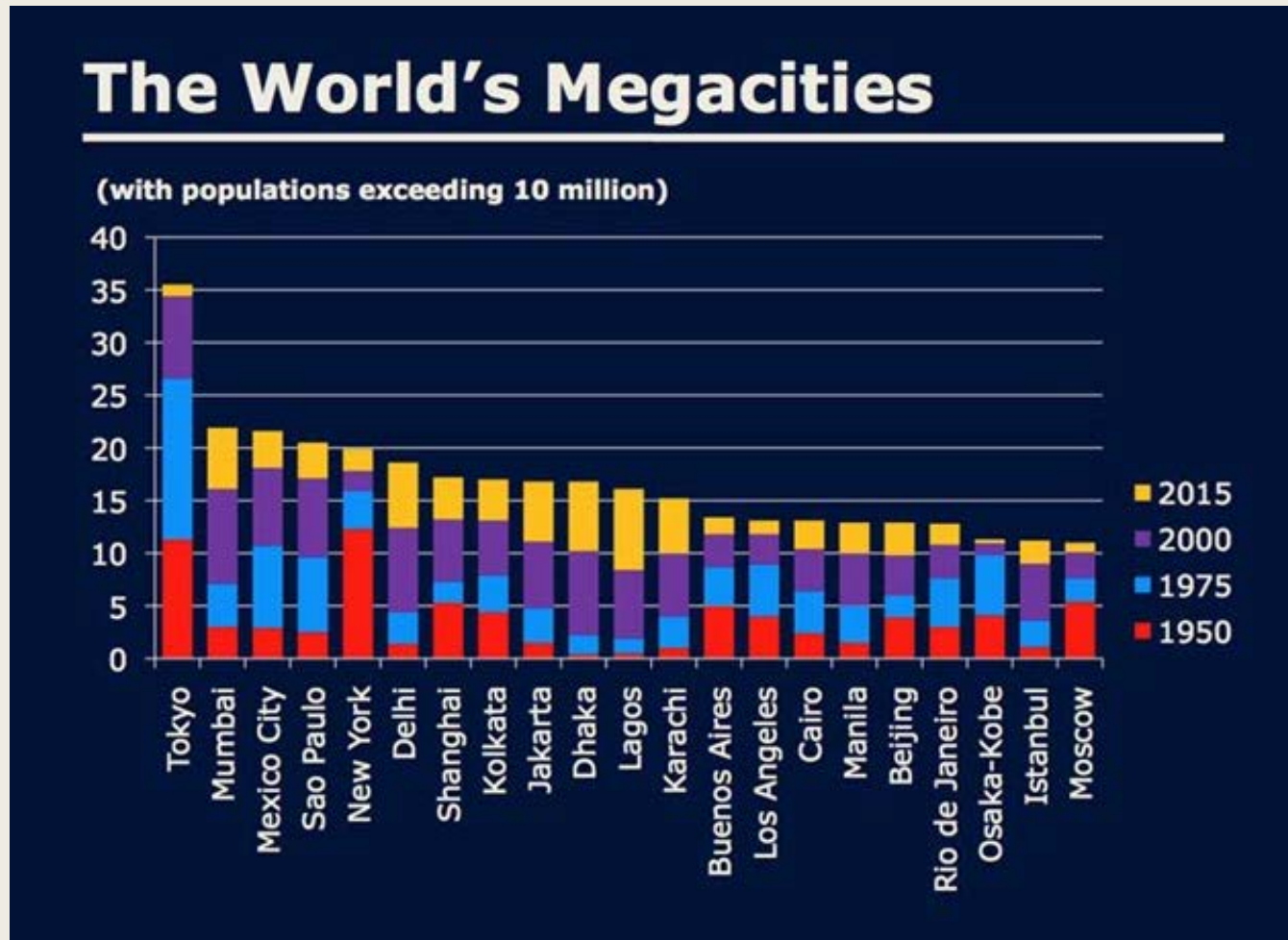
Place	Excess Mortality
England and Wales	2,091
Italy	3,134
France	14,802
Portugal	1,854
Spain	4,151
Switzerland	975
Netherlands	2,200
Germany	1,410
<b><u>TOTAL:</u></b>	<b><u>30,617</u></b>

# Heat Waves

- Clearly a Public Health Issue
  - *How prepared are we?*
  - *Death toll in 2003 implies not too well!*
    - Need emphasis on public education
    - Subsidies for elderly re: HVAC systems?
    - “Safe” zones in cities – Urban Heat Islands!

# Sea-level rise

- 14 of the world's 19 Mega-cities are situated at sea-level





# Sea-level rise

- Global sea levels rose 17 cm during 20<sup>th</sup> Century (>1/2 foot)
- Pace of rise will accelerate during 21<sup>st</sup> Century
  - *Midrange estimates – 26- to 98-cm rise by 2080 (> 3 feet)*
  - *Loss of up to 22% of world's coastal wetlands*
  - *200 million people at risk for:*
    - Displacement
    - Salt water intrusion into freshwater aquifers
    - Disruption of storm water drainage and sewage disposal systems, YET

# The Catastrophe That Must Not Be Named

368

By now you may have heard that Florida Gov. Rick Scott is a flat-out global warming denier, even though his state is arguably the most vulnerable to sea level rise and other problems that are surely to come if we do nothing.



- But even doing nothing is too much for Scott. Four former officials at Florida's Department of Environmental Protection have claimed that Scott put out an unwritten rule ordering that no one at the DEP even use the phrases *global warming* or *climate change* in any of their communications.

# “King Tide” in Miami, Florida



# Climate Change – Indirect Consequences to Human Health

- Floods – rapid rise floods – mostly drowning plus:
- Infectious Diseases
  - *Water- and Food-borne*
  - *Vector-borne*
  - *Mosquito-borne*
  - *Tick-borne*
- Diarrheal diseases –
  - *Coastal flooding in low lying areas*
  - *Inland flooding in “former socialist economies”* (Haines et al., 2006)
- Already causing 150,000 death/year

# Issues of Diversity

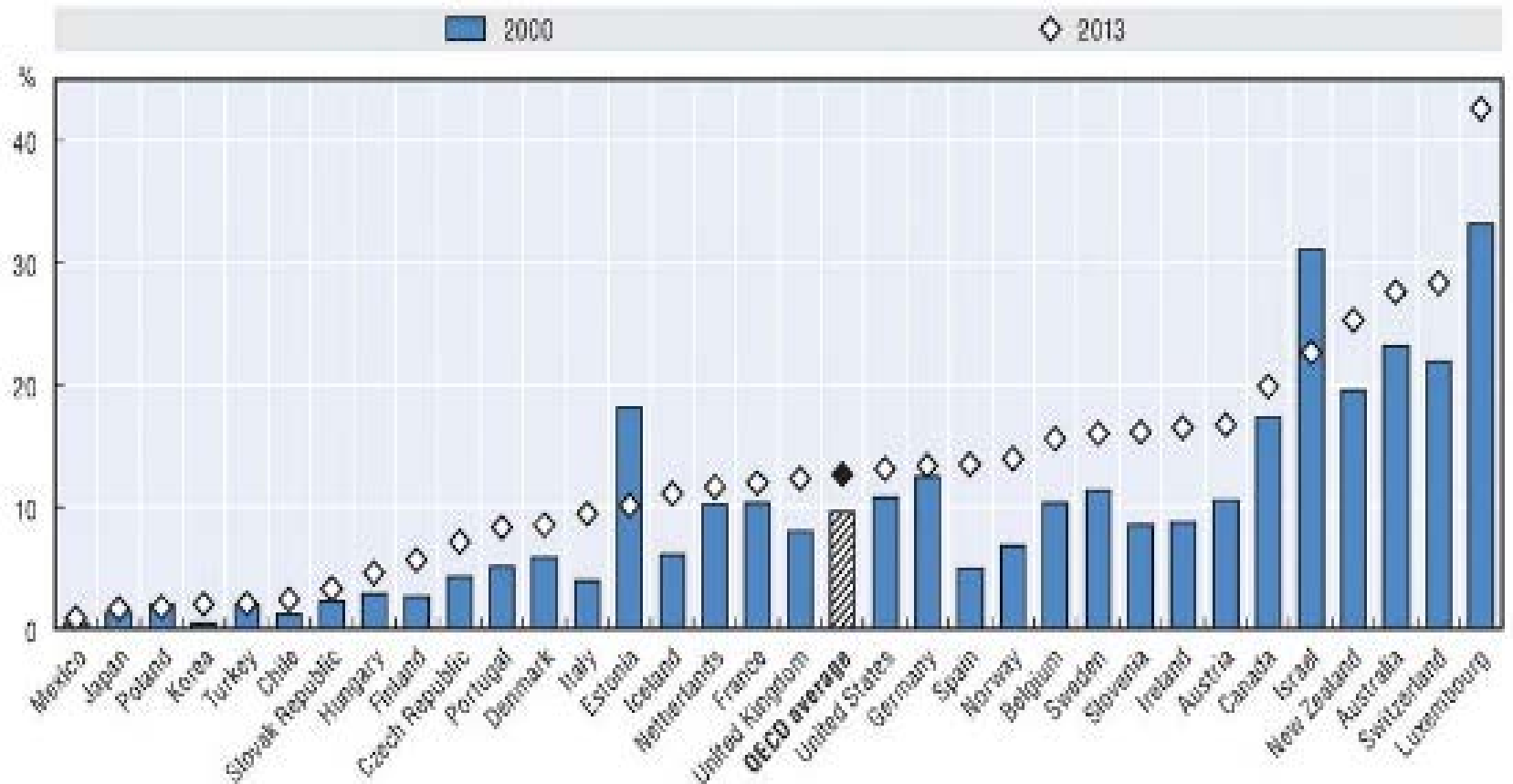
- REVES

- *Most presentations on diversity have been in 3 areas:*
  - SES differences – largely education and occupation
  - Regional differences – largely UK and US
  - Ethnic differences – largely from the US

- BUT

- *There is increasing diversity within the EU*
- *Implications for Differential Health Status and Social Cohesion*

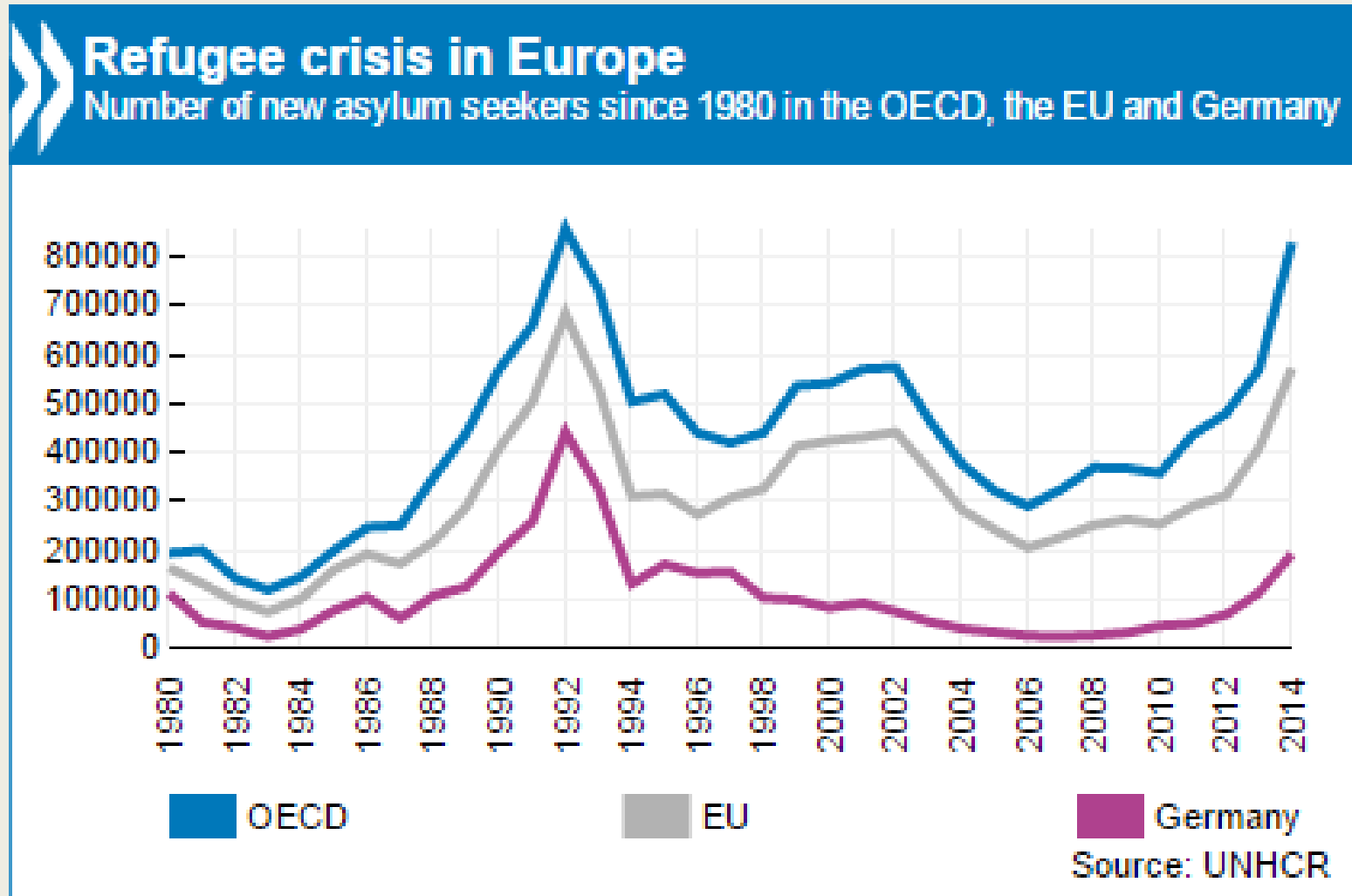
# Foreign-born as % of Total Population, 2000 and 2013



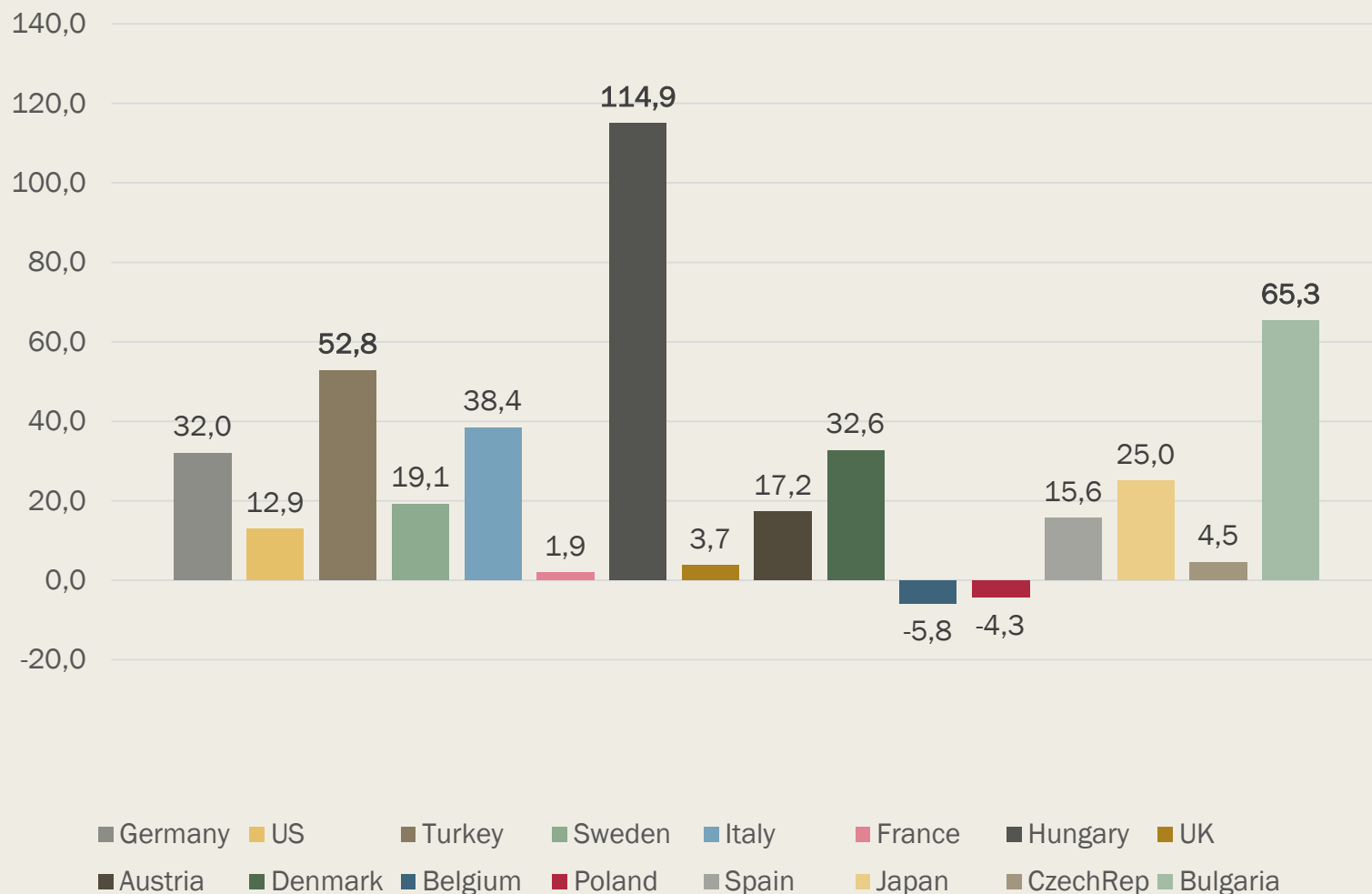
Note: Data refer to 2000 or to the closest year with available data and to 2013 or most recent available year.

Source: OECD International Migration Database.

# Trends in Migration



# Asylum Seekers, Average Annual % Change, 2010 - 2014



Source: UNHCR and OECD International Migration Database



# And what about their health?

- EU countries have universal health coverage
- Does not mean health care is accessed equally
- Migrants, in particular
  - *Coming from places where 'authorities' represent threat*
  - *Language, cultural barriers*
  - *Underlying health – probably not as good – particularly maternal and neonatal*

# And Social Cohesion?

- Threat Hypothesis
  - *More diverse societies often lead to lower generalized trust and loss of sense of community*
    - Not just among ethnic minorities
    - Also among the dominant groups
- Diversity causes feelings of threat
  - *And increased negative “out-group” orientations*
- US and Canadian studies
  - *Racially diverse cities, communities, neighborhoods*
  - *Generalized trust tends to be lower for ‘visible’ minorities and white majorities*
- Evidence in US???
  - *Mysterious success of Donald Trump*
  - *Amplified by level of economic inequality*

# Impact of Migration on This!

- Why do we pay attention to Donald Trump talking about patrolling Muslim areas in the US
  1. *He's an idiot*
  2. *He's playing on fear – A Republican hallmark in trade (GWB in 2004)*
- Are citizens of Belgium and France immune to this?
- If Threat Hypothesis is correct, rapid rises of migrants – particularly 'visible' minorities – further erode social cohesion

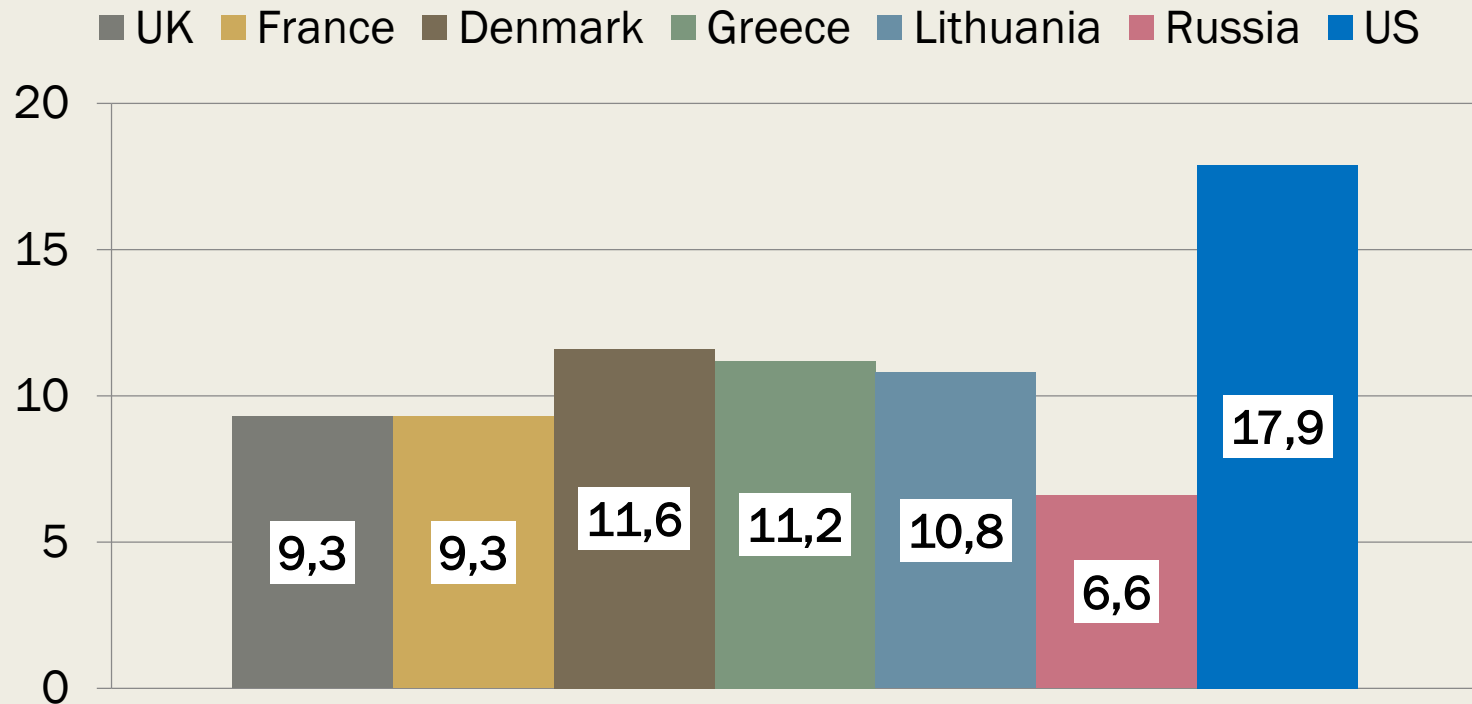
# Future Directions for REVES

- Air Pollution & Global Warming (Climate Change)
  - *Probably not specifically on our agenda* -
  - *Sure hope it is in APHA, PAA*
  
- More collaboration across countries -
  - *Increasing research being done within EU* -
  - *The more the better*
  
- More emphasis on Issues of Health in Subpopulations -
  - *Definitions?*
  - *Adequate attention paid in large scale surveys?*
  - *Statistical power – problematic with iMaCh, other programs*

Thank you and Enjoy the Rest of REVES!!

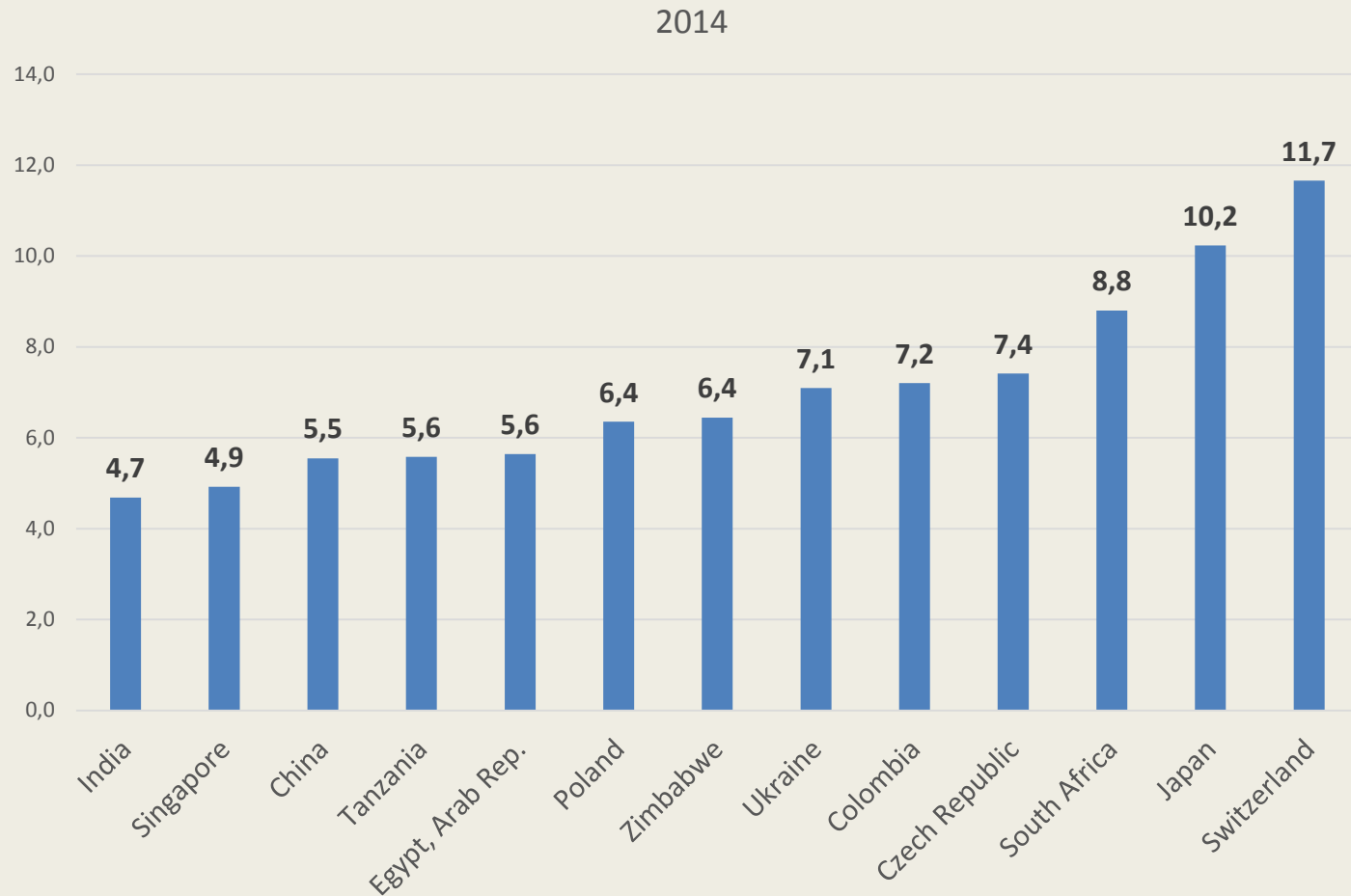


# Per Capita Health Expenditures, as % of GDP



Source: European Health for All Database

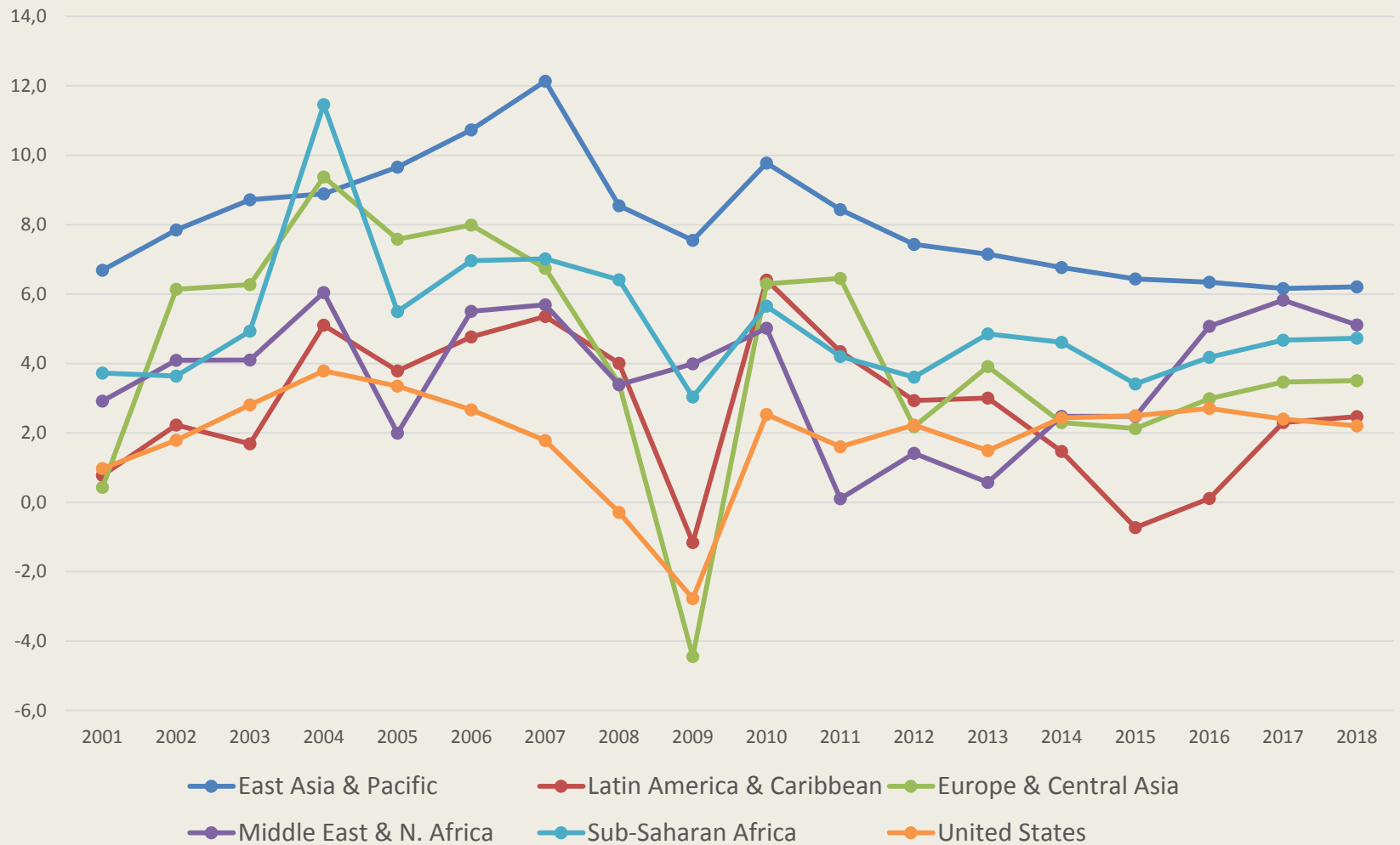
# Selected Other Countries:



Source: OECD Health Statistics 2013, <http://dx.doi.org/10.1787/health-data-en>; World Bank for non-OECD countries.

# By Region

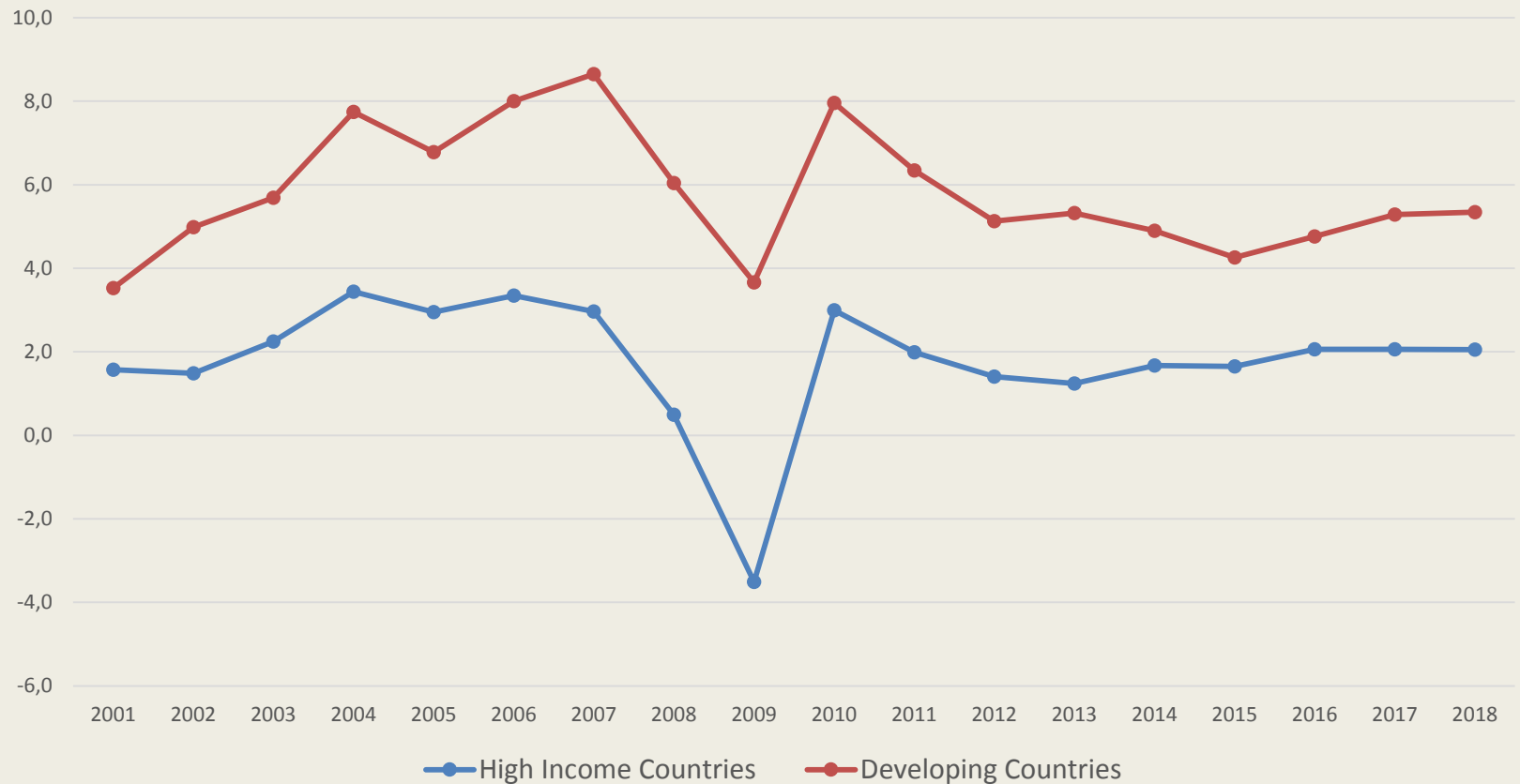
GDP Growth by Region - 2001 to 2014, Projected 2015-2018





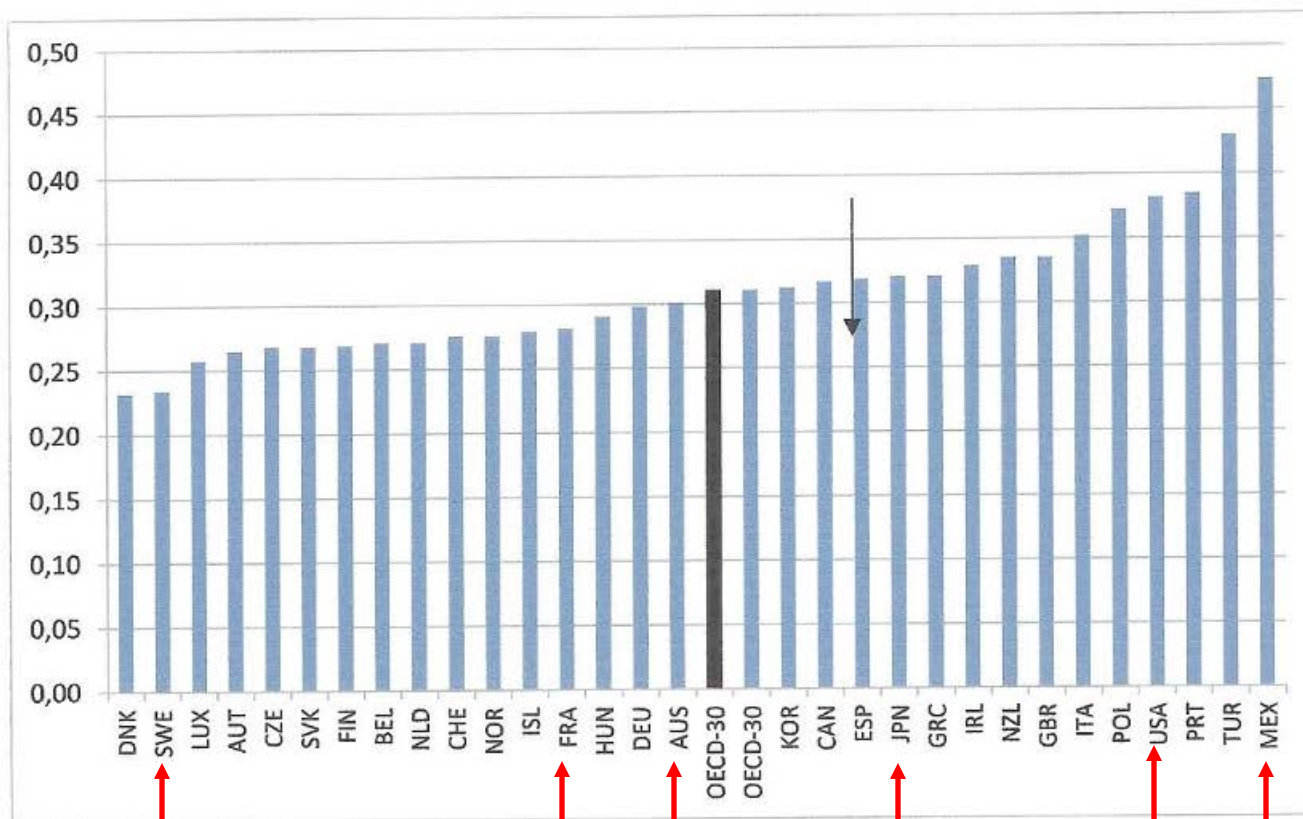
# “Recent” GDP Growth – High Income and Developing Countries

2001 to 2014, 2015-2018 Projected



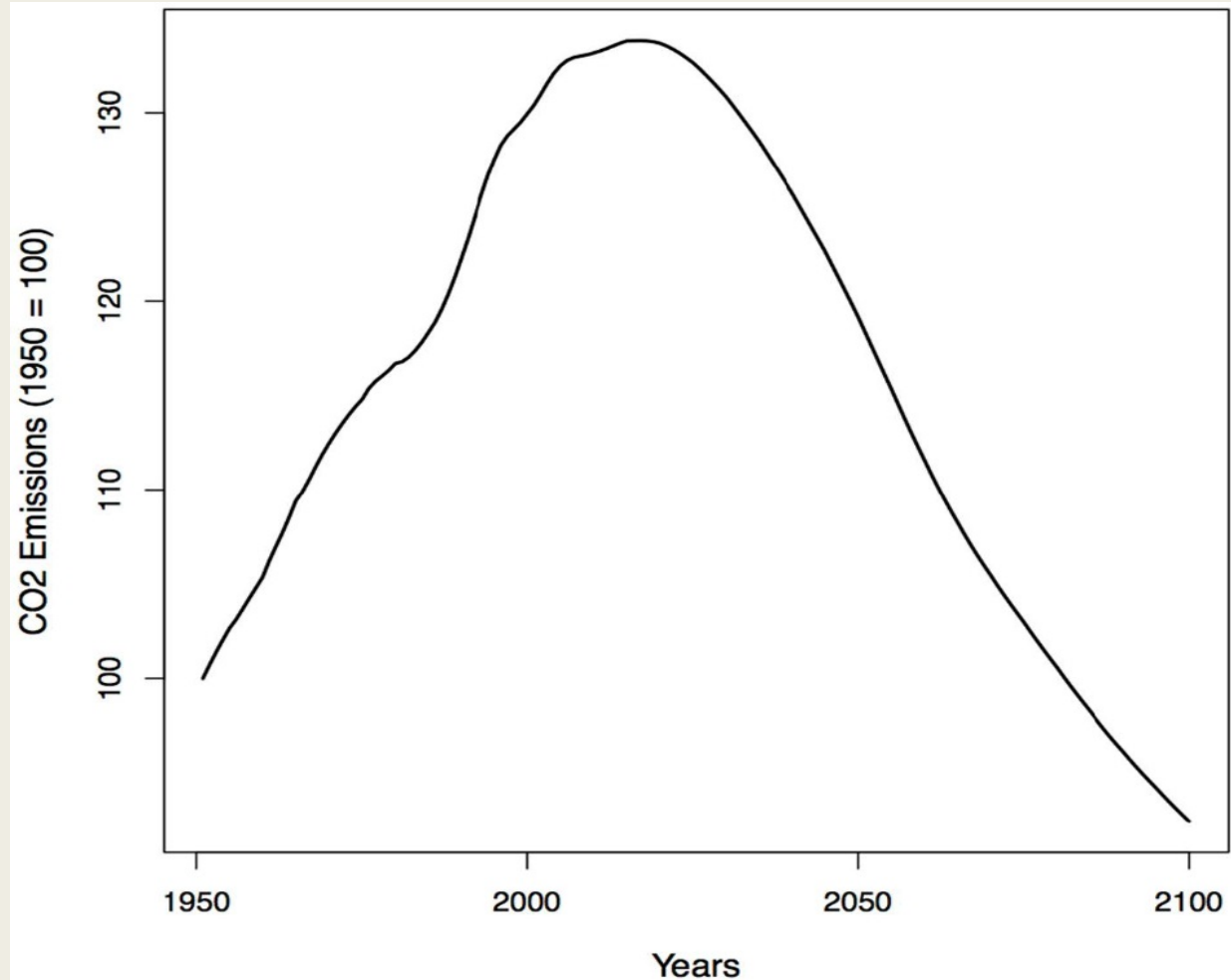
# Mid-2000's Gini Coefficients

Figure 2.1: International comparison of Gini coefficients in the mid-2000s



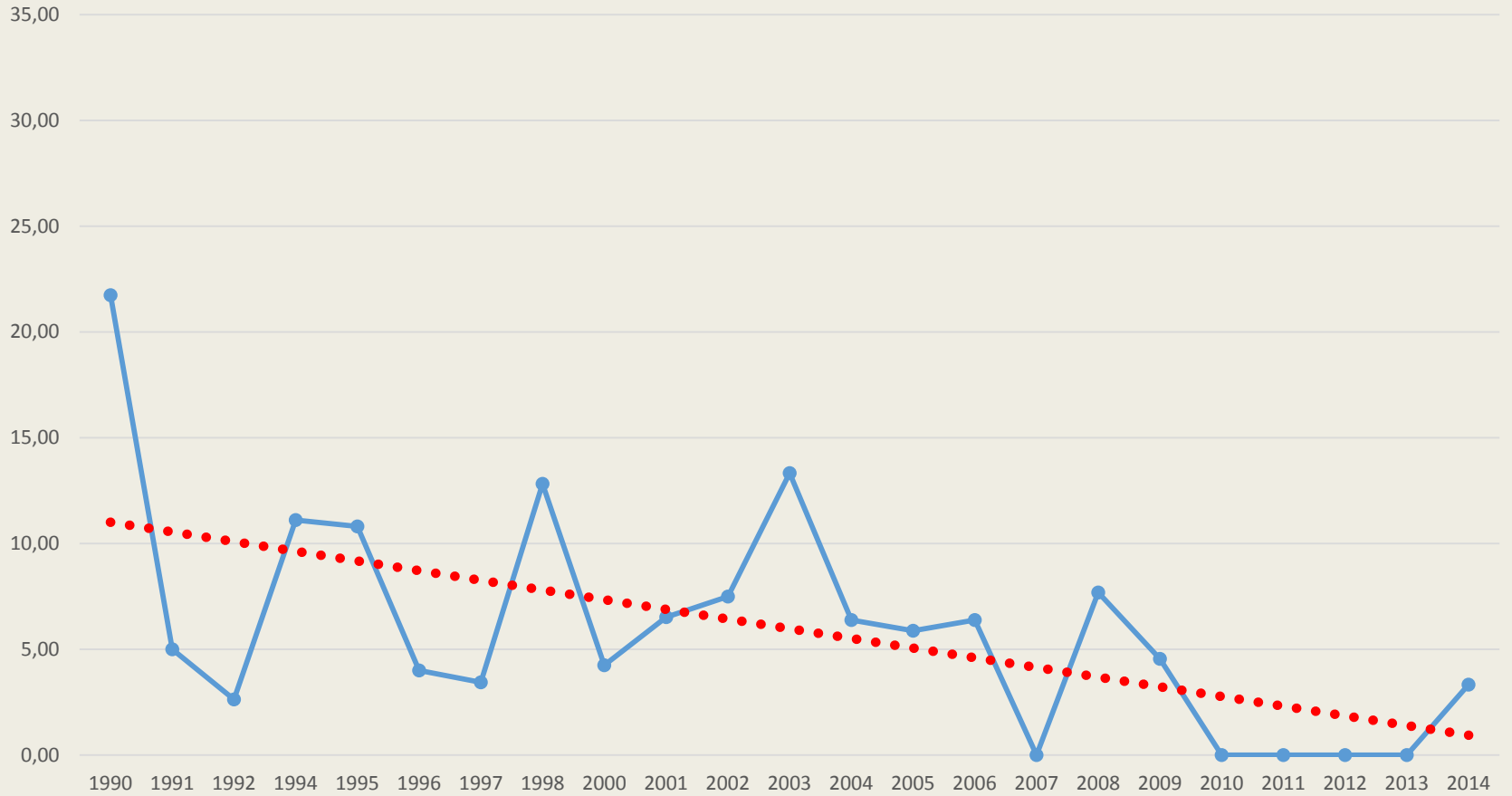
Source: Gini coefficients of income inequality in OECD countries, mid-2000s (Figure 1.2) in *Growing Unequal?* Income Distribution and Poverty in OECD Countries (OECD (2008));

# CO<sub>2</sub> Emissions attributable to population size and age structure: Germany, 1950 to 2100

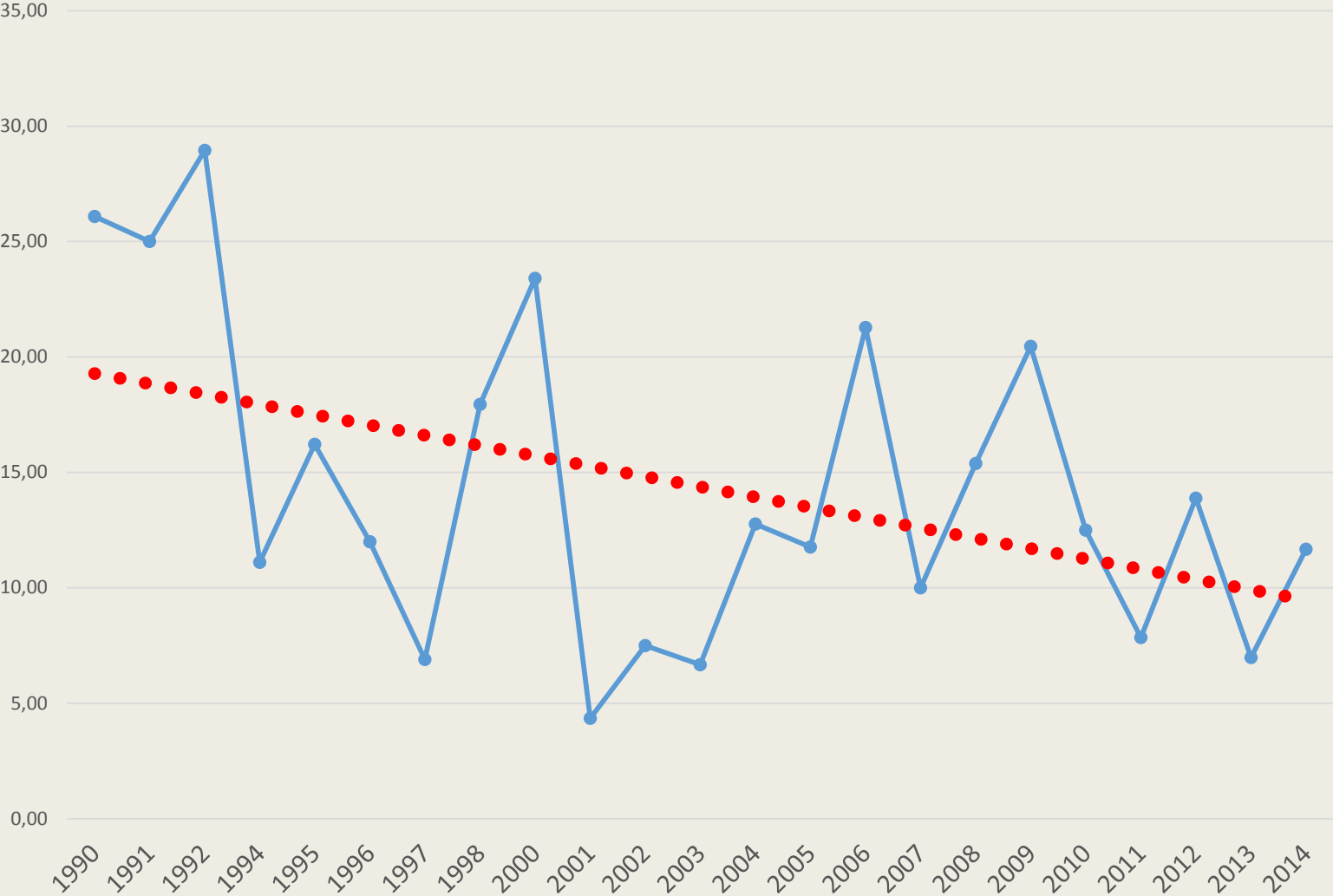


# Trends in REVES Topics -

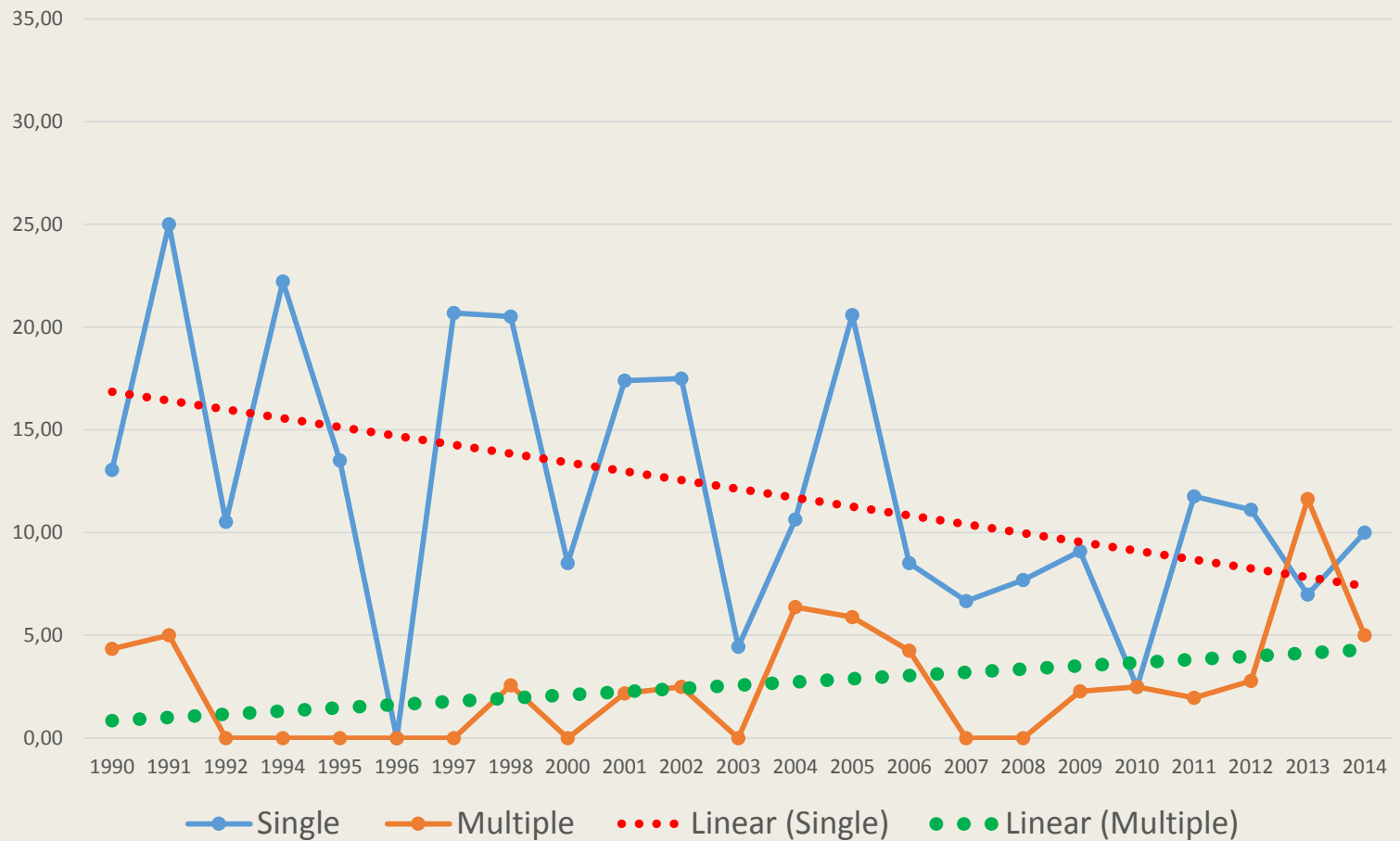
## Definitional Issues – NOT including Harmonization



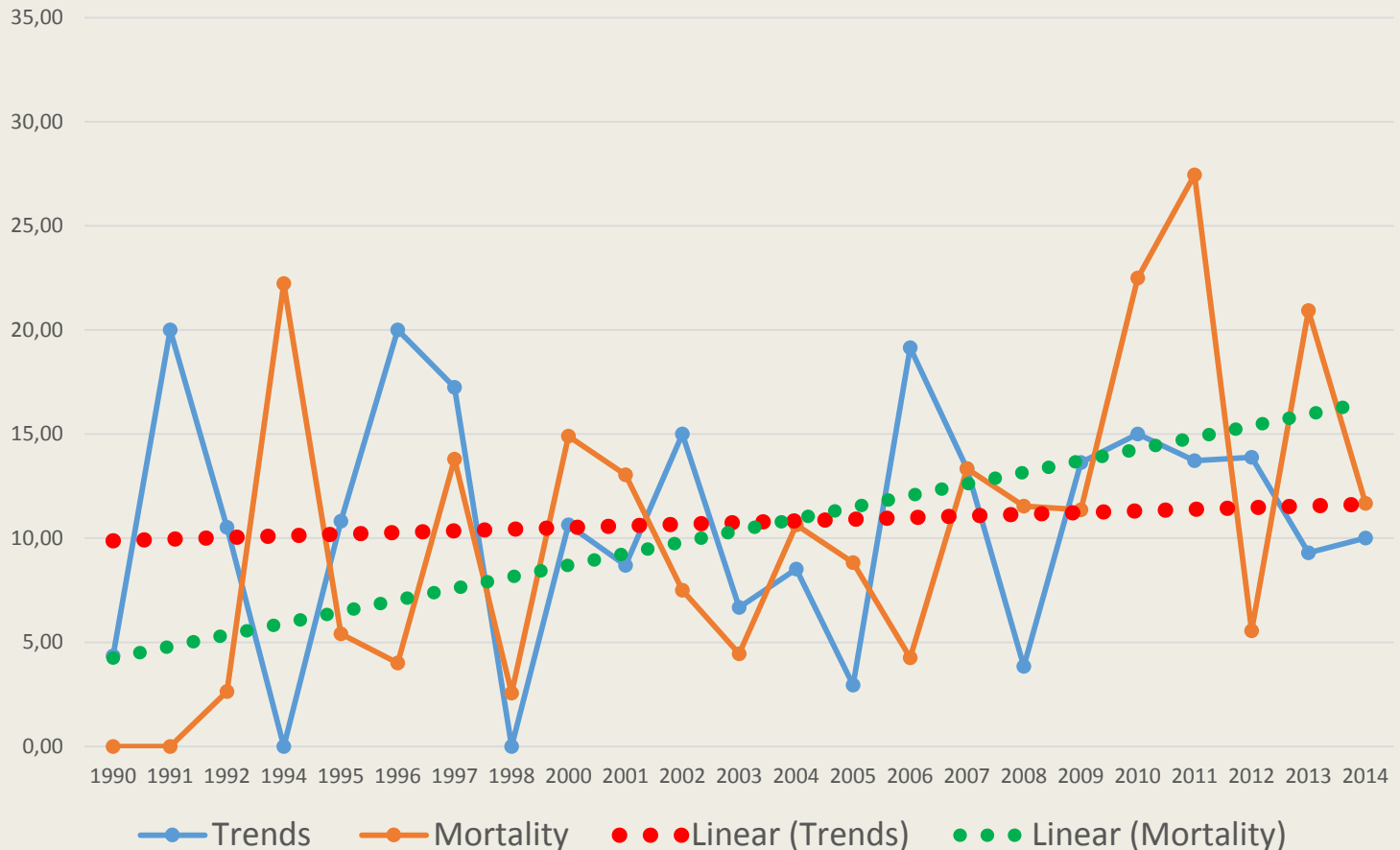
# Methods



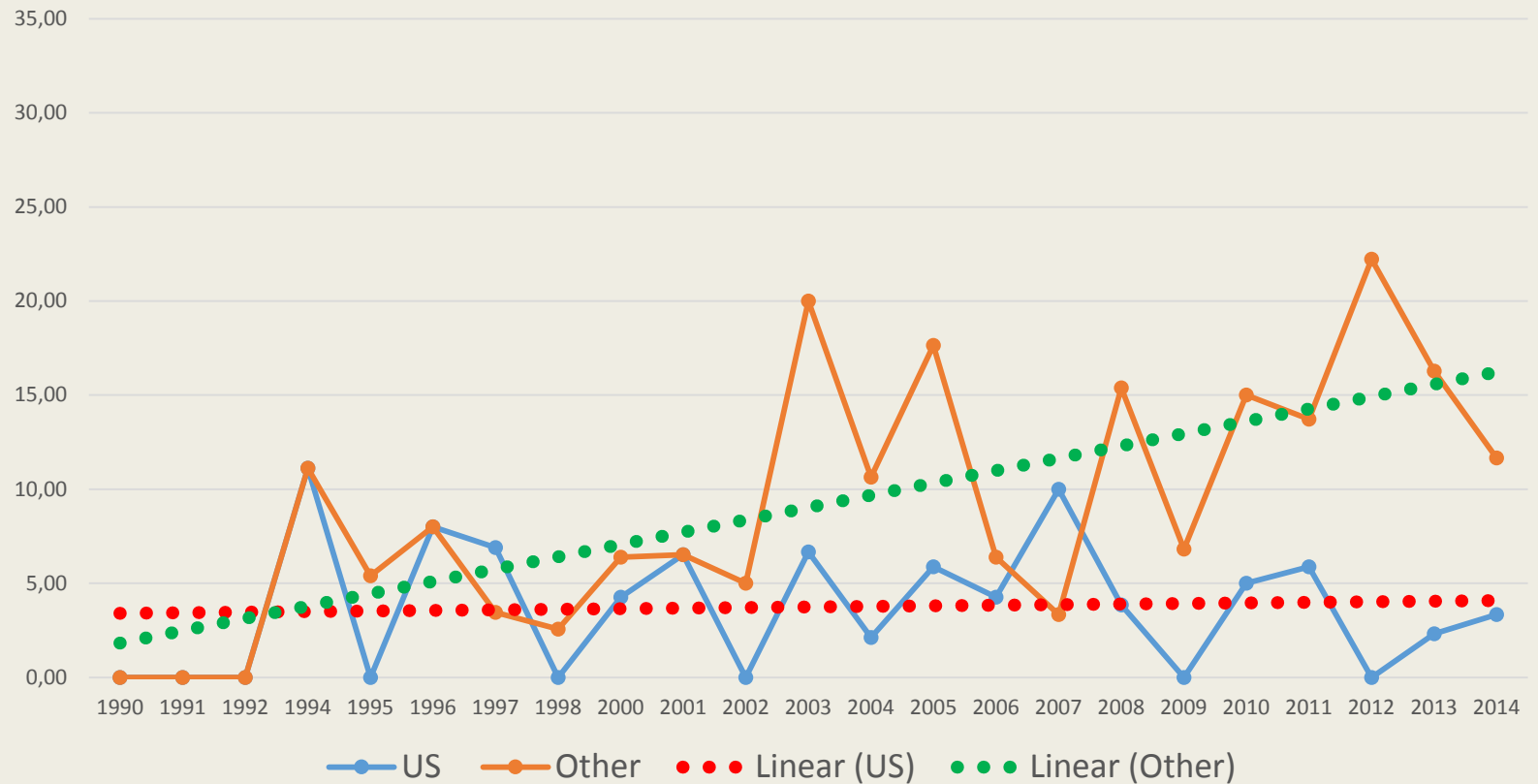
# Healthy Life Expectancy – Single and Multiple Country



# Trends in Health/Disability and Mortality

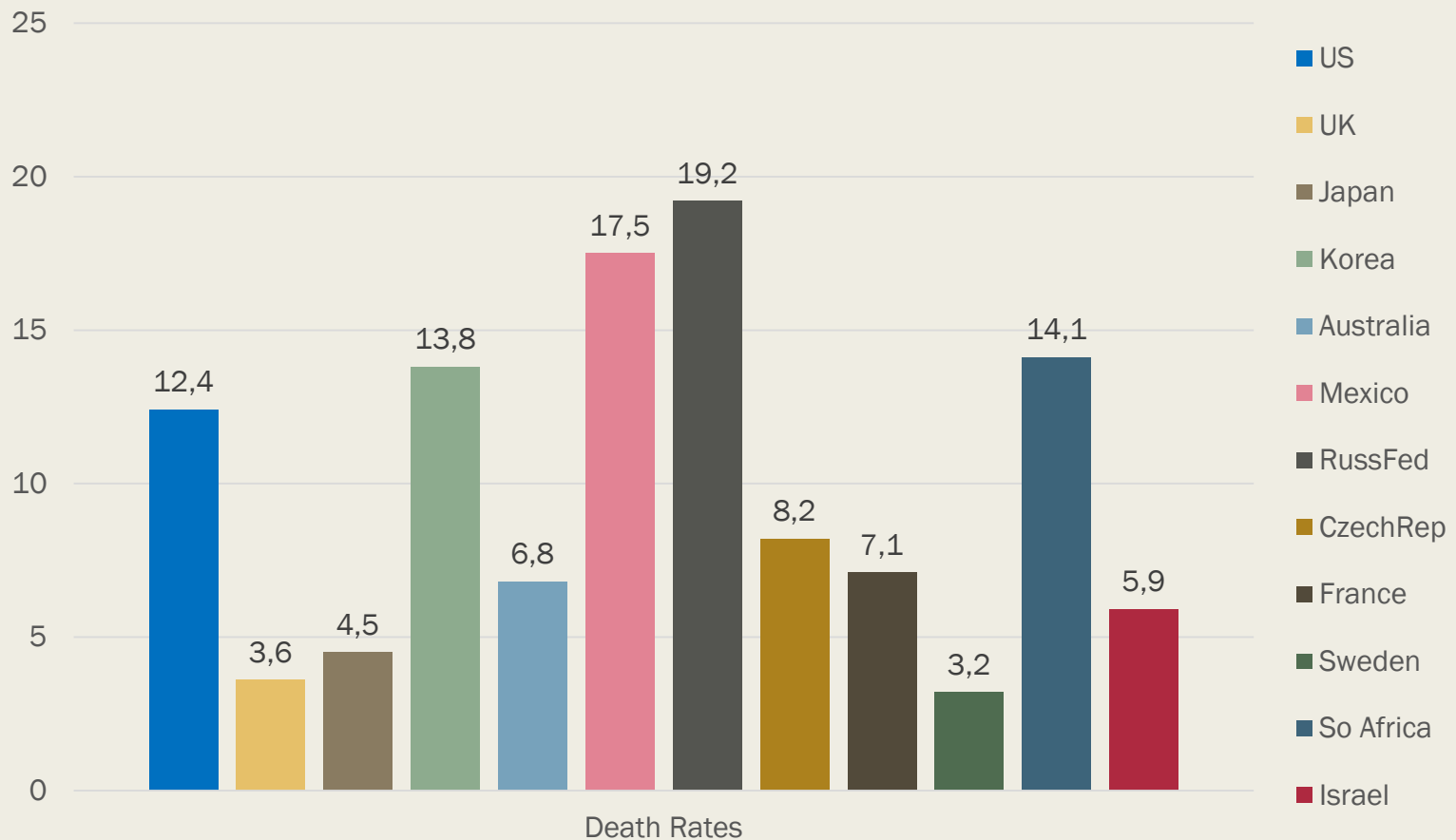


# SES/Diversity Issues – US and Elsewhere



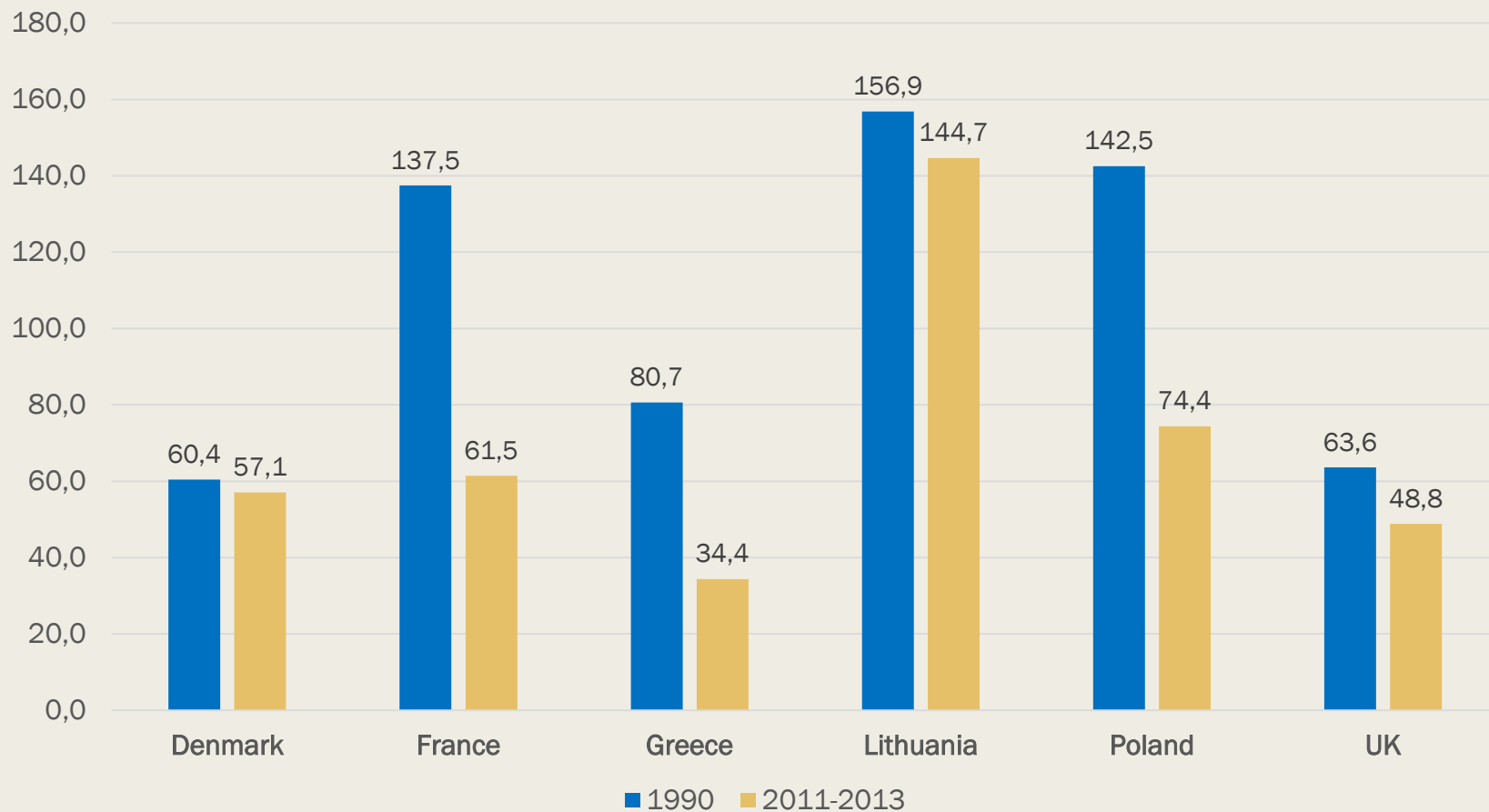


# Death Rates from Transport Accidents, Selected Countries, 2011



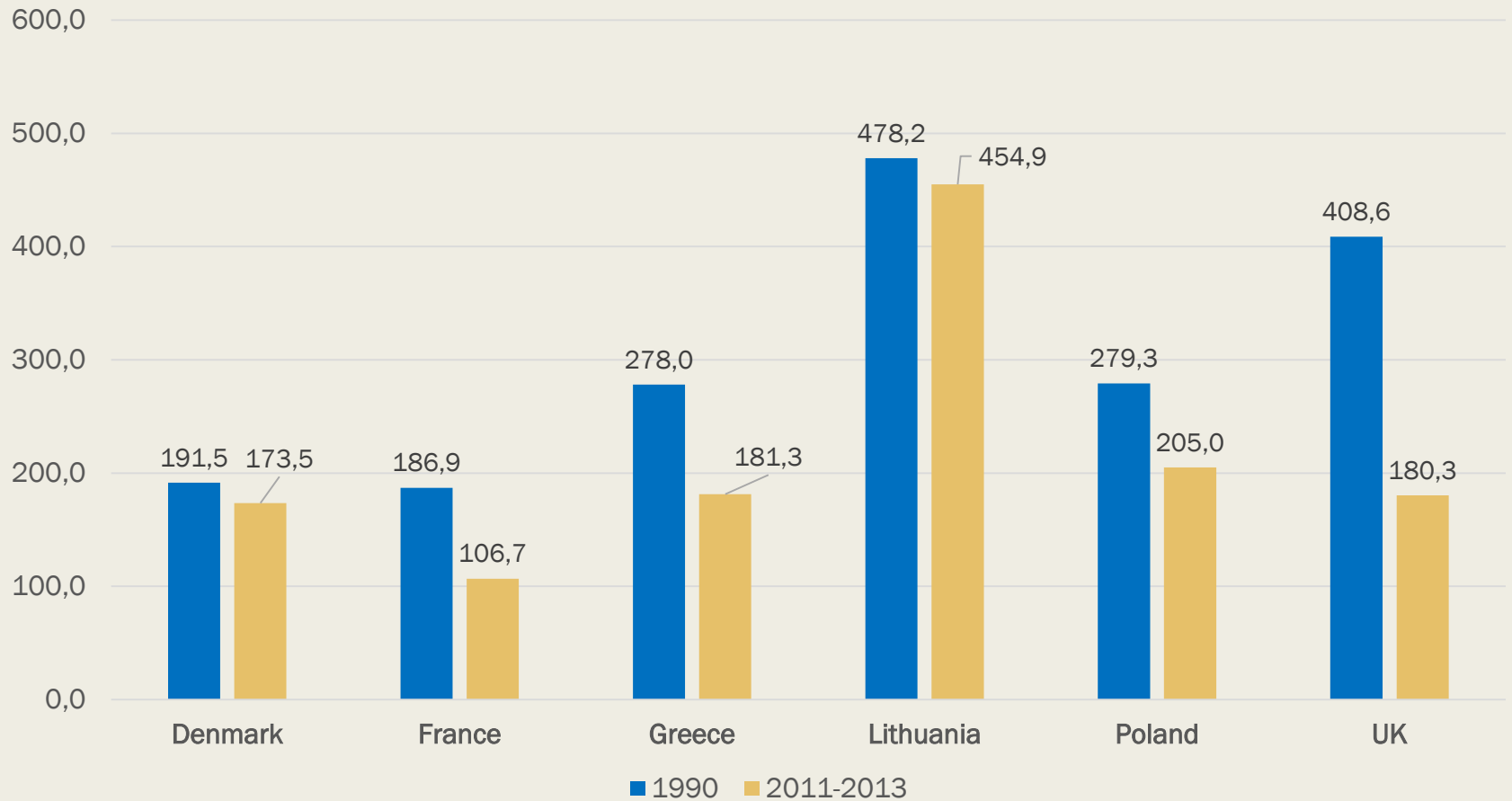
Source: OECD Health Statistics 2013, <http://dx.doi.org/10.1787/health-data-en>; World Bank for non-OECD countries.

# Death Rates – Alcohol-Related



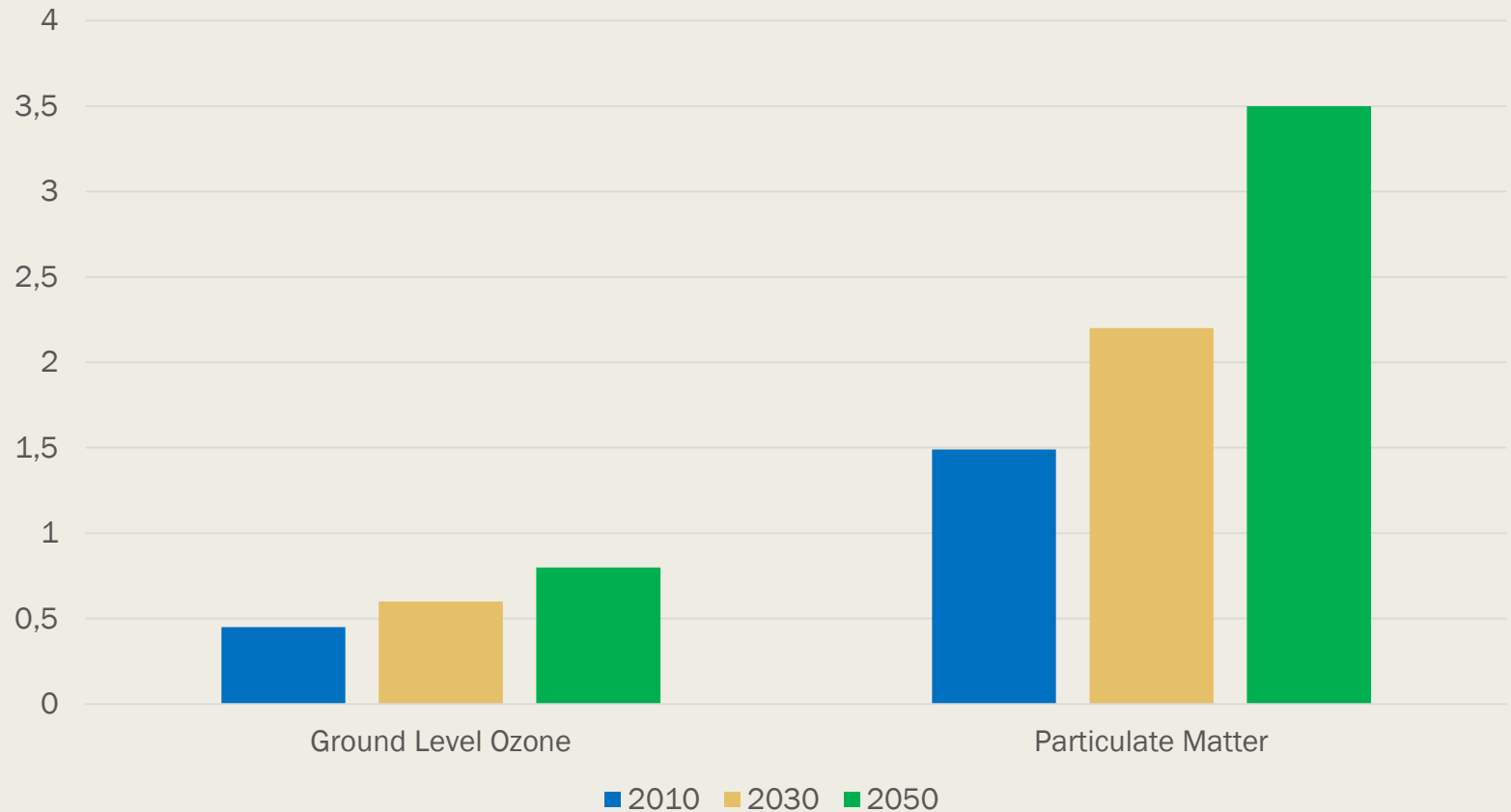
Source: European Health for All Database

# Death Rates – Smoking-Related



Source: European Health for All Database

# Global Premature Deaths (in Millions of People) from Selected Environmental Risks, 2010-2050



# Using Beijing @ Case Study

- High population growth, traffic density and levels of particulate matter
- Biggest culprits:
  - *Residential wood burning*
  - *Coal burning*
  - *“Mineral aerosols from resuspended road dust”*
  - *Solid waste management*
- Result –
  - *Impact on Mort/Morb –*
    - *Varies by season*
    - *PM<sub>2.5</sub> and Potassium had highest impact on non-accidental mortality*
  - *Similar to results found in the Netherlands, Phoenix, Santa Clara County*

# European Studies

- Long term exposure to PM<sub>2.5</sub> linked to natural cause mortality  
(*Beelen et al., 2014*)
  - *Little difference between 22 cohorts examined*
  - *Mortality from Lung Cancer and Stroke, not IHD or Respiratory Diseases*
  - *Association between LT Exp to PM<sub>2.5</sub> and Mortality found even in areas already below EU standards for PM*

# Excess Mortality during 2003 European Heat Wave

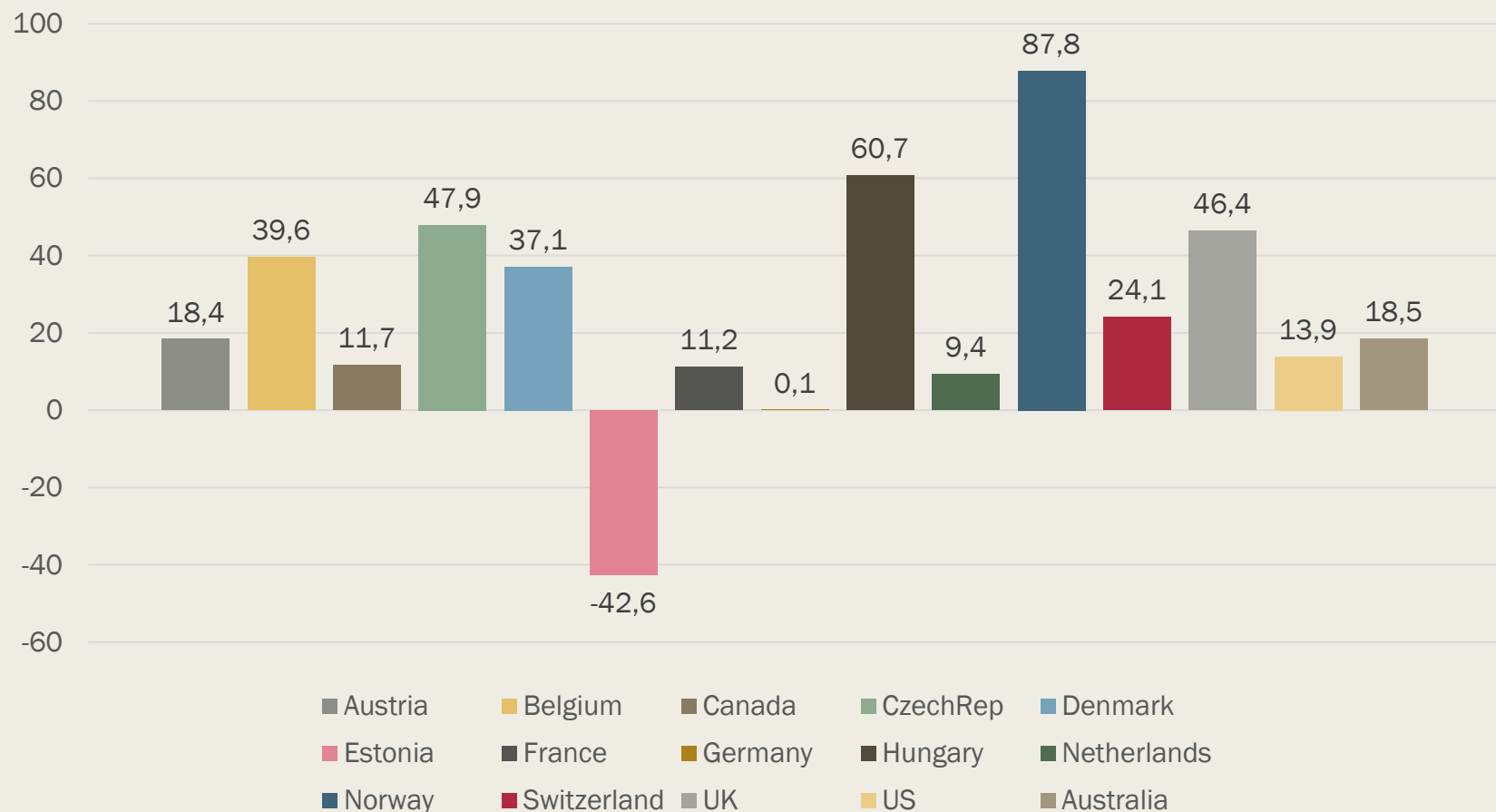
Place	Excess Mortality
England and Wales	2,091
Italy	3,134
France	14,802
Portugal	1,854
Spain	4,151
Switzerland	975
Netherlands	2,200
Germany	1,410
<u>TOTAL:</u>	<u>30,617</u>

# Big question -

- How well will humans adapt to increasingly hot environment?
  - *Public health education*
  - *Health warning systems*
  - *Emergency preparedness*
  - *Add Boil water notices*
  - *Risk assessment for extreme rainfall events*
  - *Risk assessment for health effect of algal blooms*
  - *ZIKA!!!*
  - *High Pollution day warnings*
  - *Food hygiene measures and enforcement*



# Percent Change in Foreign-Born Residents: 2002-2013 (2012 – France)



Source: UNHCR and OECD International Migration Database