

# What makes for a healthy economy?

Dr Gerry McCartney

Consultant in Public Health

Head of Public Health Observatory Division

NHS Health Scotland

# What is the economy for?

The Scottish Government's purpose is:

“To focus Government and public services on creating a more successful country, with opportunities for all of Scotland to flourish, through increasing sustainable economic growth”.

Source: Scottish Government website, May 2012

(<http://www.scotland.gov.uk/About/scotPerforms/purposes>)

# What is the economy for?

“Faster sustainable economic growth is the key which can unlock Scotland's full potential and is the avenue through which we can deliver a better, healthier and fairer society”.

Source: Scottish Government website, May 2012

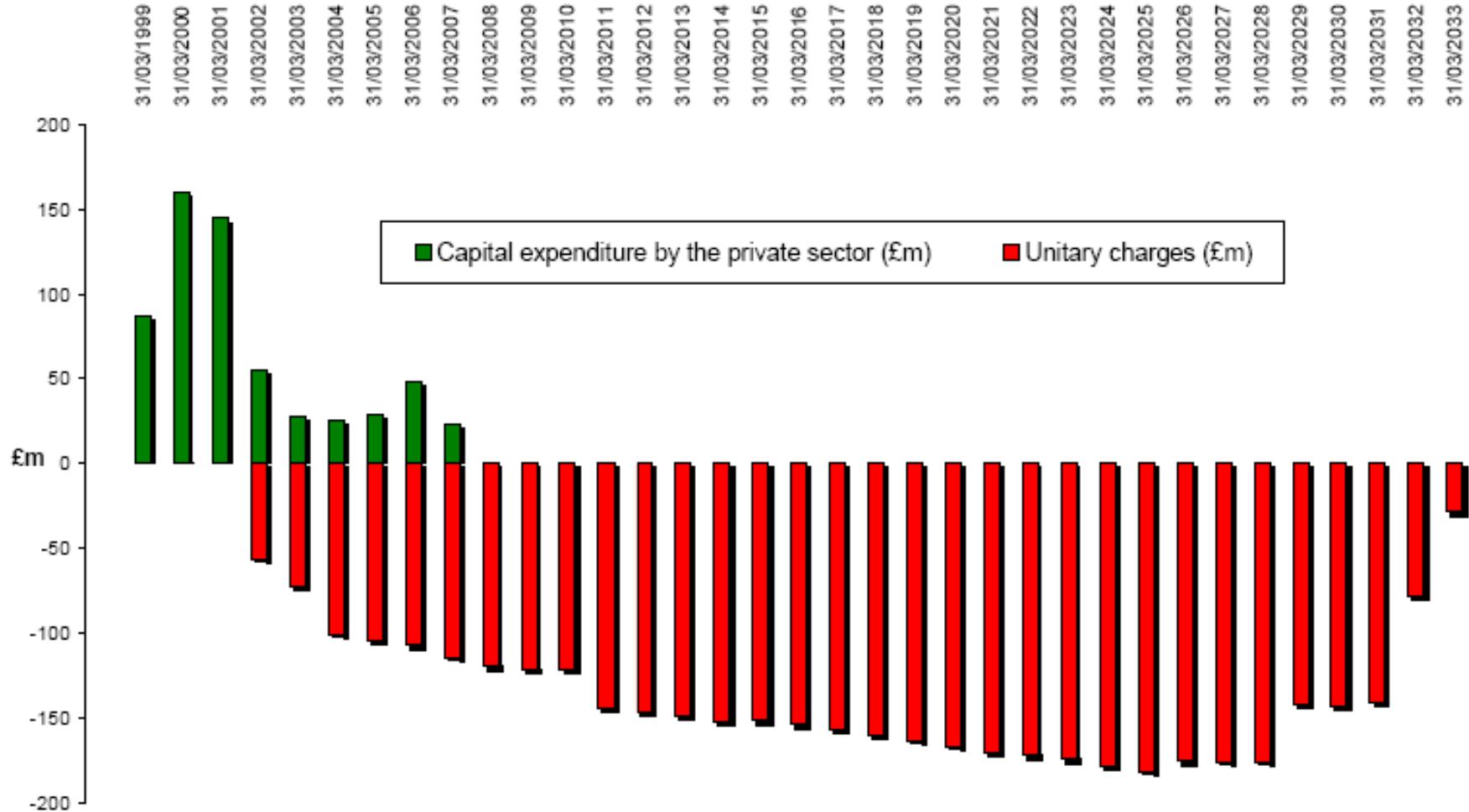
(<http://www.scotland.gov.uk/About/scotPerforms/purposes>)

## Questions to be addressed...

- What is the economy for?
- Is economic growth sustainable, and does it generate health and fairness?
- What makes for 'healthy economics'?
- Explaining health trends in Scotland?

**Is our economic growth sustainable?**

Figure 1. Payments incurred by the NHS in Scotland under signed PFI contracts<sup>i,ii</sup>



i Projections are at current prices.

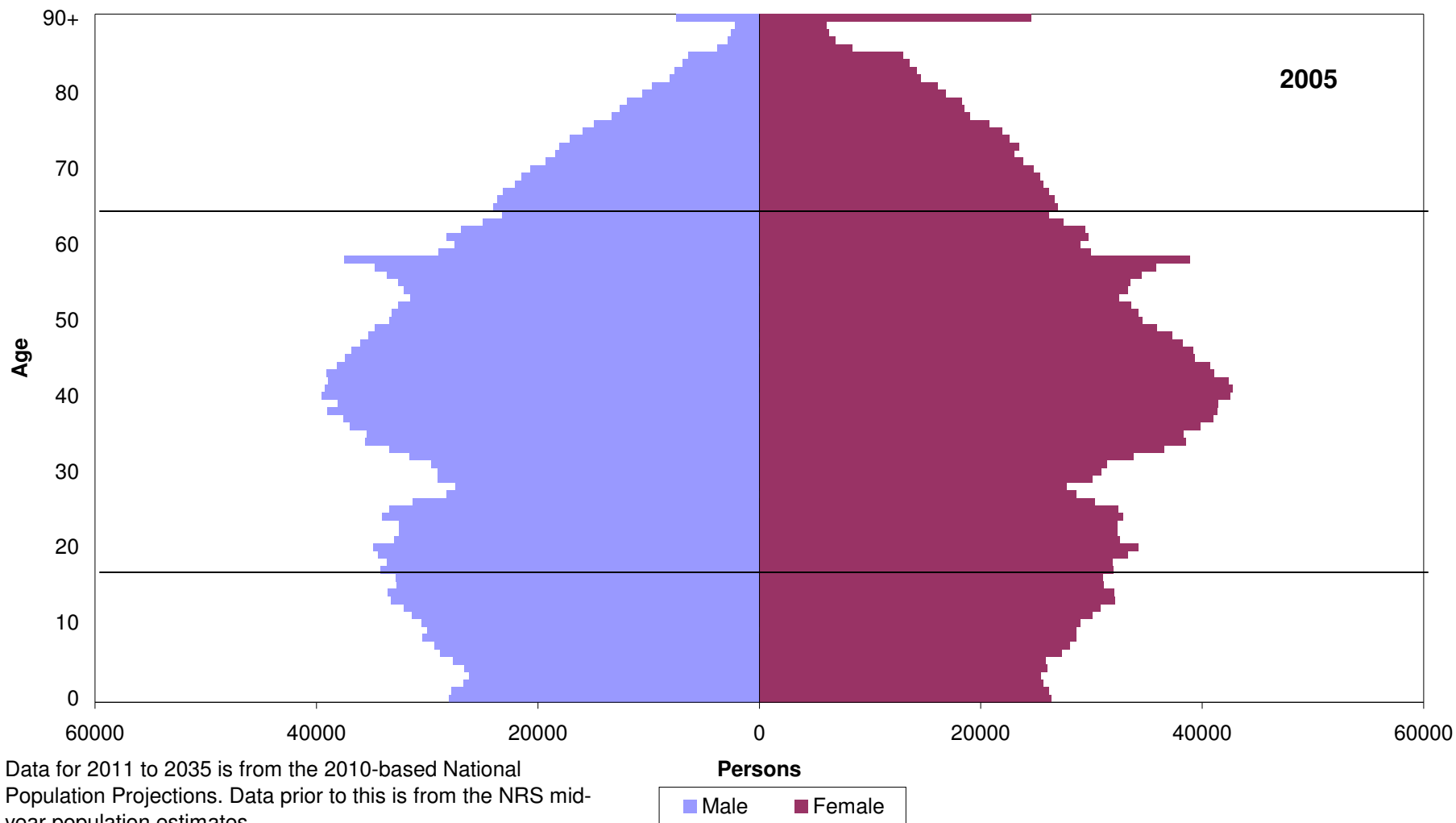
ii Data provided by the Scottish Executive in response to two Freedom of Information requests. The first, showing unitary charges, was received May 2006, the second, showing capital expenditure, was received in November 2006.

Source: Hellowell M , Pollock AM. The impact of PFI on Scotland's NHS: a briefing. Edinburgh, Centre for International Public Health Policy, 2006.

# Scotland's population - 1981

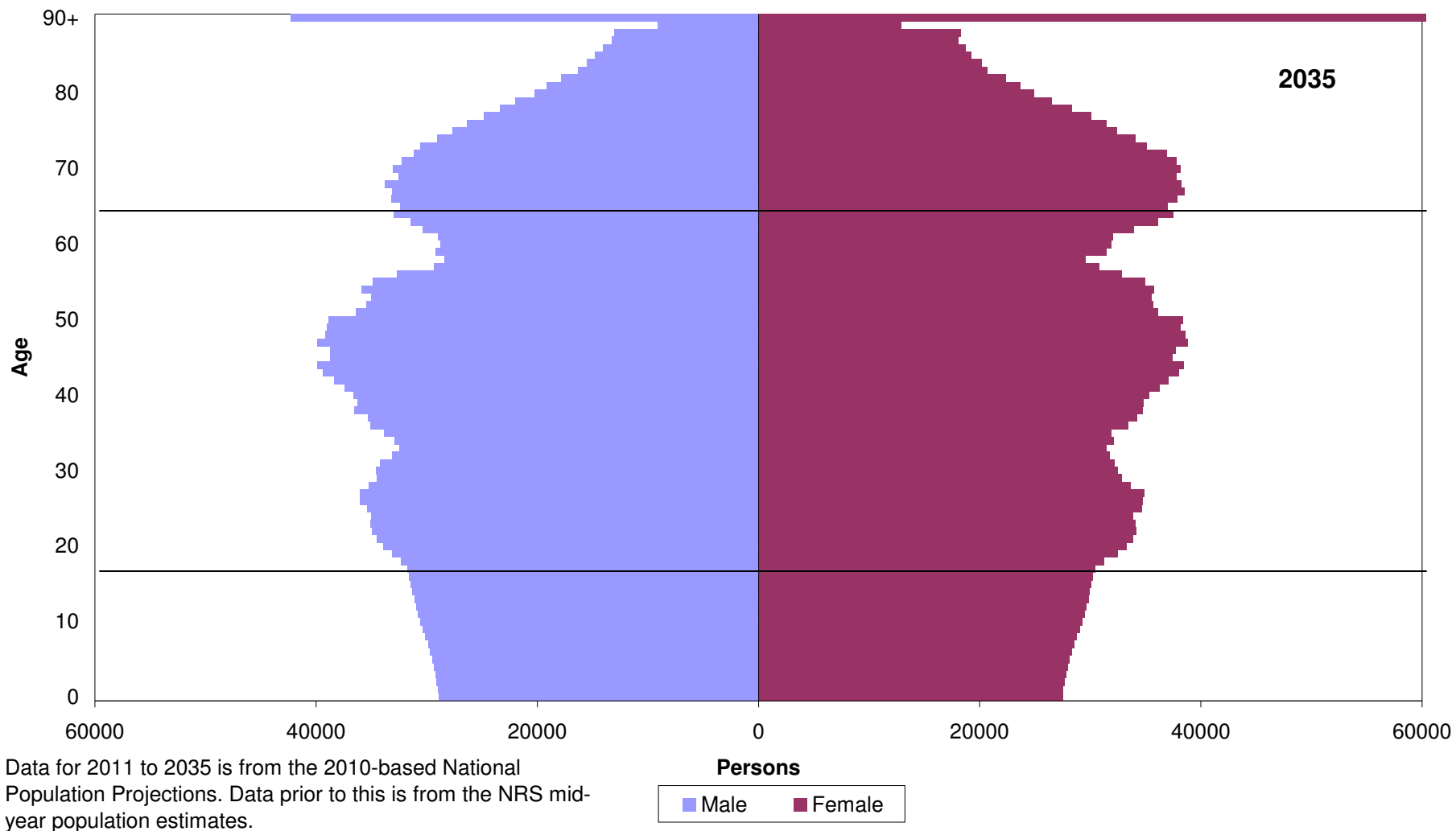


# Scotland's population - 2005

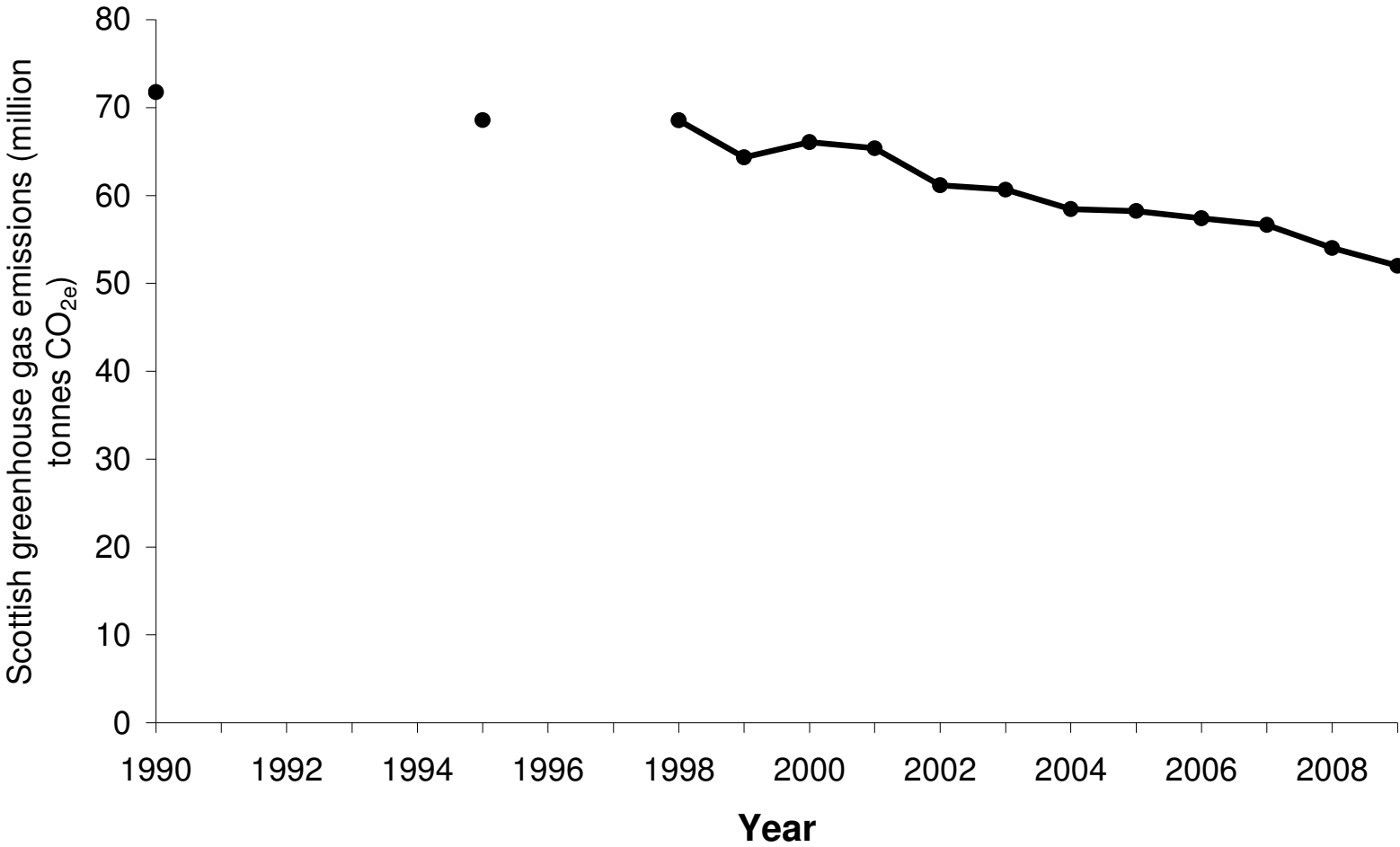




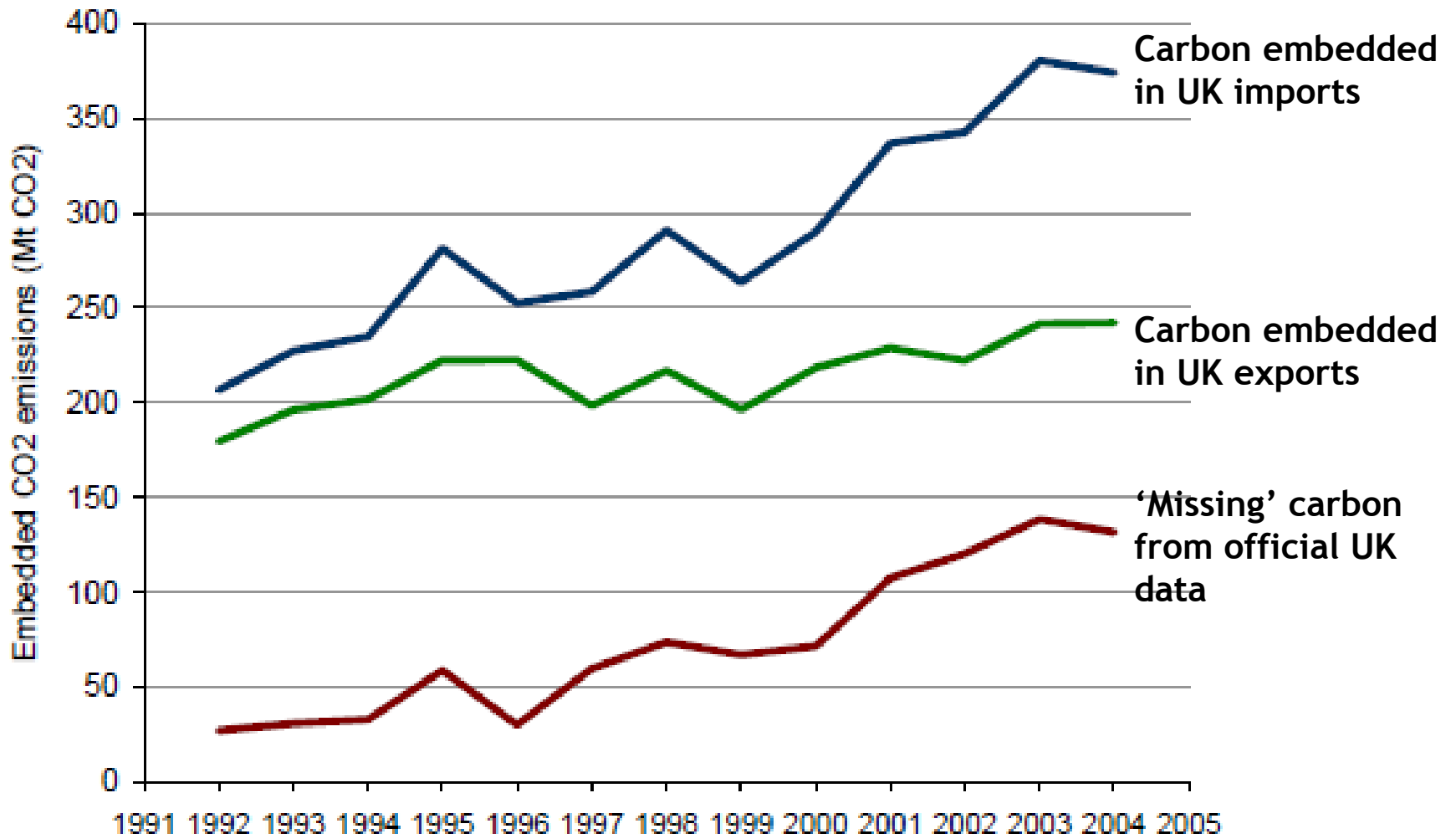
# Scotland's population - 2035 (projected)



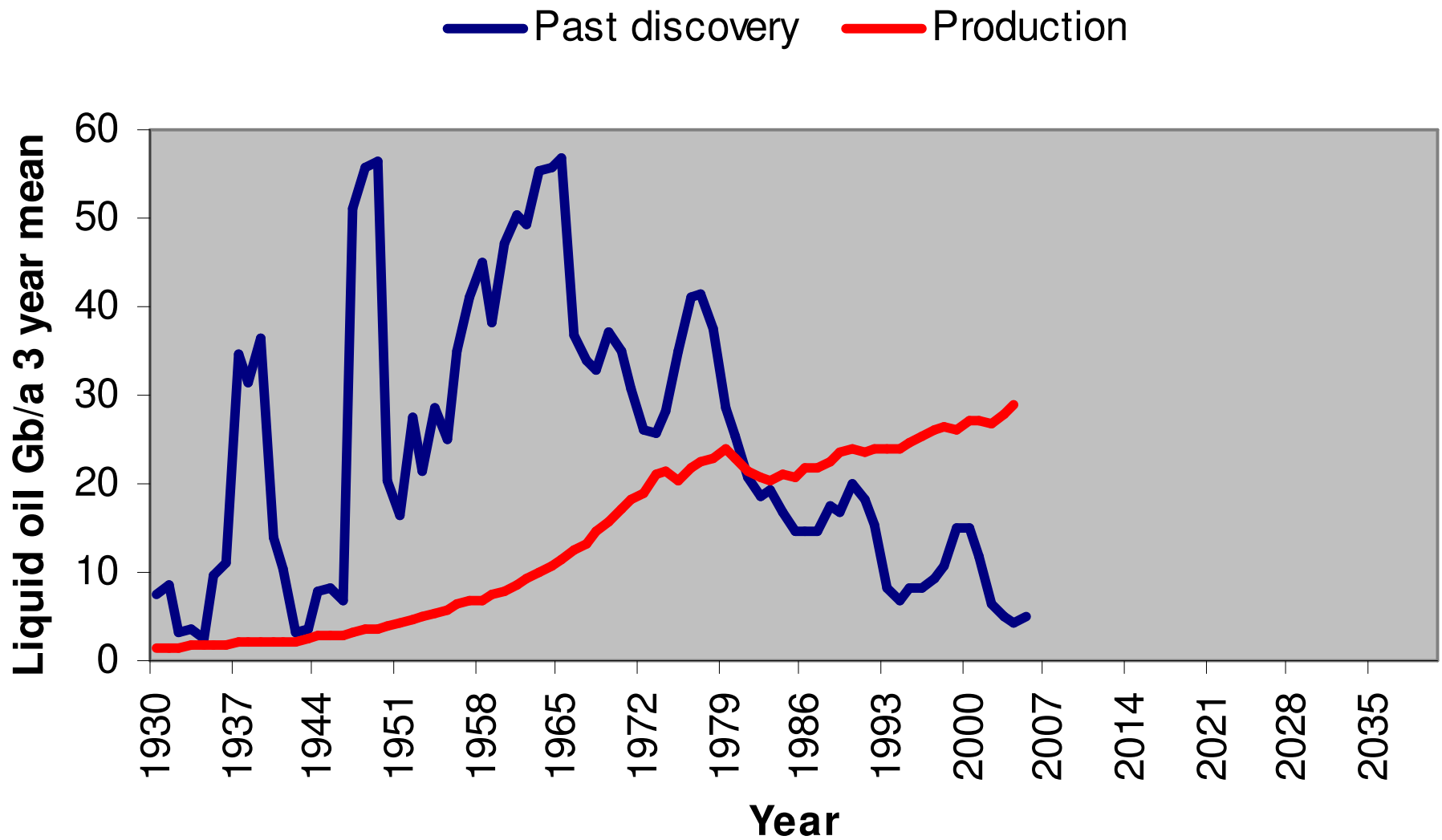
# Greenhouse gas emission trends in Scotland



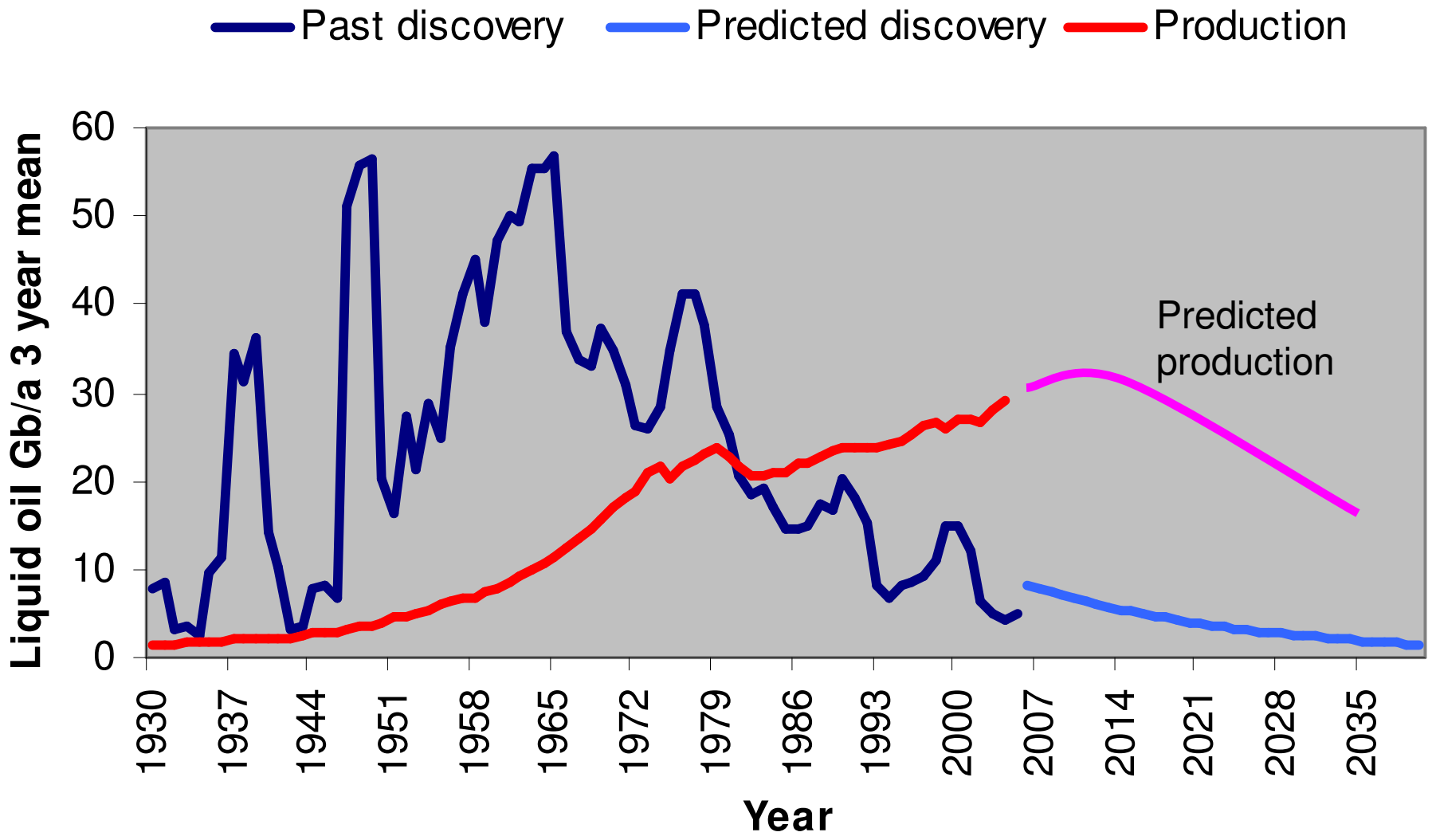
Source: Scottish Government website, May 2012  
(<http://www.scotland.gov.uk/About/scotPerforms/purposes/sustainability#a2>).



Source: Wiedmann, T., Wood, R., Lenzen, M., Minx, J., Guan, D. and Barrett, J. (2008) *Development of an Embedded Carbon Emissions Indicator - Producing a Time Series of Input-Output Tables and Embedded Carbon Dioxide Emissions for the UK by Using a MRIO Data Optimisation System*, Report to the UK Department for Environment, Food and Rural Affairs by Stockholm Environment Institute at the University of York and Centre for Integrated Sustainability Analysis at the University of Sydney, June 2008. Defra, London, UK



Source: Campbell C. *Oil Crisis*. Brentwood: Multi science publishing, 2005.



Source: Campbell C. *Oil Crisis*. Brentwood: Multi science publishing, 2005.

# So, is our economy sustainable?

- Financial debts
- Demographic change
- Carbon emissions and importing
- Oil dependency and increasing scarcity
  
- ... no, radical change is required
- ... and an opportunity to create a healthier economic system

**Does economic growth create fairness  
and health?**

# At an individual level

Health is known to improved by:

- Good jobs
- Increased income and living standards
- Greater access to many good and services
- Being near the top of a hierarchy

Sources:

Roelfs DJ, Shor E, Davidson KW, Schwartz JE. Losing life and livelihood: A systematic review and meta-analysis of unemployment and all-cause mortality. *Social Science & Medicine* 2011; 72: 840-854.

Marmot M, Wilkinson RG. *Social Determinants of Health*. Oxford, Oxford University Press, 2003.



## At society level:

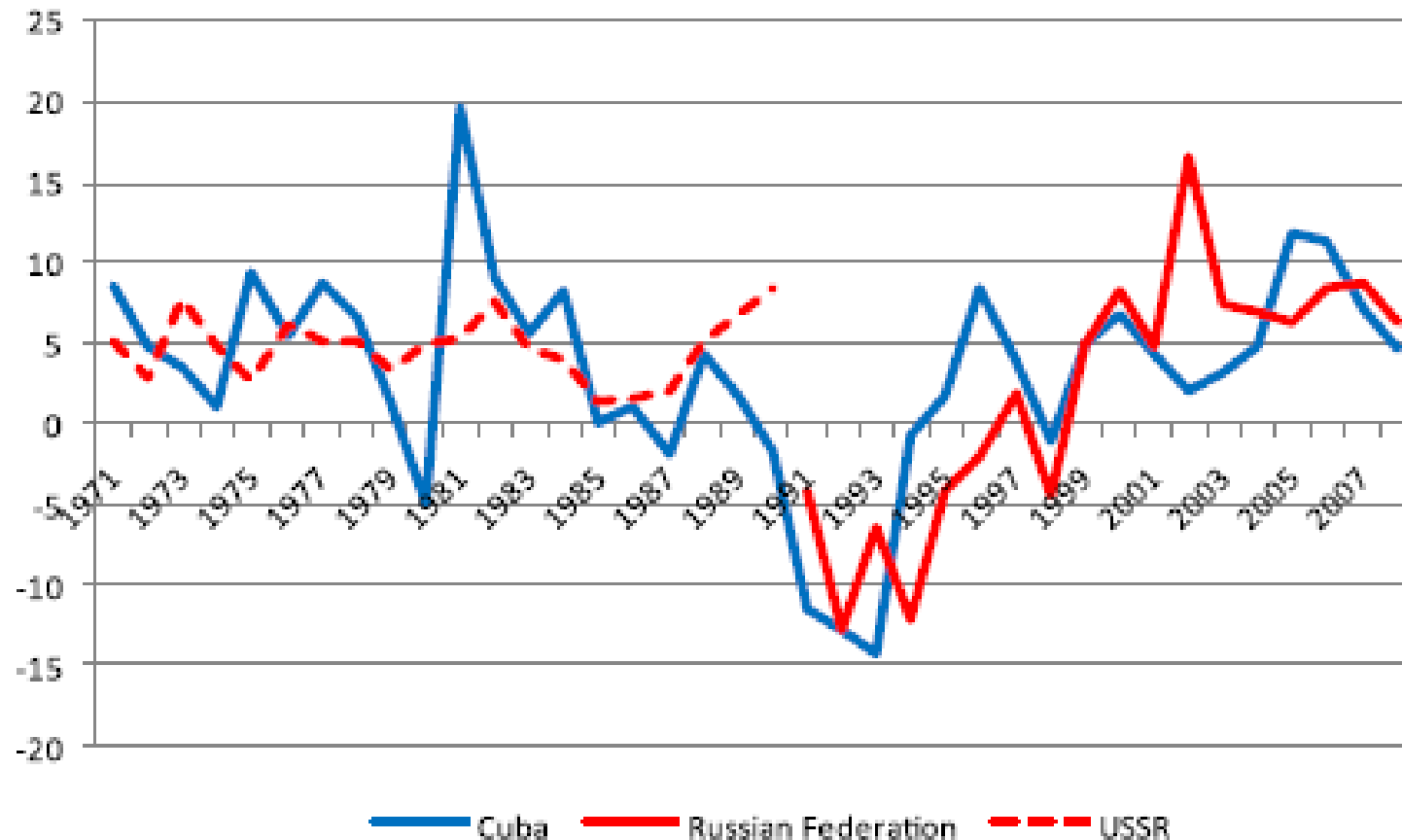
- Economic growth associated with vast declines in overall mortality

But:

- Often associated with rising health and income inequalities
- Rise in some specific causes of death
- Some examples of nations which have created health by changing their economy rather than growing their economy

# Case study – Russian Federation and Cuba

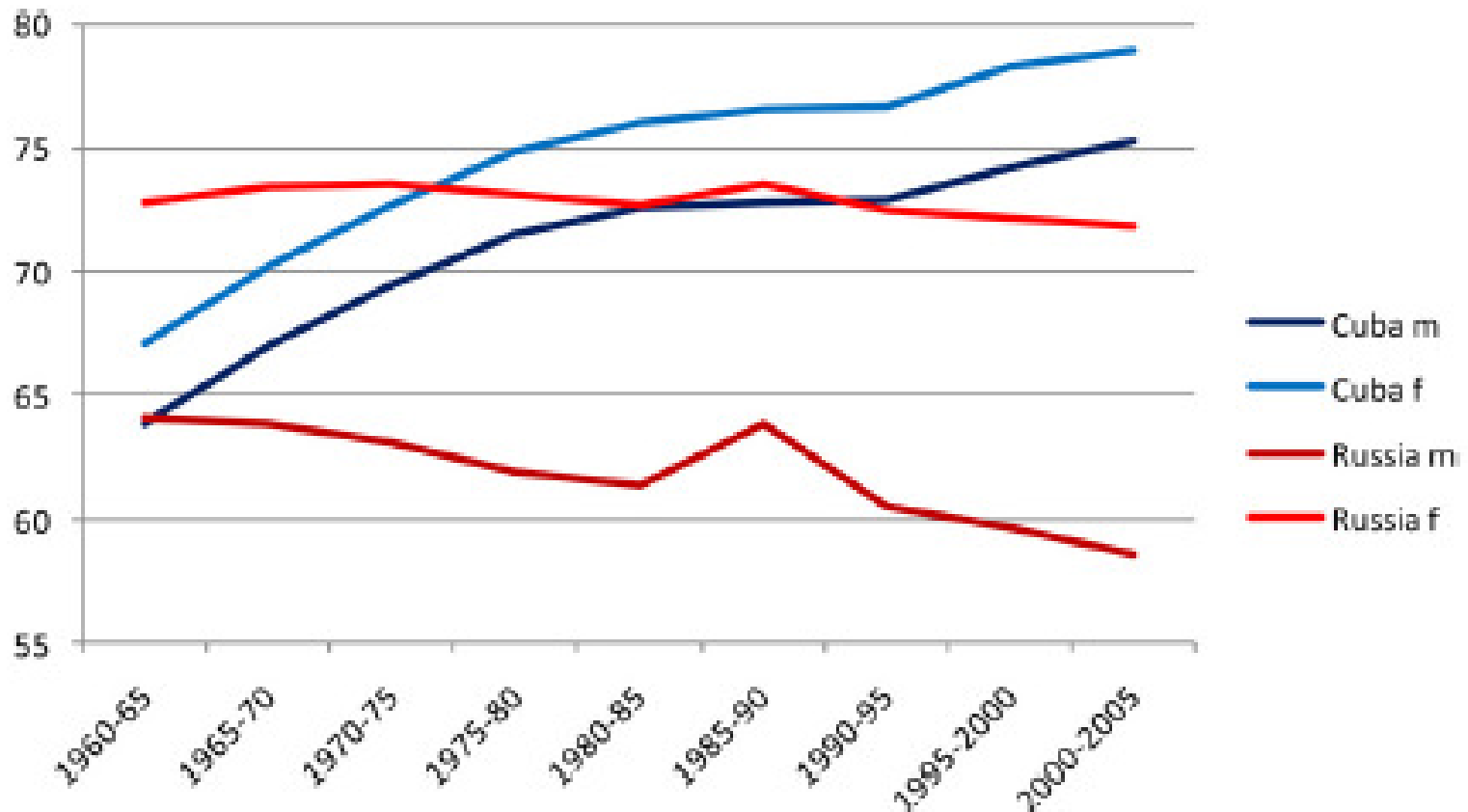
GDP growth (1990 prices in %), 1971 - 2008.



Source: Borowy I. Similar but different: Health and economic crisis in 1990s Cuba and Russia. *Social Science & Medicine* 2011; 72 :1489-1498

# Case study – Russian Federation and Cuba

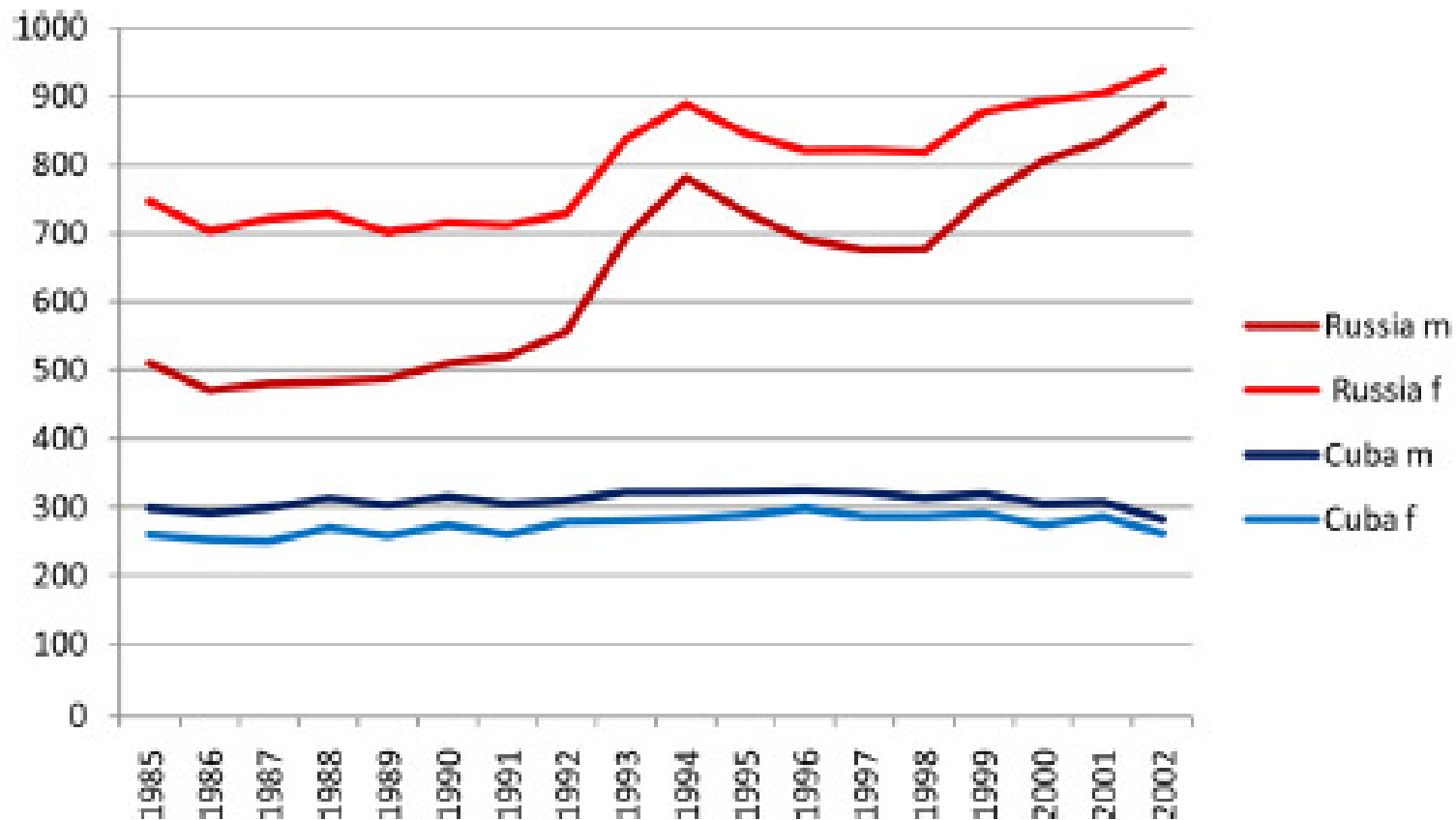
## Life expectancy trends in Cuba and Russia



Source: Borowy I. Similar but different: Health and economic crisis in 1990s Cuba and Russia. *Social Science & Medicine* 2011; 72 :1489-1498

# Case study – Russian Federation and Cuba

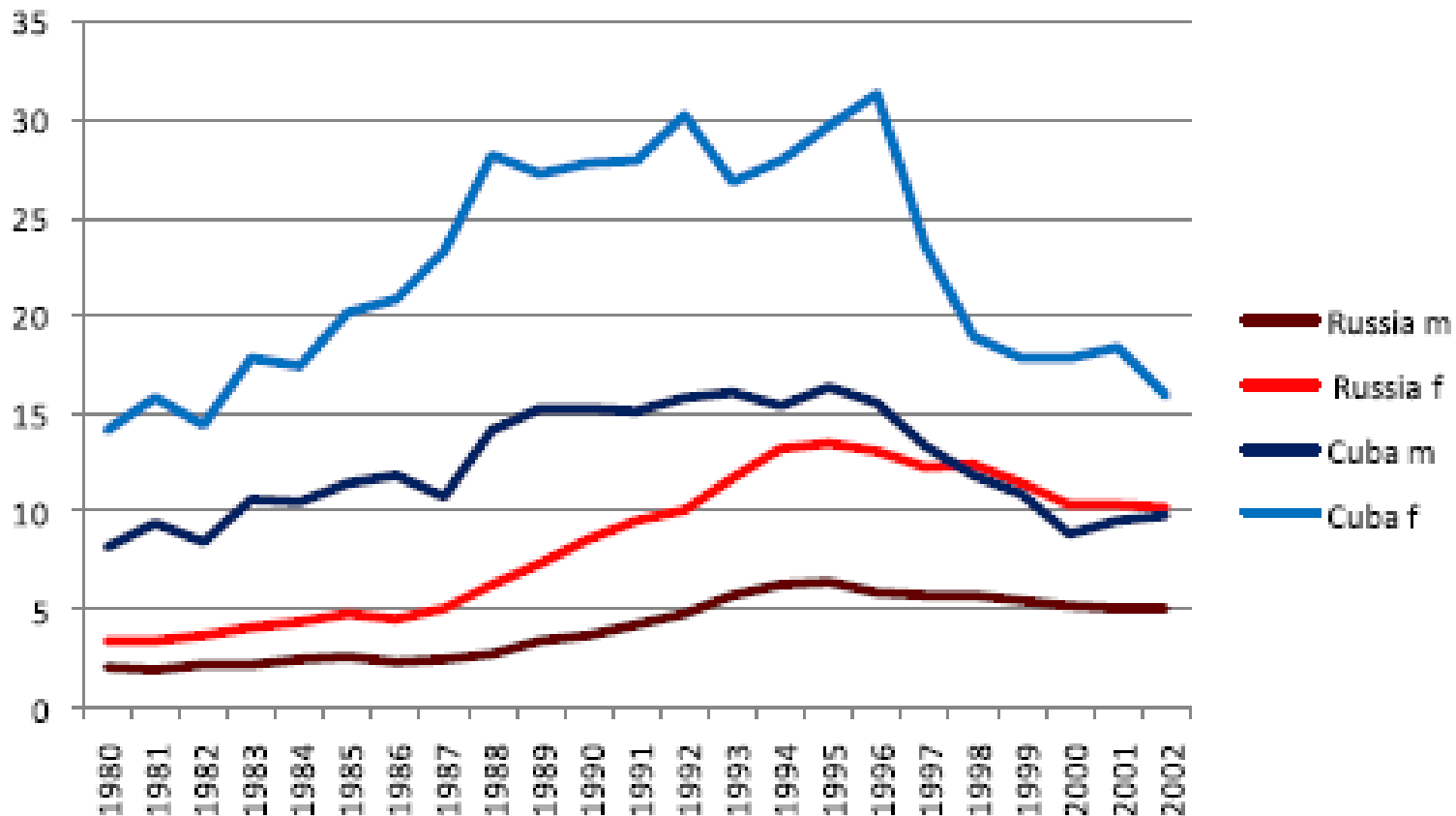
## Mortality due to cardiovascular disease



Source: Borowy I. Similar but different: Health and economic crisis in 1990s Cuba and Russia. *Social Science & Medicine* 2011; 72 :1489-1498

# Case study – Russian Federation and Cuba

## Mortality rate attributed to diabetes



Source: Borowy I. Similar but different: Health and economic crisis in 1990s Cuba and Russia. *Social Science & Medicine* 2011; 72 :1489-1498

## Case study – Russian Federation and Cuba

“economic crises ... need not turn into crises of public health”

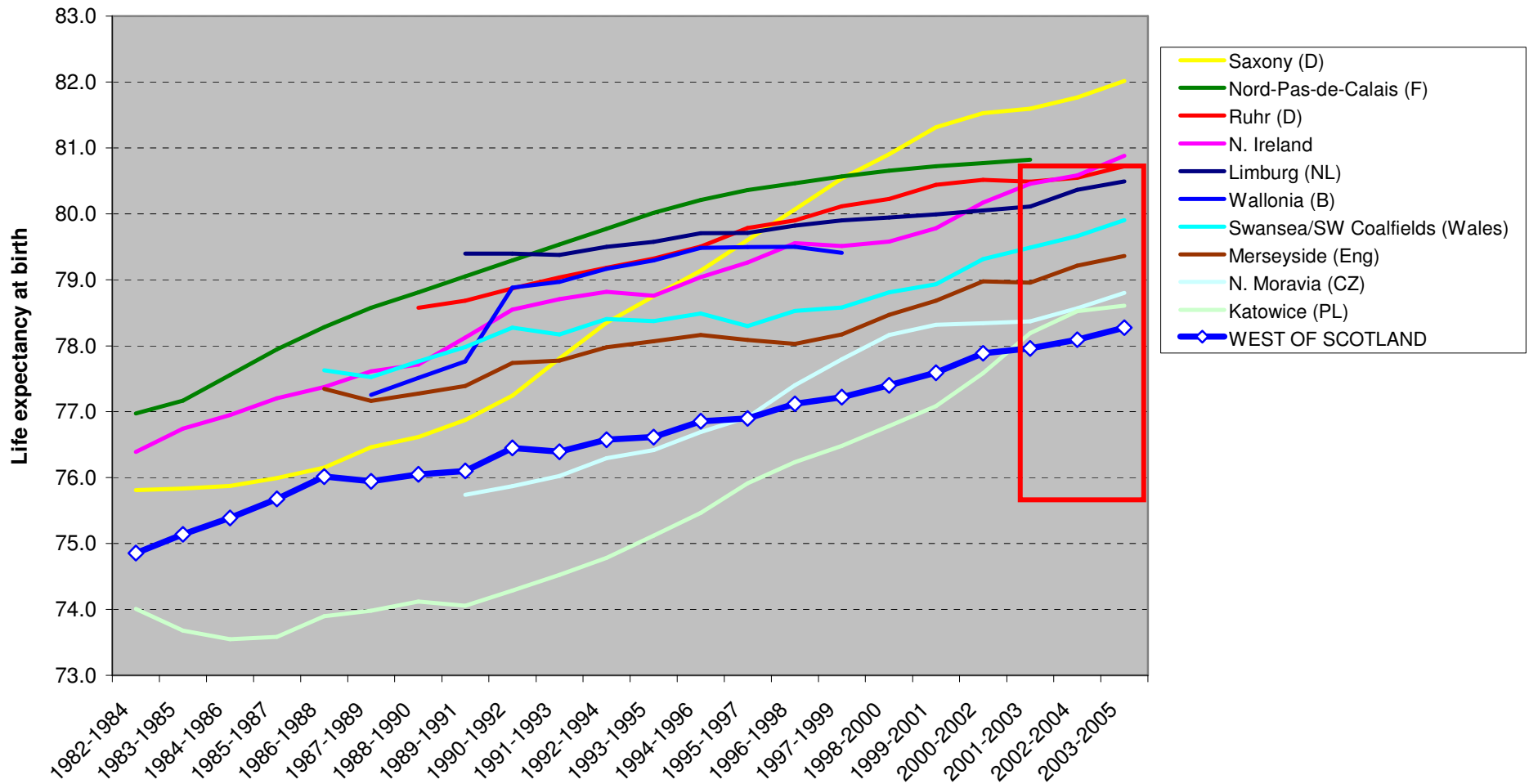
“long-term policies that prioritize public health, societal values that encourage interpersonal cooperation and support, a general commitment to egalitarianism that provides broad access to food, education and health care and that facilitates an even distribution of the burdens of economic shock, are all beneficial in times of economic crisis”

Source: Borowy I. Similar but different: Health and economic crisis in 1990s Cuba and Russia. *Social Science & Medicine* 2011; 72 :1489-1498

# **Case study – European deindustrialised areas**

## Female life expectancy at birth, West of Scotland and ten selected regions

Calculated from original source mortality and population data - see Appendix 4 of report for details

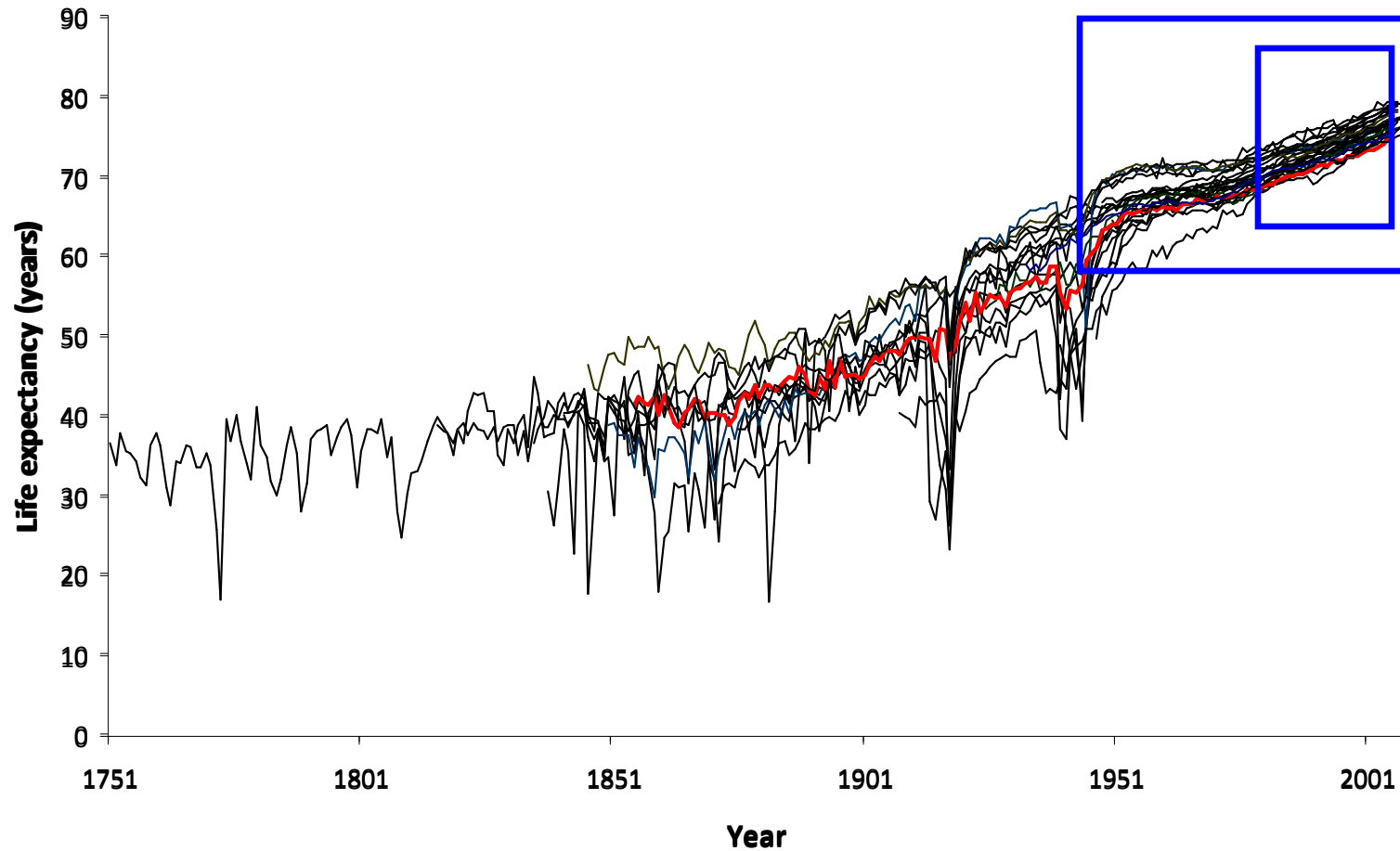


Source: Taulbut M, Walsh D, Parcell S, Hanlon P, Hartmann A, Poirier G, Strniskova D. Health and its determinants in Scotland and other parts of post-industrial Europe: The Aftershock of Deindustrialisation Study phase two. Glasgow, GCPH, 2011.



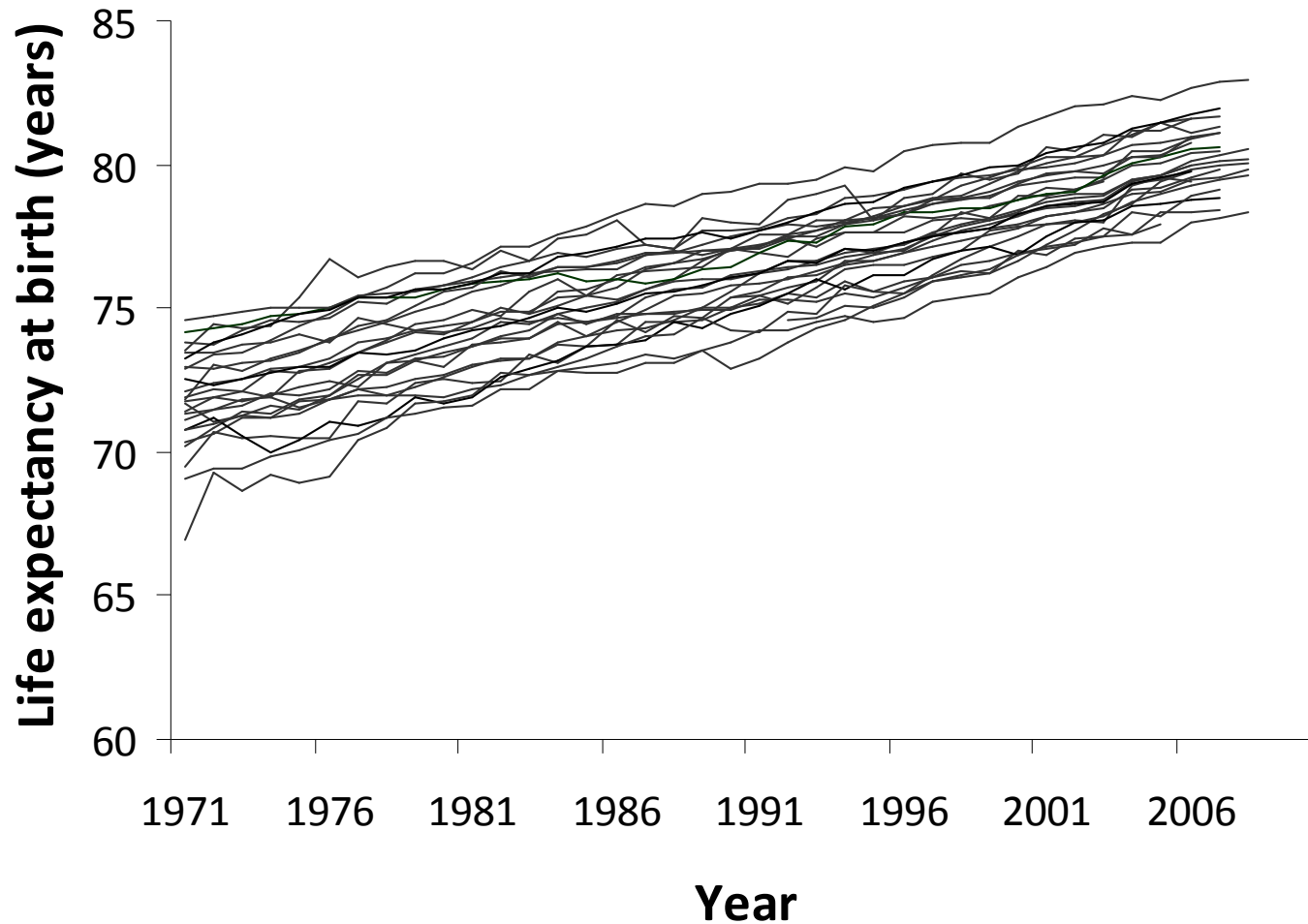
# **Explaining the Scottish health trends**

# Male life expectancy in available high income nations



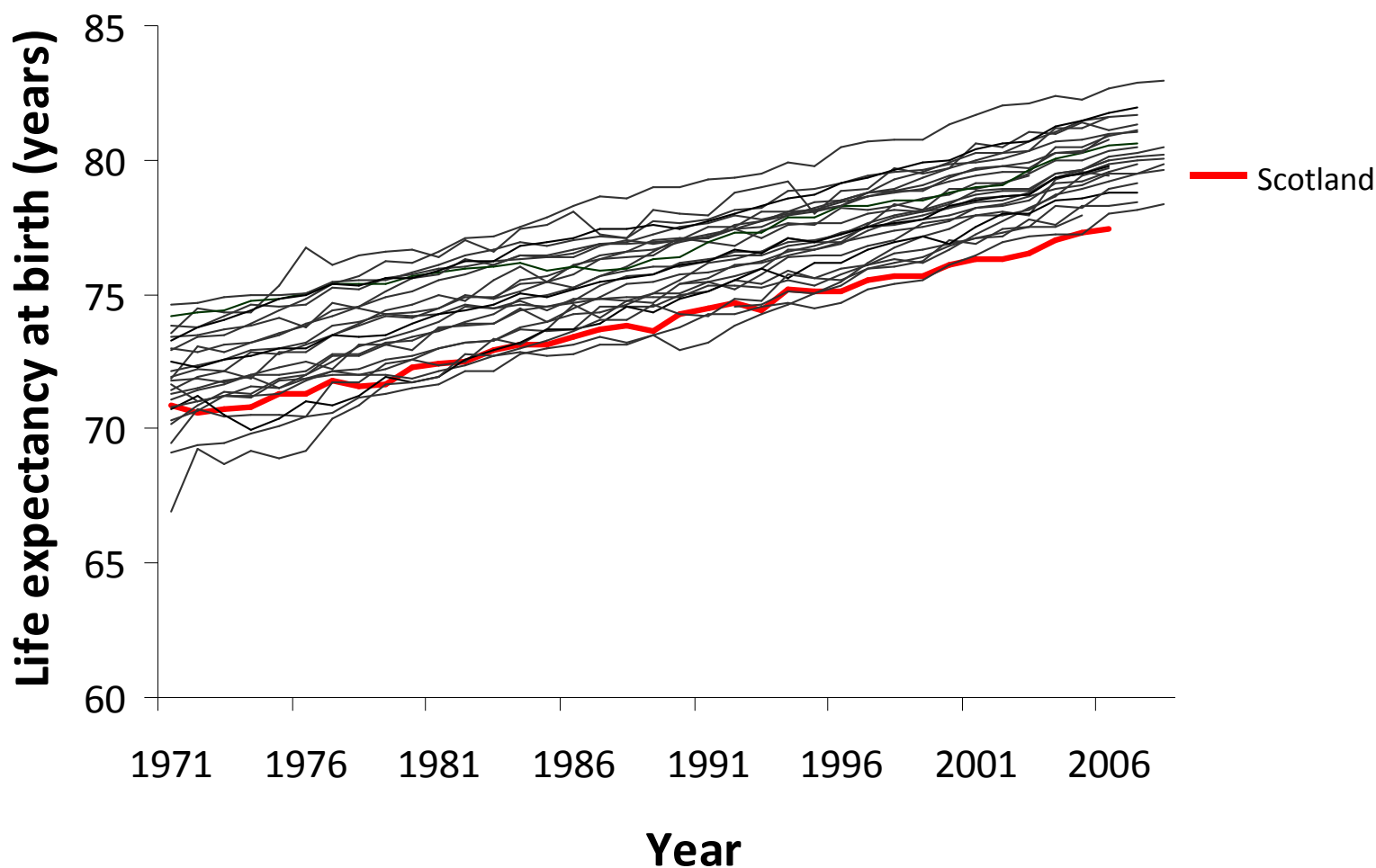
Data extracted from the Human Mortality Database for: Australia, Austria, Belgium, Canada, Chile, Denmark, England & Wales, Finland, France, Germany, Ireland, Iceland, Israel, Italy, Japan, Luxembourg, Netherlands, New Zealand, Northern Ireland, Norway, Portugal, Scotland, Spain, Sweden, Switzerland, Taiwan & USA.

# Higher overall mortality than comparable nations



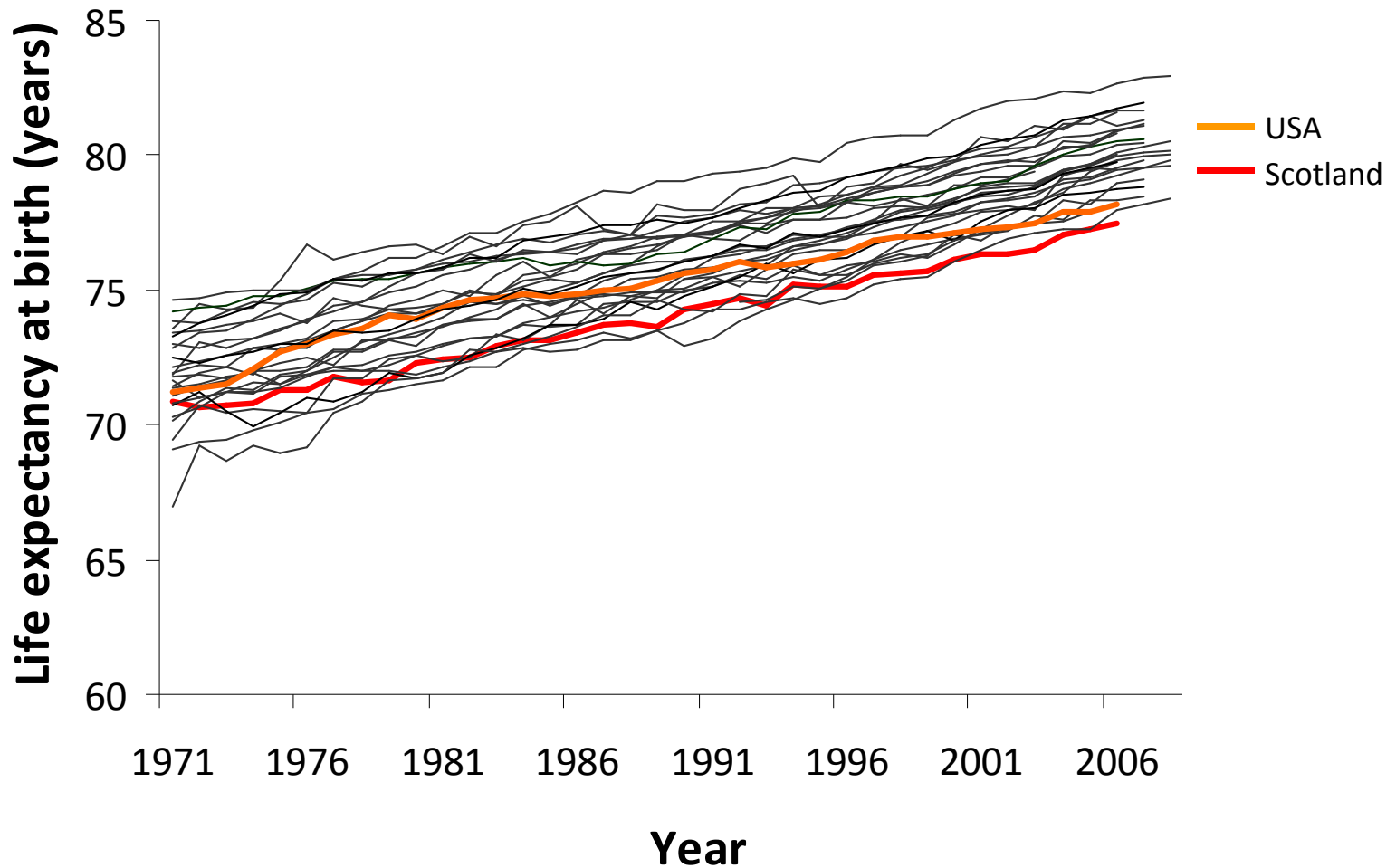
Data extracted from the Human Mortality Database for: Australia, Austria, Belgium, Canada, Chile, Denmark, England & Wales, Finland, France, Germany, Ireland, Iceland, Israel, Italy, Japan, Luxembourg, Netherlands, New Zealand, Northern Ireland, Norway, Portugal, Spain, Sweden, Switzerland, Taiwan & West Germany.

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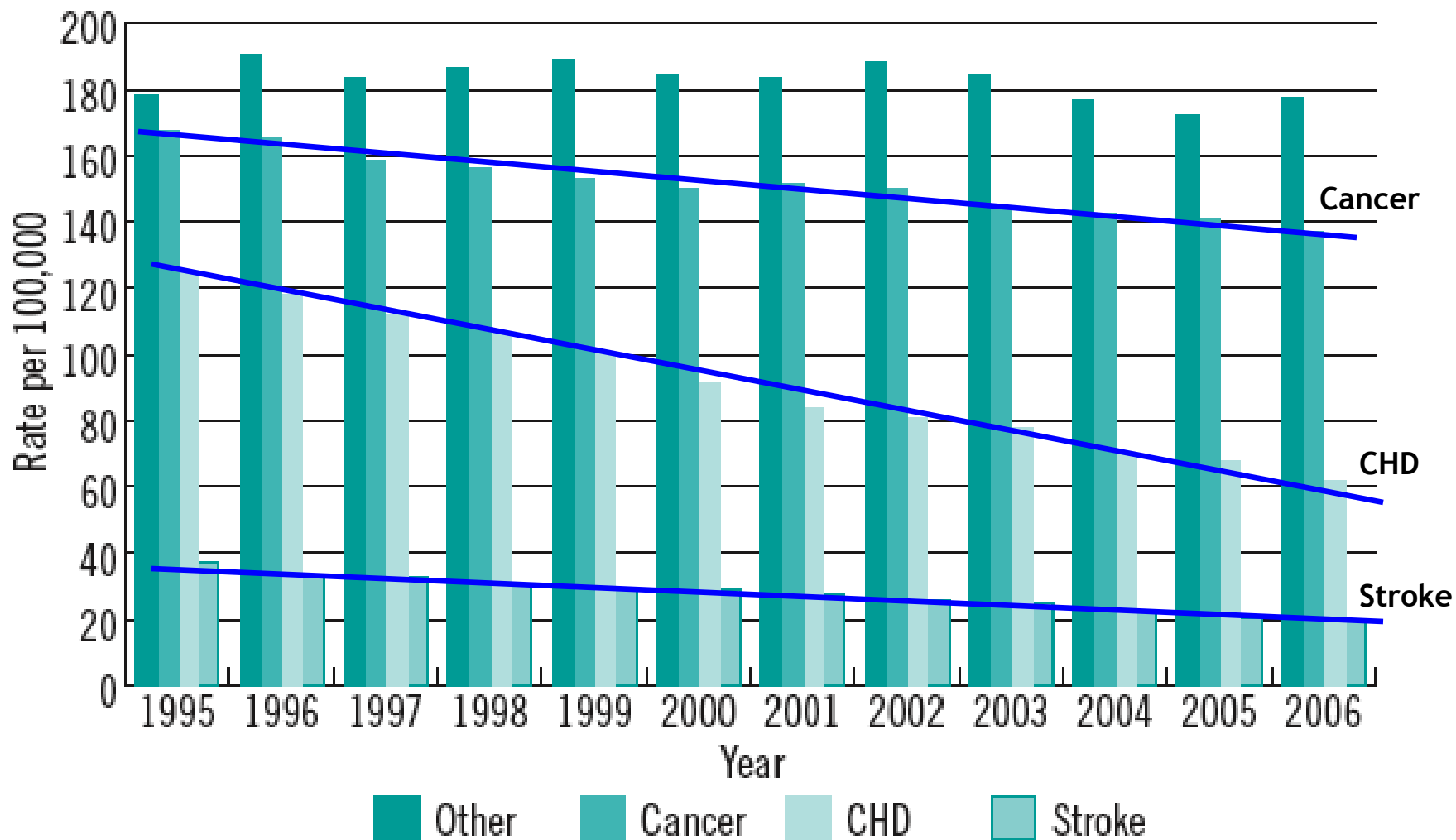
Figure 1

## Trends in Mortality

### The Big 3 Killers

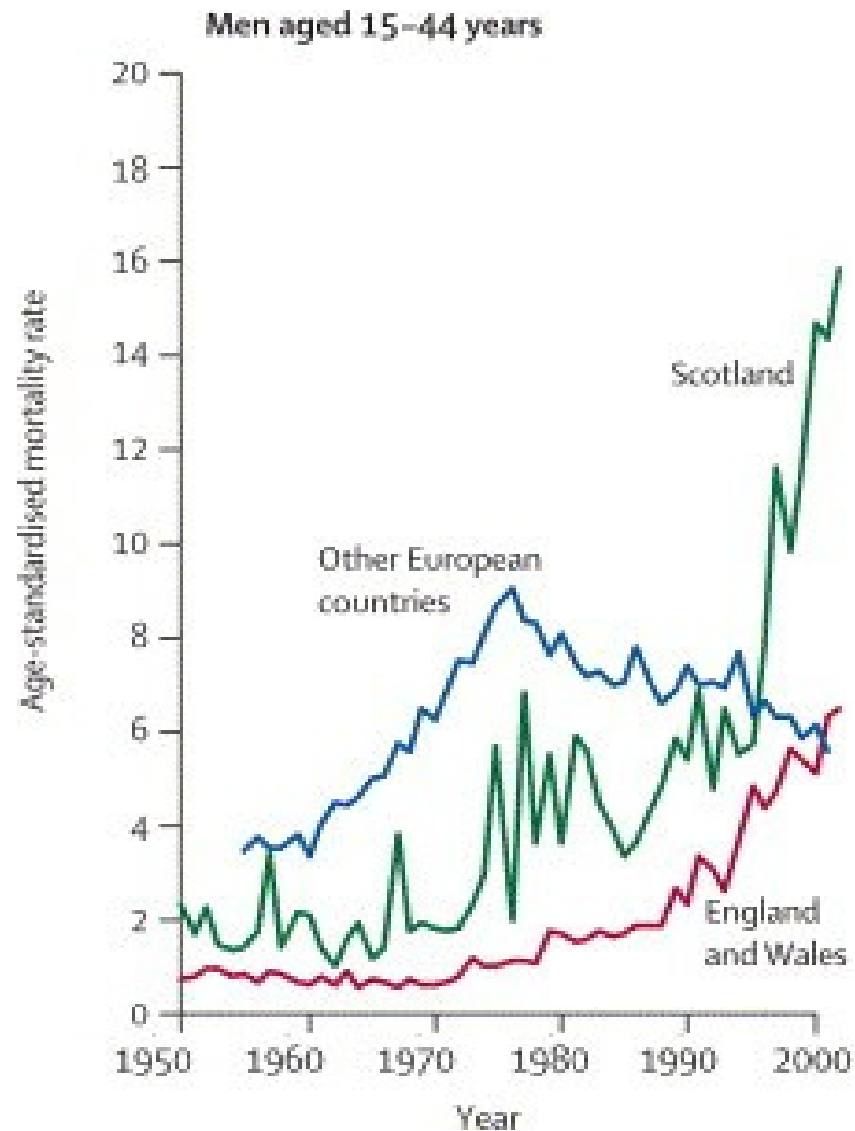
Mortality Rates for the under 75s 1995-2006

(Rate per 100,000; Age standardised to the European Population)



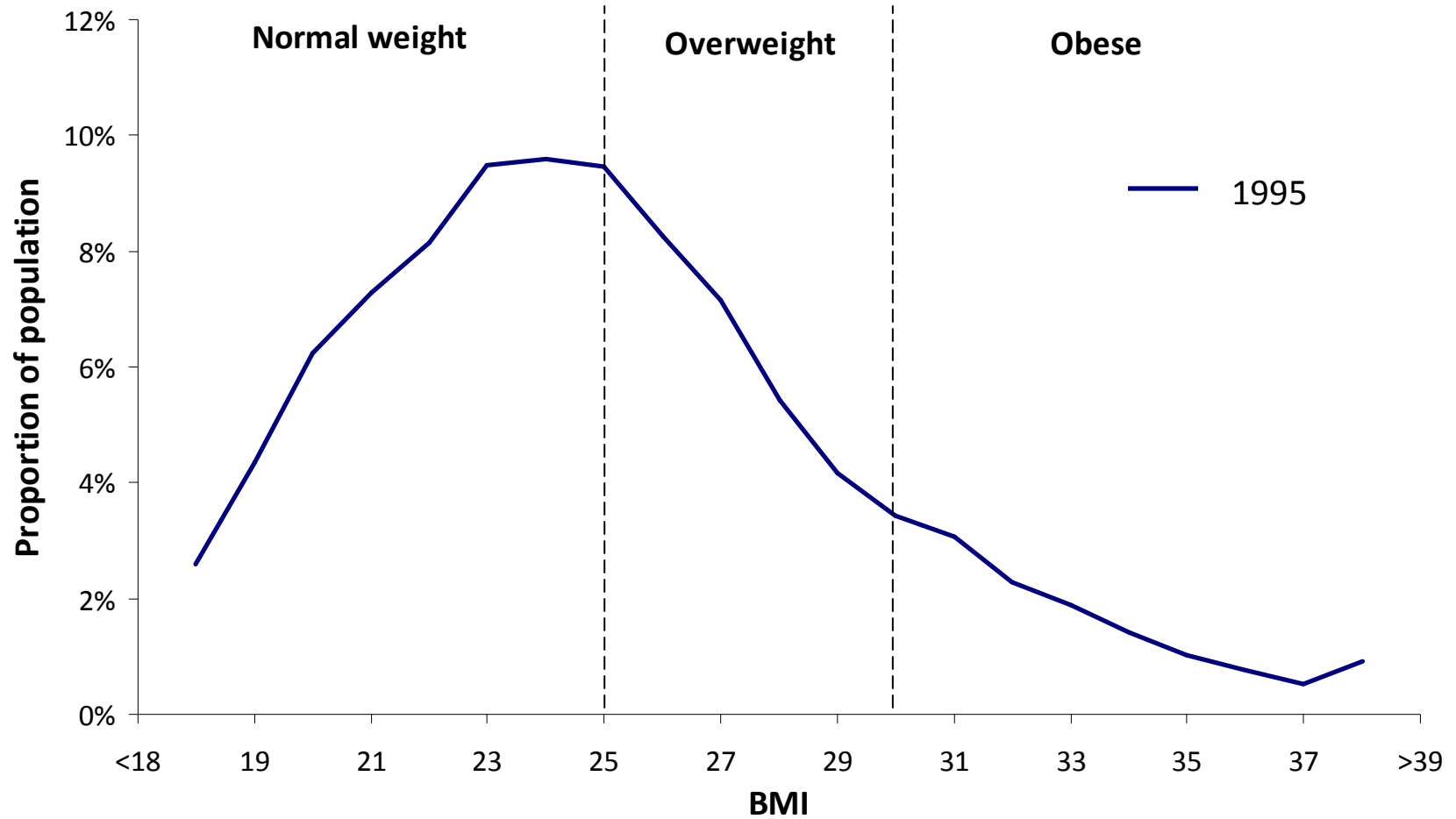
Source: Scottish CMO report 2009

# Mortality due to liver cirrhosis



Source: Leon D, McCambridge Liver cirrhosis mortality rates in Britain from 1950 to 2002: an analysis of routine data. *Lancet* 2006; 367(9504): 52-56.

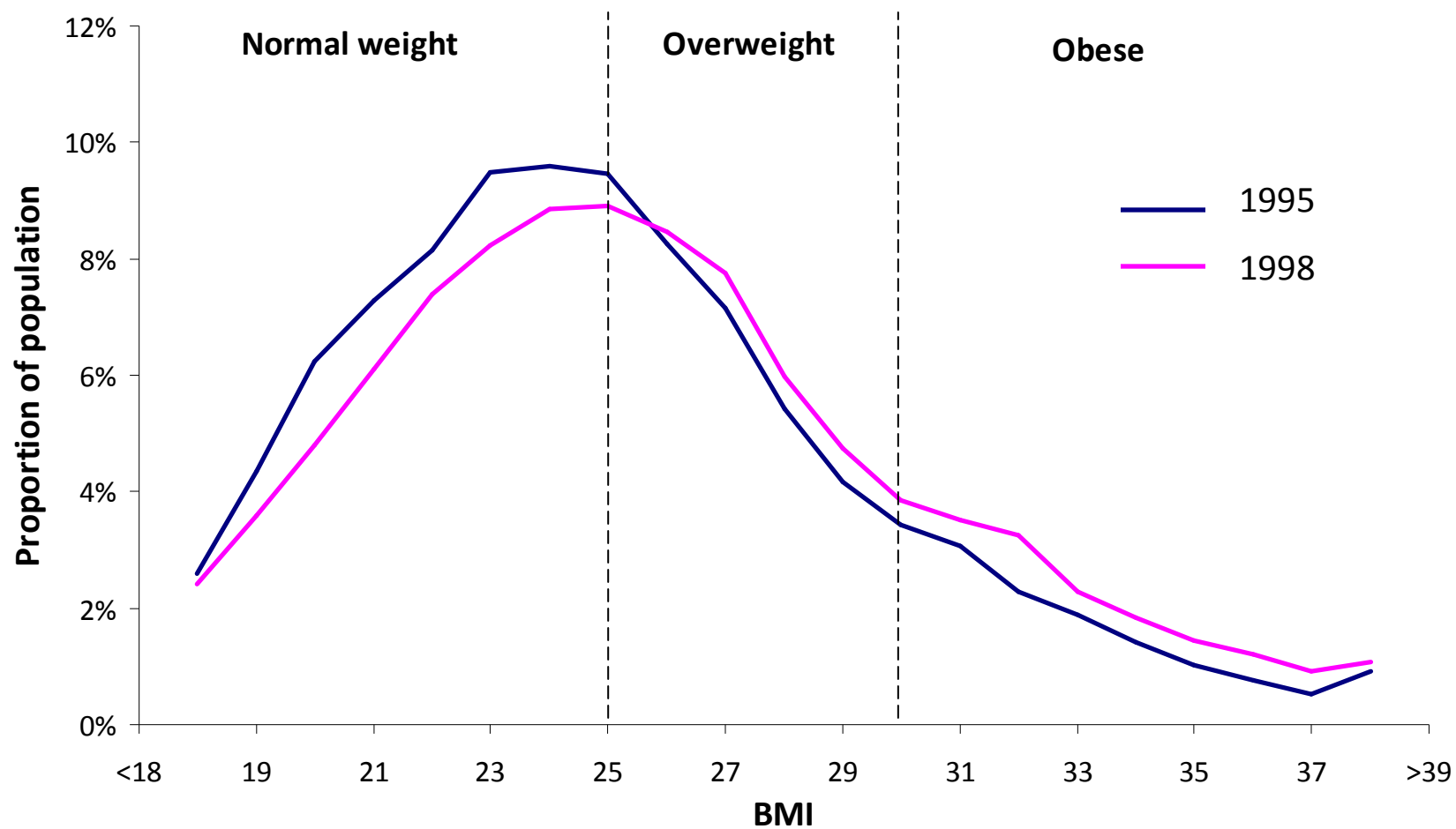
# BMI distribution of adults in NHS GGC



Source: adapted from the Scottish Health Survey

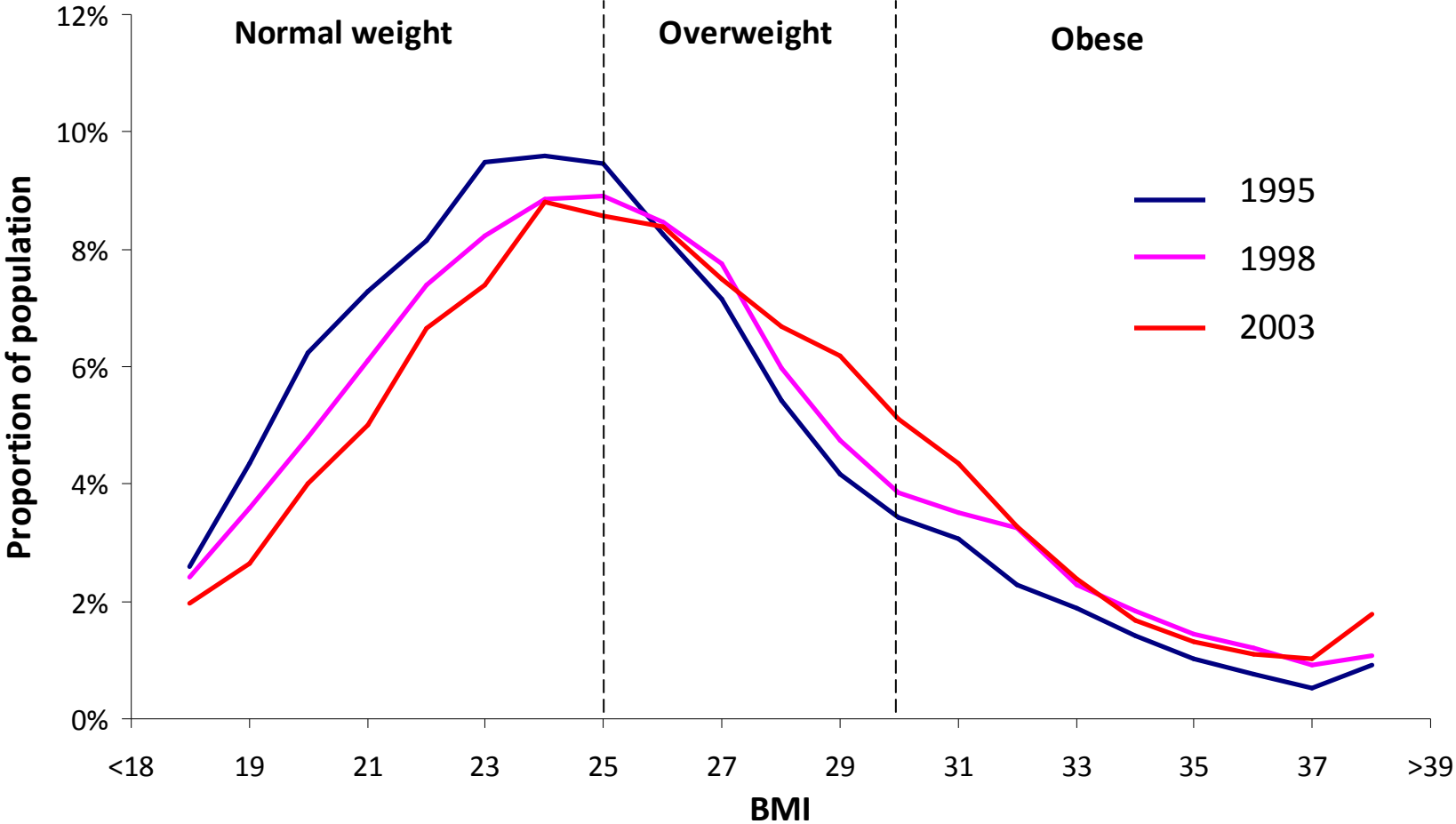


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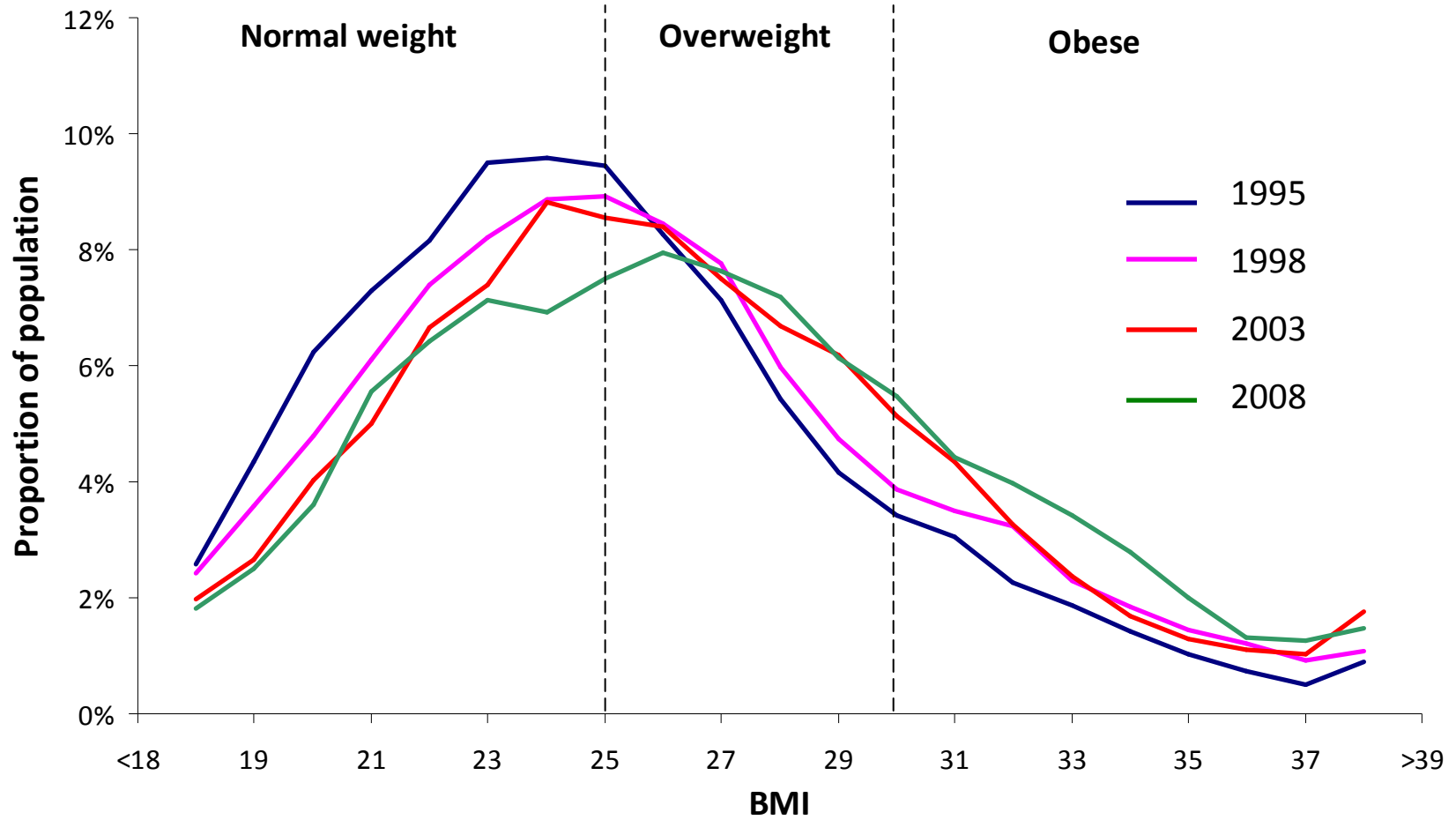
Source: adapted from the Scottish Health Survey

# BMI distribution of adults in NHS GGC



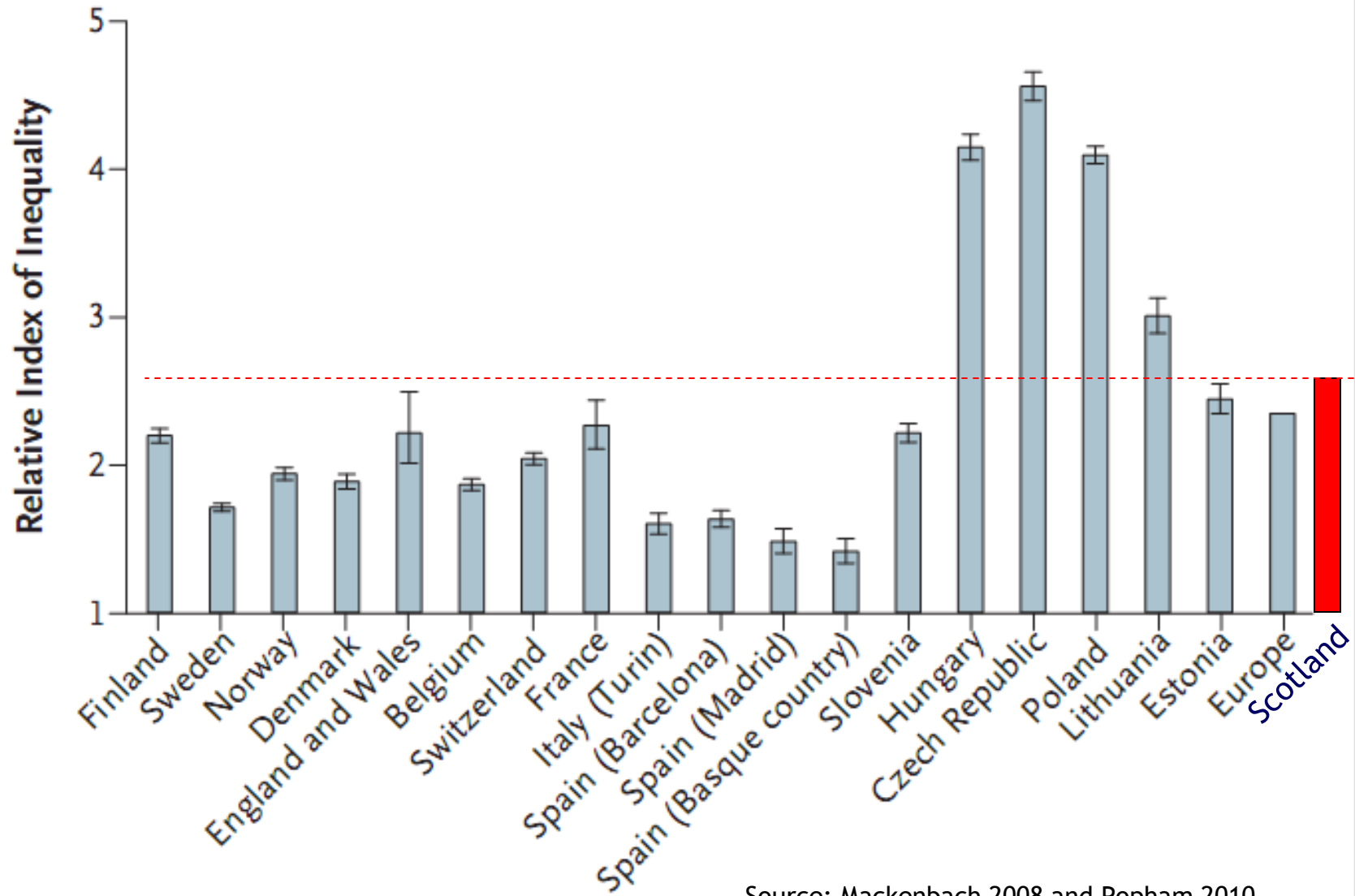
Source: adapted from the Scottish Health Survey

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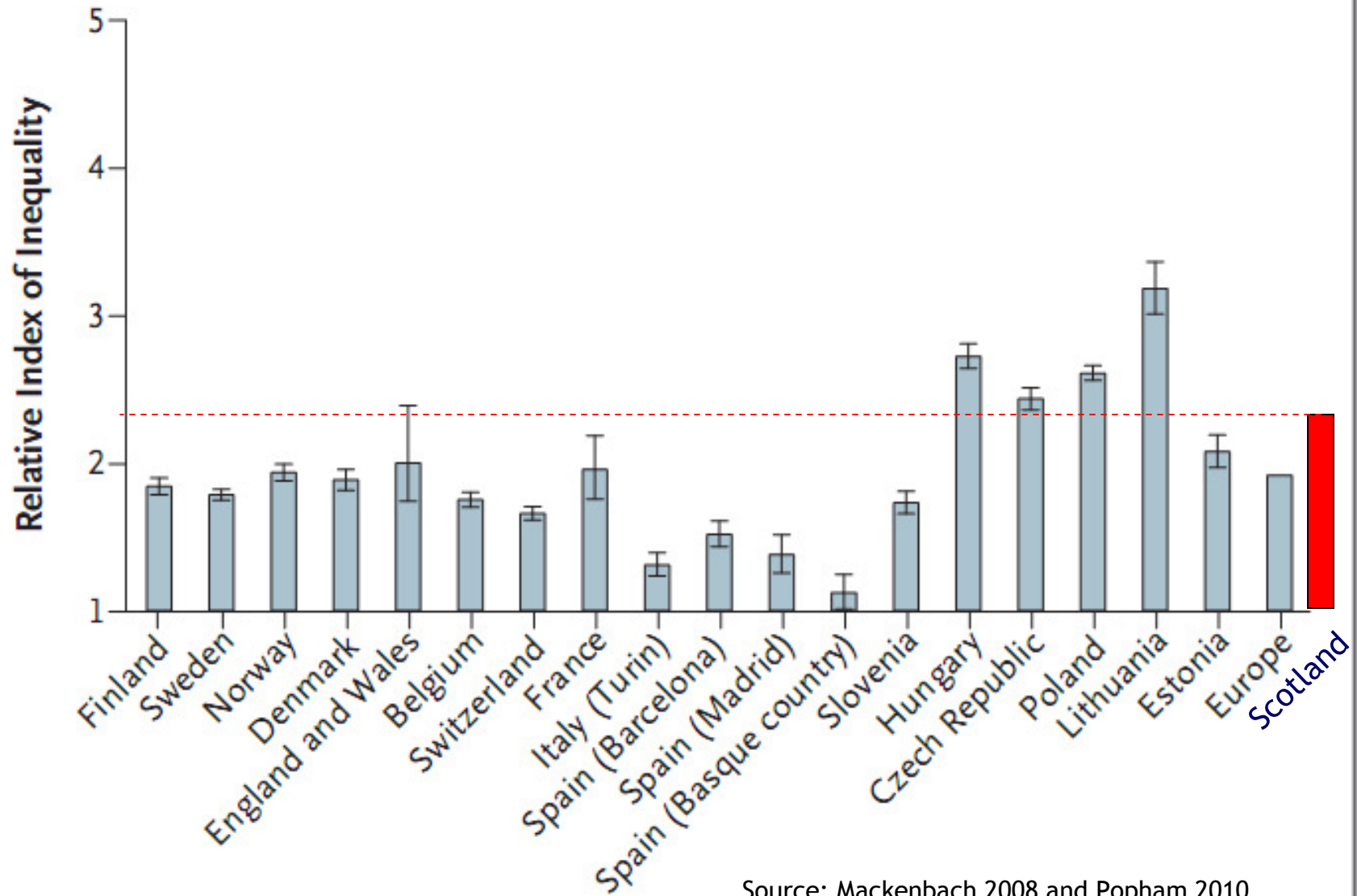
Source: adapted from the Scottish Health Survey

### A Education, Men



Source: Mackenbach 2008 and Popham 2010

## B Education, Women



Source: Mackenbach 2008 and Popham 2010

# Summary: the Scottish mortality phenomena

1. Scottish mortality is around European median until 1950 then diverges
2. Scottish mortality pattern changes and diverges again around 1980
3. Deprivation explains less of the higher mortality in Scotland and Glasgow from 1981 onwards (the Scottish/Glasgow Effect)
4. Scottish health inequalities are wider than the rest of western Europe

# **Hypotheses to explain the Scottish mortality phenomena**

1. Poverty and material deprivation
2. Migration
3. Genetic vulnerability
4. Health behaviours
5. Different culture of substance misuse
6. Different individual values (time, aspiration)
7. Family, gender or parenting differences
8. Health service supply or demand
9. Greater inequalities
10. Greater concentration of deprivation
11. Deindustrialisation
12. Sectarianism
13. Different culture (boundlessness, alienation)
14. Lower social capital
15. Culture of limited social mobility
16. Political attack
17. Climate (sunlight, cold weather)

Source: McCartney G, Collins C, Walsh D, Batty GC. Accounting for the Scottish Mortality Excess: towards a synthesis. Glasgow, Glasgow Centre for Population Health, 2010.



# 1. Poverty and material deprivation

- Relevant to earlier divergence and ‘Scottish/Glasgow Effect’
- Absence of evidence for earlier period
- Carstairs has become dated
- Glasgow, Liverpool & Manchester

For example: George S. It’s not just deprivation – or is it? Public Health 2010; doi:10.1016/j.puhe.2010.05.012 ; and Reid J. Excess mortality in the Glasgow conurbation: exploring the existence of a Glasgow effect. University of Glasgow, 2008.



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from Wikimedia Commons  
<http://upload.wikimedia.org/wikipedia/commons/f/f2/Royston.jpg>

## 4. Health behaviours

- Alcohol – low mortality rates until around 1990
- Tobacco – prevalence of use and tobacco-related deaths high but cannot explain excess mortality
- Illicit drugs – rapid rise in deaths during 1980s
- Physical activity – lack of evidence
- Diet – self-reported diet does not explain differences
- None completely ‘explain’ the higher mortality but some reliant on survey data
- Worse health behaviours require further explanation – ‘causes of the causes’

For example, see:

Gray L. Is the "Glasgow Effect" of cigarette smoking explained by socio-economic status?: a multilevel analysis. *BMC Public Health* 2009;9(245):(doi:10.1186/1471-2458-9-245).

Bloor M, Gannon M, Hay G, Jackson G, Leyland A. Contribution of problem drug users' deaths to excess mortality in Scotland: secondary analysis of cohort study. *BMJ* 2008;337:a478.

Mitchell R, Fowkes G, Blane D, Bartley M. High rates of ischaemic heart disease in Scotland are not explained by conventional risk factors. *Journal of Epidemiology & Community Health* 2005;59:565-7.

Gray L, Leyland A. A multilevel analysis of diet and socio-economic status in Scotland: investigating the 'Glasgow effect'. *Public Health Nutrition* 2008;12(9):1351-8.

# 11. Deindustrialisation

- Profound deindustrialisation was a cause
- Scotland (& Glasgow/West of Scotland) has higher mortality than comparable deindustrialised areas across northern Europe, despite lower poverty levels and lower unemployment
- But West of Scotland did lose greatest number of industrial jobs as a proportion of total employment
- Temporal and geographical relationship between deindustrialisation and mortality

Source:

Walsh D, Taulbut M, Hanlon P. The aftershock of deindustrialization—trends in mortality in Scotland and other parts of post-industrial Europe. *The European Journal of Public Health* 2010;20(1):58-64 (doi:10.1093/eurpub/ckp063).

## 16. Political attack

- “The passage of 30 years does not alter the fact that a great many people were hurt, and hurt very badly, because of Margaret Thatcher. ... she willed an economic catastrophe. A large part of a generation never recovered. Some sickened; some died too soon. It's true”. (Ian Bell, Herald)
- “The deep fried Mars Bars and Buckfast wine are a symptom, not the cause. The communities that gave meaning to the lives of hundreds of thousands of working-class Scots disintegrated” (Iain MacWhirter, 2009).
- “...a war without bullets...” (Cathy McCormack)

## 16. Political attack

- Was the UK exposed to a form of neoliberalism not seen elsewhere; and was Scotland more vulnerable to it, targeted or have a particular reaction?
- Deindustrialisation managed and mitigated in other countries
- Parallels with transitions in Eastern Europe and USA
- Accommodation in Scotland not seen in England
- Linked to alienation, disempowerment and democratic deficit
- Timing and plausibility rate highly

### Sources:

Collins C, McCartney G. Is a 'political attack' an explanation for the 'Scottish Effect' in health outcomes? *International Journal of Health Services* 2011; 41(3): 501-23.

Stuckler D, King L, McKee M. Mass privatisation and the post-communist mortality crisis: a cross-national analysis. *Lancet* 2009;373:399-407.

Boyle M, McWilliams C, Rice G. The spatialities of actually existing neoliberalism in Glasgow, 1977 to present. *Geografiska Annaler; series B, Human Geography* 2008;90:313-25.

Phillips J. *The industrial politics of devolution: Scotland in the 1960s and 1970s*. Manchester: Manchester University Press; 2008.

# 17. Climate

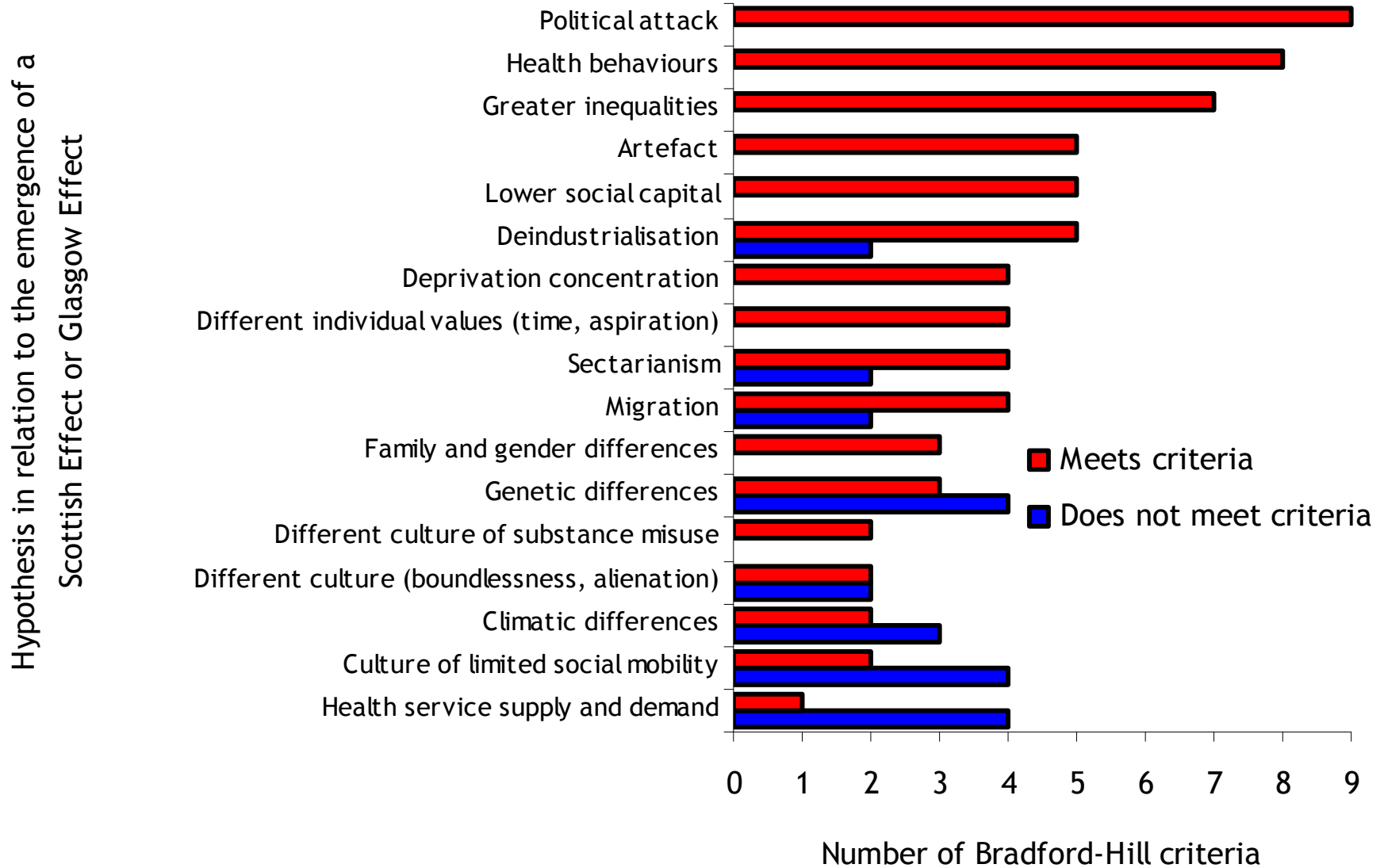
- Sunlight and a deficit in vitamin D
- Vitamin D gradient in blood samples between Scotland and the rest of the UK
- No coherence with the cause-specific mortalities since 1980 nor clear evidence of temporal changes
- Could dietary change or housing explain trends?
- Potential for other mechanisms (e.g. Seasonal Affective Disorder)?

See, for example:

Wilkinson P, Pattenden S, Armstrong B, et al. Vulnerability to winter mortality in elderly people in Britain: population based study. *BMJ* 2004;(doi:10.1136/bmj.38167.589907.55).

Hypponen E, Power C. Hypovitaminosis D in British adults at age 45y: nationwide cohort study of dietary and lifestyle predictors. *American Journal of Clinical Nutrition* 2007;85:860-8.

## Number of Bradford-Hill criteria met by each hypothesis for the later divergence and Scottish/Glasgow Effect



# Explaining the Scottish health patterns:

- No single 'cause' is likely to explain the mortality phenomena
- Alcohol, diet, drugs, tobacco etc. are all necessary explanations, but are not sufficient
- Politics of the 1980s linked to linked to ensuing alienation, disempowerment and democratic deficit are likely to be important in explaining the recent Scottish trends

## Sources:

McCartney G, Collins C, Walsh D, Batty GC. Accounting for the Scottish Mortality Excess: towards a synthesis. Glasgow, Glasgow Centre for Population Health, 2010.

Collins C, McCartney G. Is a 'political attack' an explanation for the 'Scottish Effect' in health outcomes? . *International Journal of Health Services* (in press).

Stuckler D, King L, McKee M. Mass privatisation and the post-communist mortality crisis: a cross-national analysis. *Lancet* 2009;373:399-407.

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Phillips J. The industrial politics of devolution: Scotland in the 1960s and 1970s. Manchester: Manchester University Press; 2008.



# Conclusions

- ‘Sustainable economic growth’ is a key aim, but we are not close to this
- Scotland has benefited and suffered from different models of growth over time
- Health and fairness need to be built into the economic model, they do not automatically occur
- Urgent need to debate how to create a healthier economics in Scotland

Thank you for listening  
[gmccartney@nhs.net](mailto:gmccartney@nhs.net)