‘Excess’ mortality in Scotland and Glasgow: context & evidence

David Walsh

Glasgow Centre for Population Health

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Topics

- Part one (context):
  - What's the focus: Scotland or Glasgow?
  - Scotland's/Glasgow's health – a (very) quick overview
  - Determinants of health and health inequalities
  - A socio-economic history of Glasgow over 300 years
- Part two (evidence):
  - 'Excess' mortality in Scotland and Glasgow
  - Suggested explanations
- Why I hate the term 'Glasgow Effect'
- An unfeasibly large number of graphs

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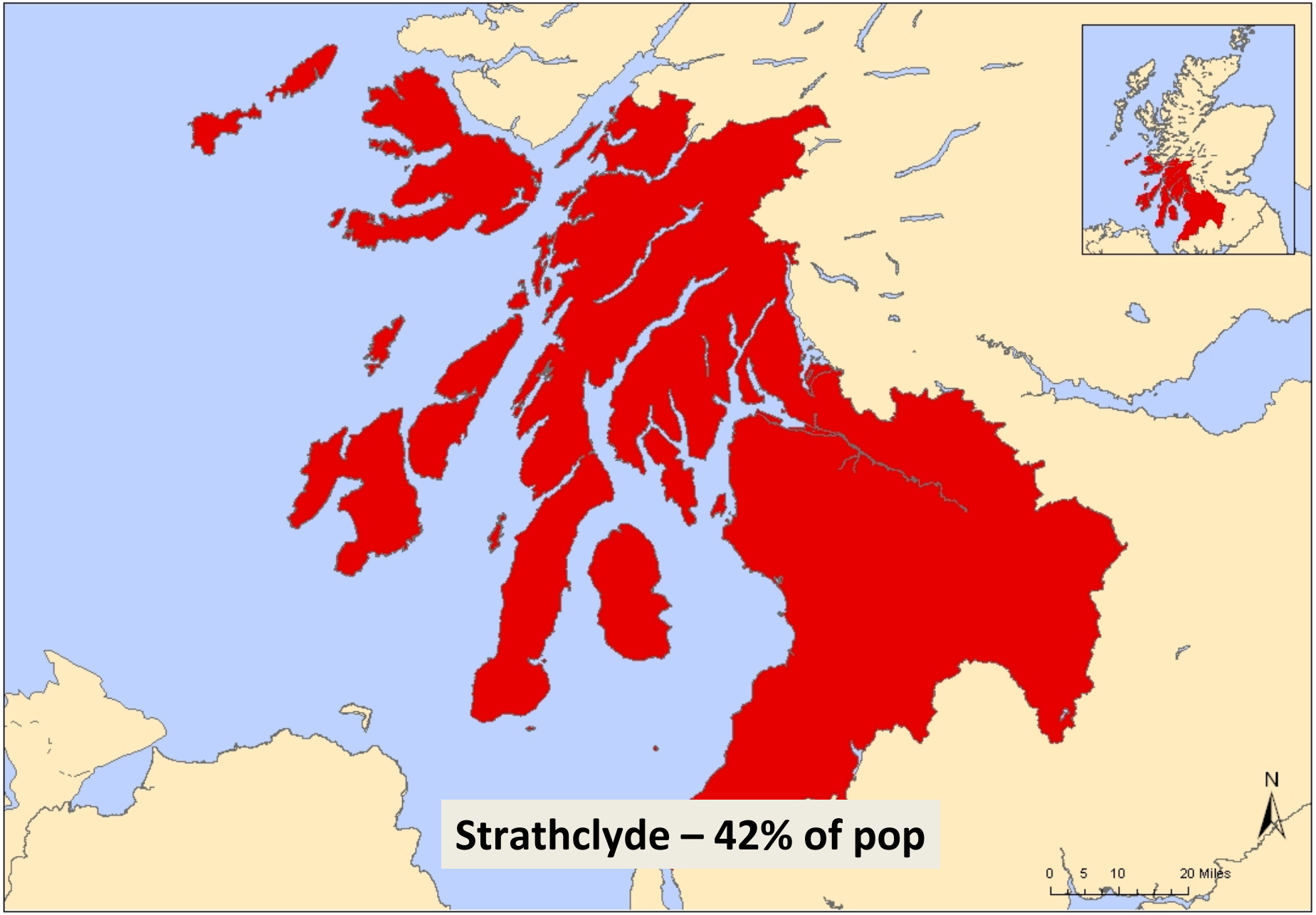
What's the focus: Scotland or Glasgow?

- Both…
- Scotland has a very small, and geographically concentrated, population
- What happens in and around Glasgow impacts on national figures
- Shown in analyses at different geographical levels…



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What's the focus: Scotland or Glasgow?

- In health terms same issues apply, but in different concentrations
- True of:
  - Overall health status relative to other populations
  - Change over time
  - 'Excess' mortality

Scotland's & Glasgow's health

BEST DAILY VALUE 50p

THE SCOTSMAN

WEDNESDAY 11 MAY 2005 — SCOTLAND'S NATIONAL NEWSPAPER

IKEA

WHICH STORES KEEP THEIR CUSTOMERS SATISFIED? Page 21

Free picture souvenir
THE ROAD TO VE DAY
Part three inside today

Scotland: still the sick man of Europe

■ Medication which is prescribed for thousands of Scots sufferers dramatically increases the risk of dying from a heart attack *Page 2*

Young Tory star cast into the lion's den

George Osborne, at 33 the rising star of the Conservative Party, was made new shadow chancellor by Michael Howard, with the job of taking on Gordon Brown. *Page 2*

Executive under fire over efficiency drive

Ex-minister Wendy Alexander accused the Scottish Executive of failing to match Whitehall's efficiency drive, depriving the country of £400m savings. *Page 6*

Got married. V good day

Still is best known as the queen of singletons, but Bridget Jones actress Renee Zellweger got married yesterday, to country music star Kenny Chesney on the Caribbean island of St John in the US Virgin Islands. *Page 5*

Weather 41, Television and Radio 38-40, Announcements 46, Crosswords 40 and 41, Letters 26

5 June 2014 Last updated at 01:21

Why is Glasgow the UK's sickest city?

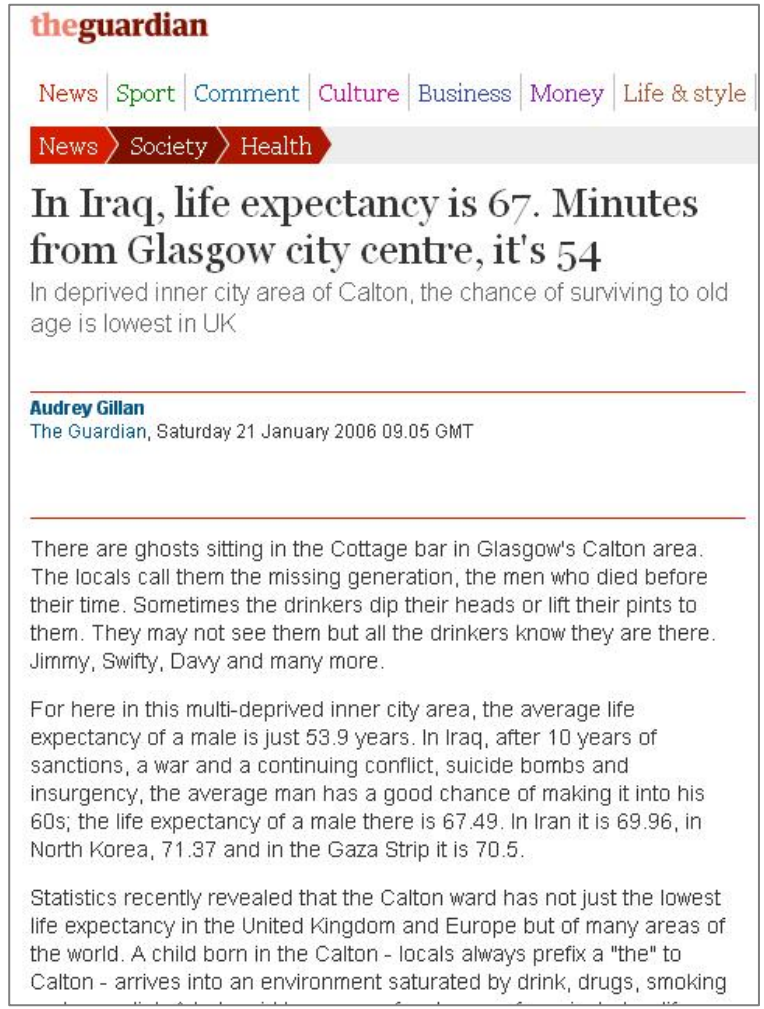
By Lucy Ash
BBC News

Babies born in Glasgow are expected to live the shortest lives of any in Britain. One in four Glaswegian men won't reach their 65th birthday. What is behind the "Glasgow Effect" and can it be prevented?

In today's Magazine

The joyful dearth of

Scotland's & Glasgow's health



theguardian

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News › Society › Health

In Iraq, life expectancy is 67. Minutes from Glasgow city centre, it's 54

In deprived inner city area of Calton, the chance of surviving to old age is lowest in UK

Audrey Gillan
The Guardian, Saturday 21 January 2006 09.05 GMT

There are ghosts sitting in the Cottage bar in Glasgow's Calton area. The locals call them the missing generation, the men who died before their time. Sometimes the drinkers dip their heads or lift their pints to them. They may not see them but all the drinkers know they are there. Jimmy, Swifty, Davy and many more.

For here in this multi-deprived inner city area, the average life expectancy of a male is just 53.9 years. In Iraq, after 10 years of sanctions, a war and a continuing conflict, suicide bombs and insurgency, the average man has a good chance of making it into his 60s; the life expectancy of a male there is 67.49. In Iran it is 69.96, in North Korea, 71.37 and in the Gaza Strip it is 70.5.

Statistics recently revealed that the Calton ward has not just the lowest life expectancy in the United Kingdom and Europe but of many areas of the world. A child born in the Calton - locals always prefix a "the" to Calton - arrives into an environment saturated by drink, drugs, smoking

MALE life expectancy at birth, c. 2009

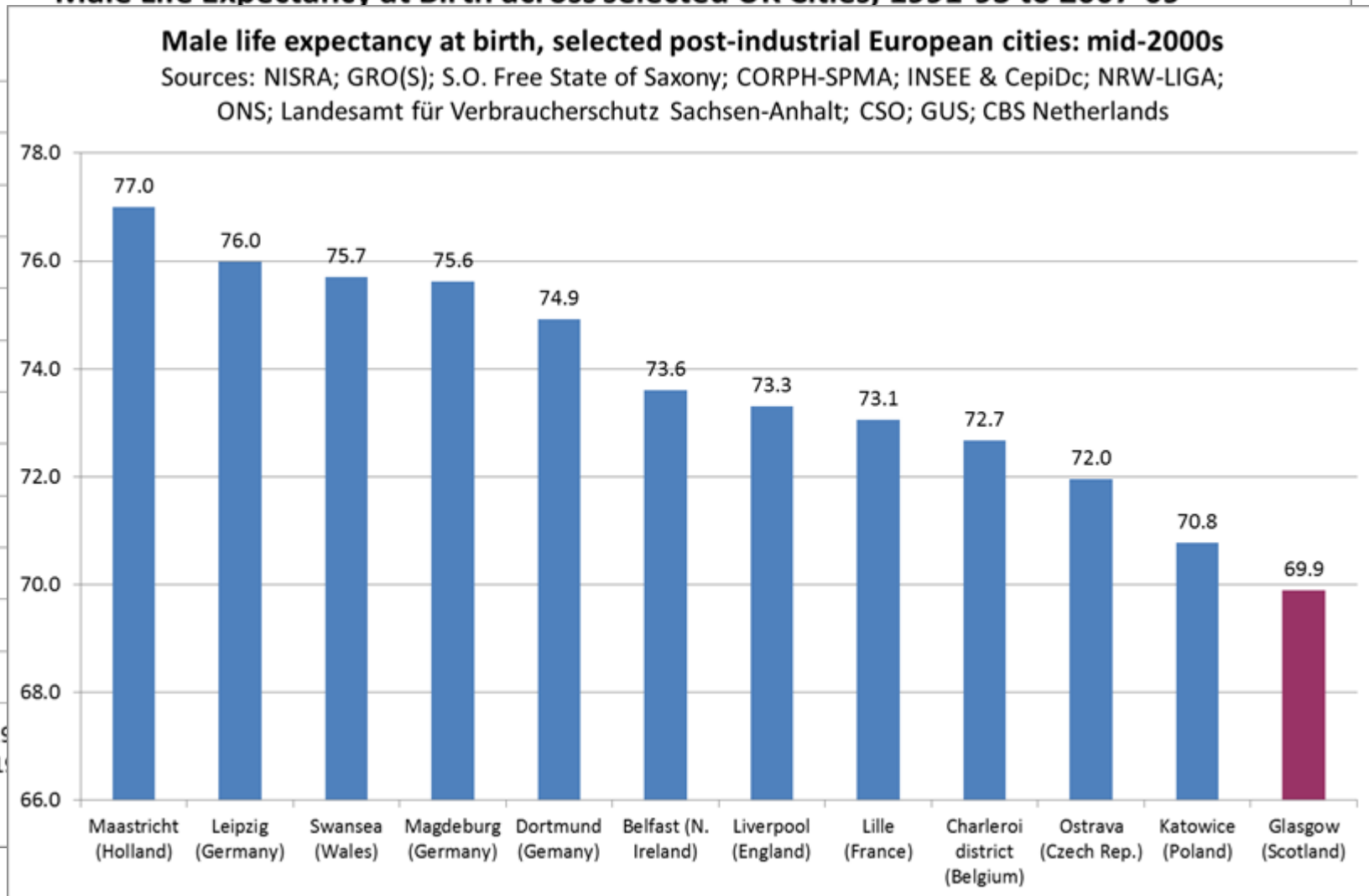
FEMALE life expectancy at birth, c. 2009

Male life expectancy: Scotland & other W. European Countries, 1851-2005

Male life expectancy: Scotland vs. England & Wales, 1950-2006

Male life expectancy at birth by Scottish local authority area, 2007-09

Male Life Expectancy at Birth across selected UK Cities, 1991-93 to 2007-09



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Health inequalities in Scotland and Glasgow

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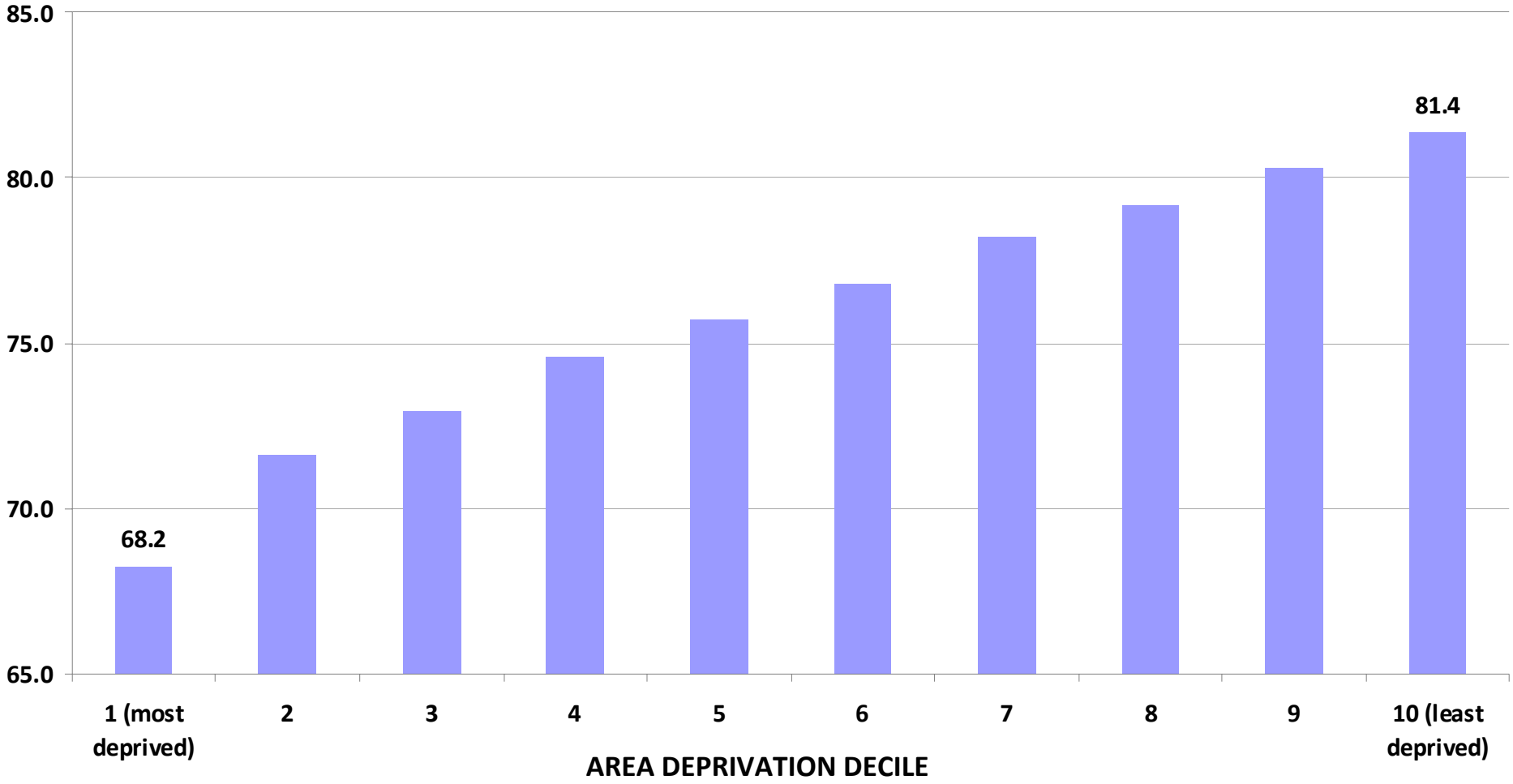
Health (mortality) inequalities in Scotland

Male life expectancy at birth by SIMD deprivation decile, Scotland 2008-2010

Source: National Records of Scotland



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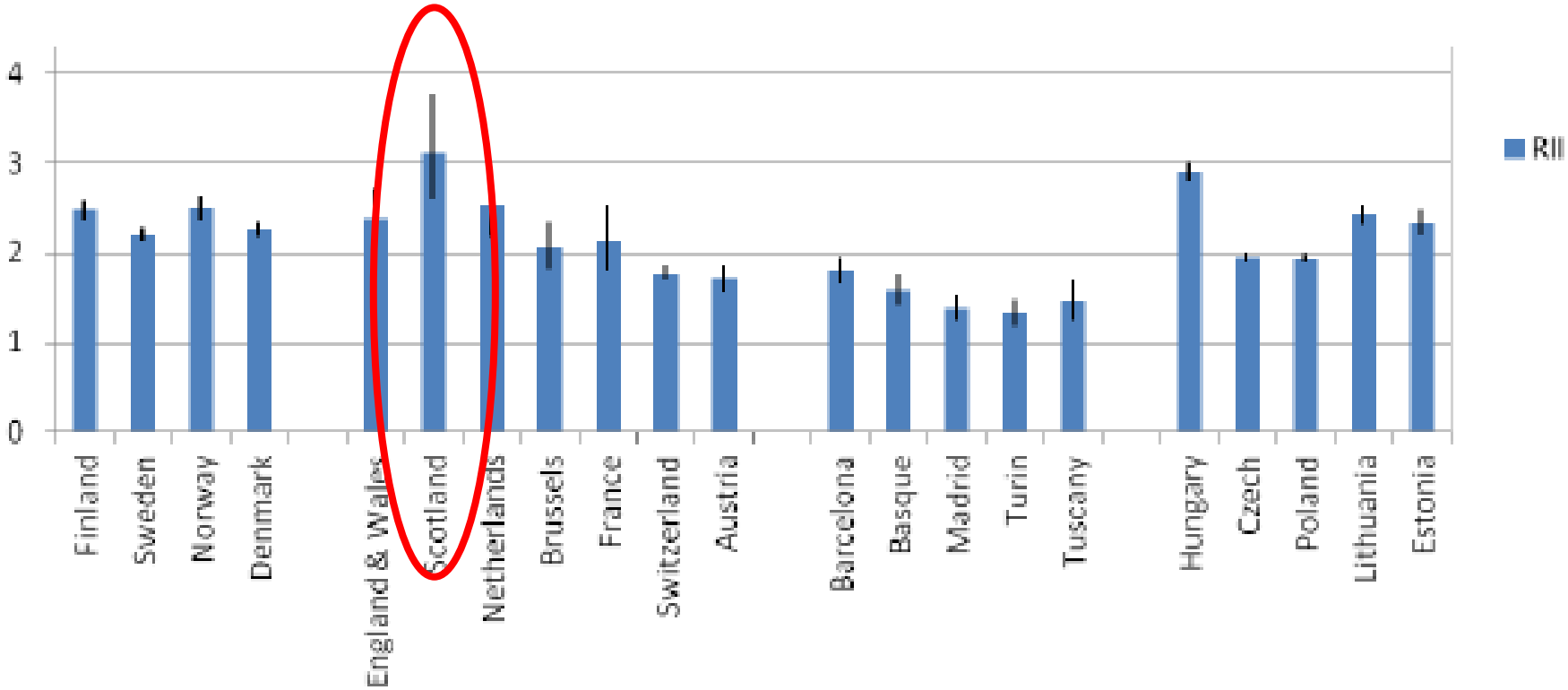
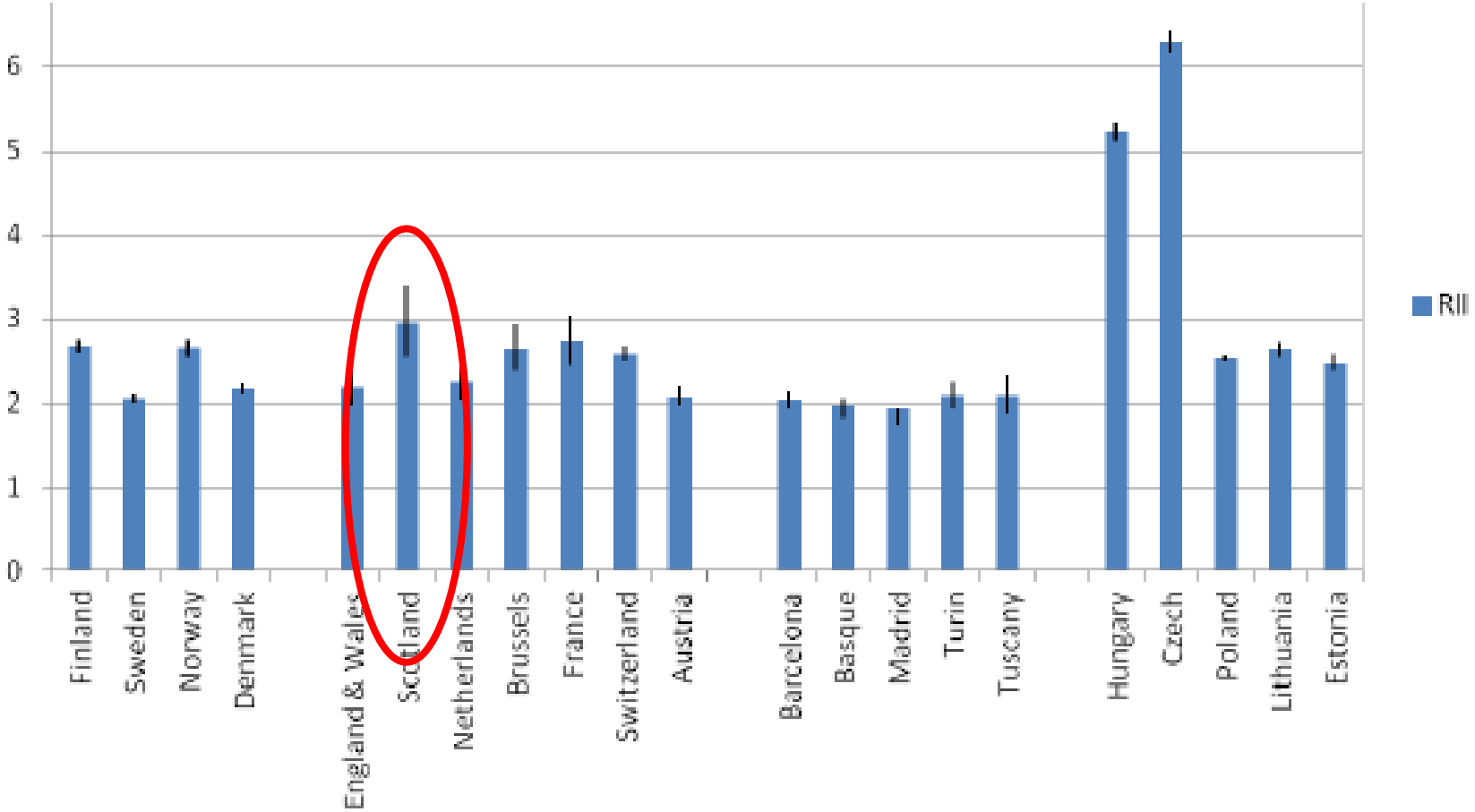
Health inequalities in a European context

Education based Relative Index of Inequality (RII) for all-cause mortality, females 30-74 years, early to mid 2000s



Source: Eikemo T.A. & Mackenbach J.P. (Eds). EURO GBD SE: the potential for reduction of health inequalities in Europe. Final Report. University Medical Center Rotterdam, 2012

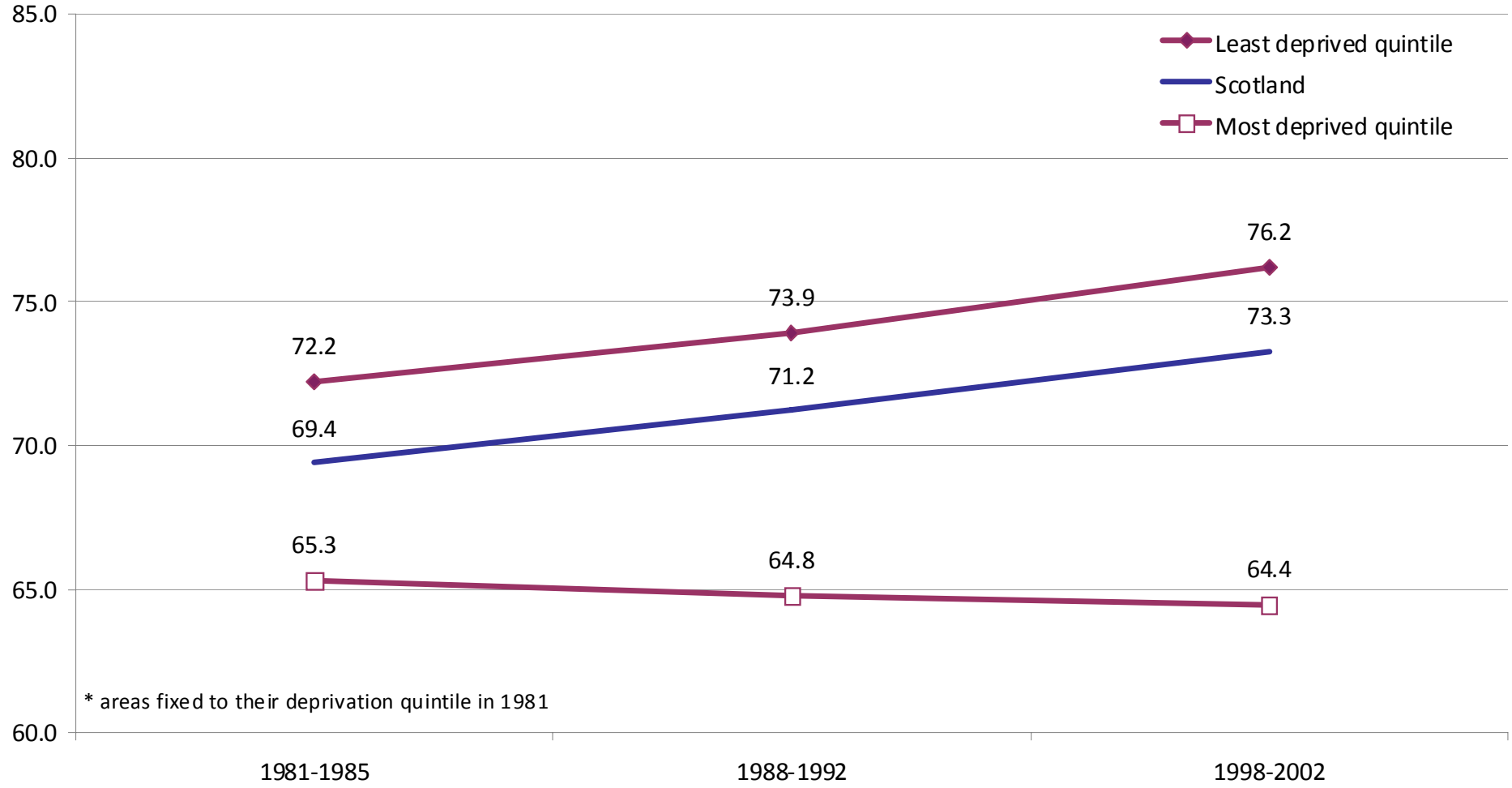
Education based Relative Index of Inequality (RII) for all-cause mortality, males 30-74 years, early to mid 2000s



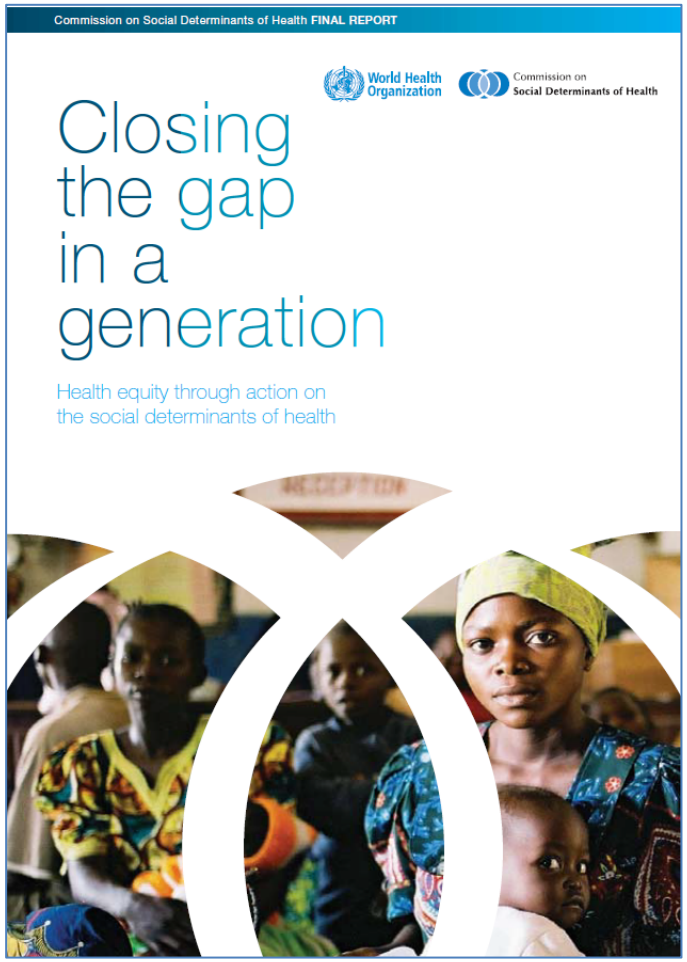
Source: Eikemo T.A. & Mackenbach J.P. (Eds). EURO GBD SE: the potential for reduction of health inequalities in Europe. Final Report. University Medical Center Rotterdam, 2012

Male life expectancy by area deprivation quintile (Greater Glasgow)

Estimates of male life expectancy, 1981/85 - 1998/2002
least and most deprived Carstairs quintiles in Greater Glasgow* compared to Scotland
Source: Hanlon, Walsh, Whyte 2006



World Health Organisation (WHO)

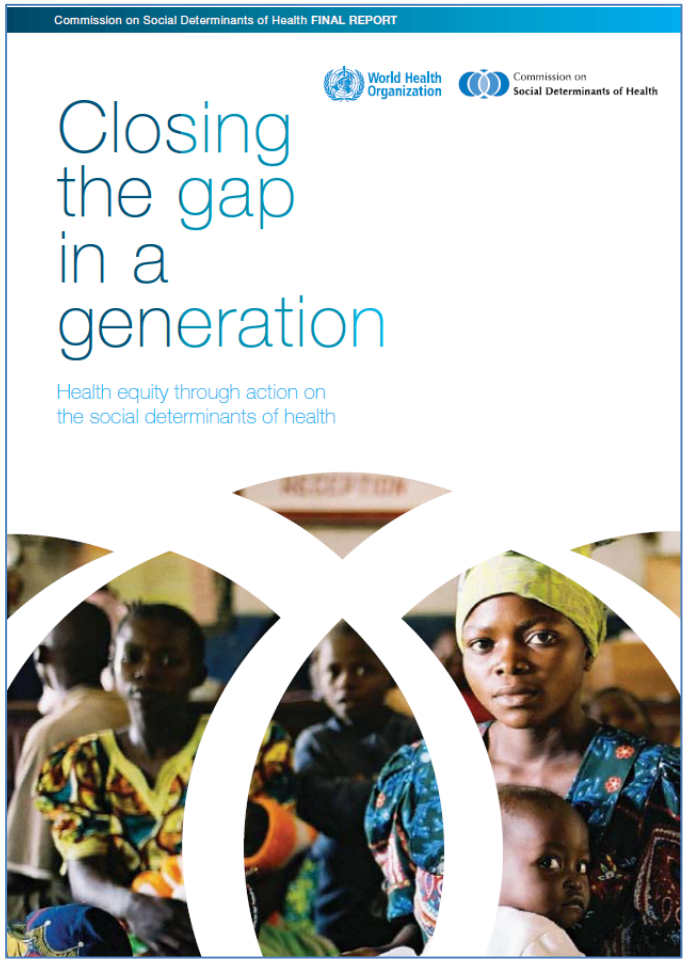


Male life expectancy, between- and within-country inequities, selected countries

Place	Life expectancy at birth
United Kingdom, Scotland, Glasgow (Calton)[b]	54
India[a]	62
United States, Washington DC (black)[c]	63
Philippines[a]	64
Lithuania[a]	65
Poland[a]	71
Mexico[a]	72
United States[a]	75
Cuba[a]	75
United Kingdom[a]	77
Japan[a]	79
Iceland[a]	79
United States, Montgomery County (white)	80
United Kingdom, Scotland, Glasgow (Lenzie N.)[b]	82

a) Country data: 2005 data from World Health Statistics (WHO, 2007c).
b) Pooled data 1998–2002 (Hanlon, Walsh & Whyte, 2006).
c) Pooled data from 1997–2001 (Murray et al., 2006).

World Health Organisation (WHO)



"It does not have to be this way and it is not right that it should be like this… Social injustice is killing people on a grand scale"

WHO's Commission on Social Determinants of Health, 2008.

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Scotland's & Glasgow's health

- Improving, but…
- Doing so more slowly then elsewhere
- Very wide health inequalities
- Highest mortality in Western Europe

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Understanding reasons for poor health

- Sophisticated understanding of what creates and destroys health in any population
- Developed over many years and in many settings
- Many models of health determinants have been developed

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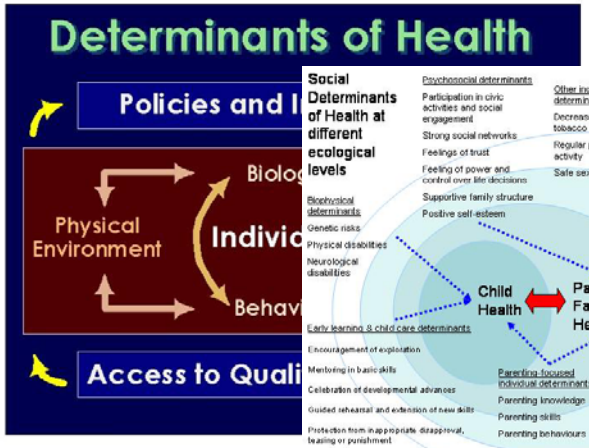
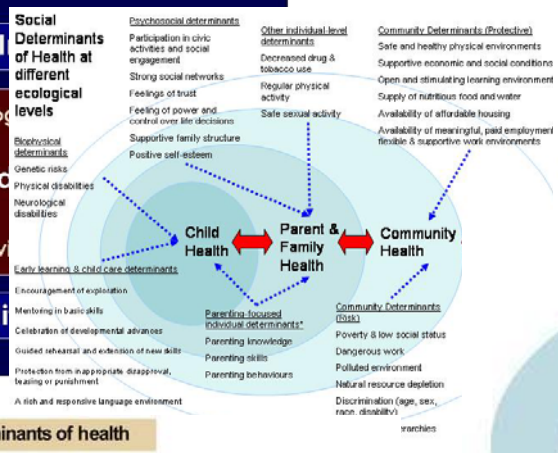
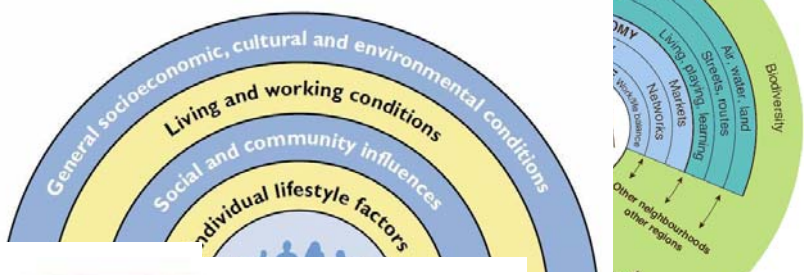
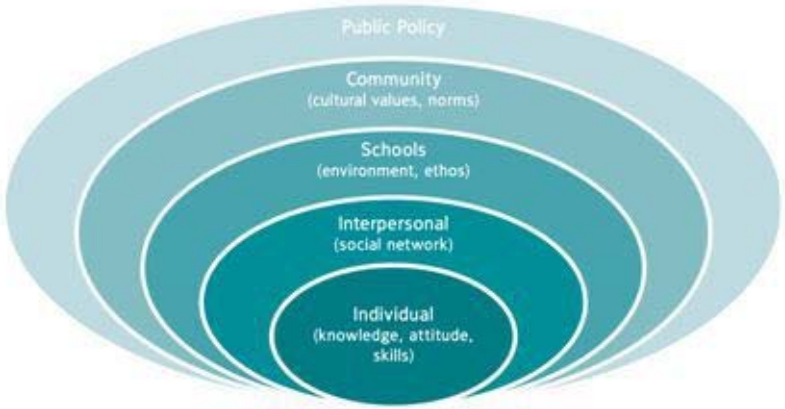
Models of health determinants

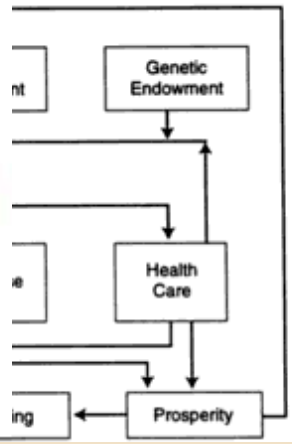


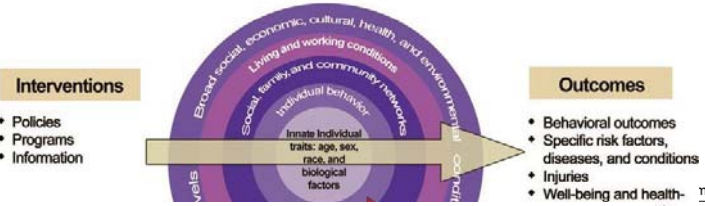


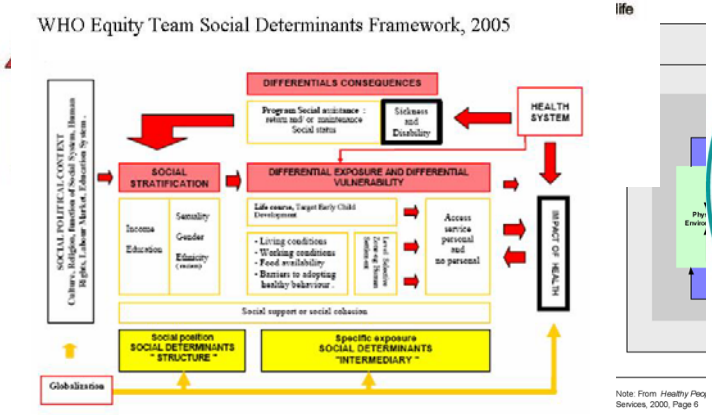
Determinants of health



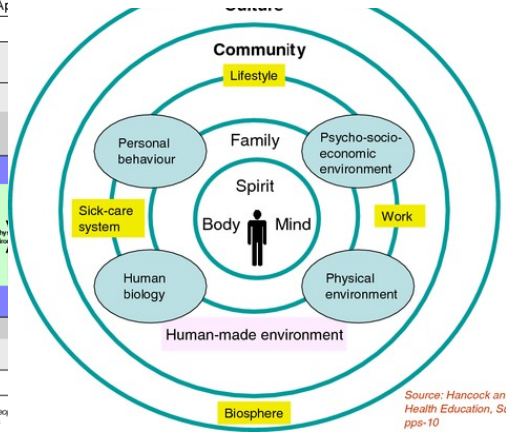




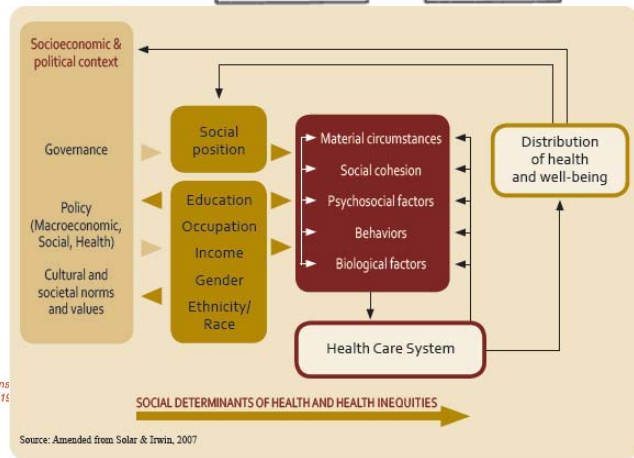




WHO Commission on Social Determinants of Health. (2005). *Towards a Conceptual Framework for Analysis and Action on the Social Determinants of Health.* Draft discussion paper for the Commission on Social Determinants of Health. WHO: Switzerland.

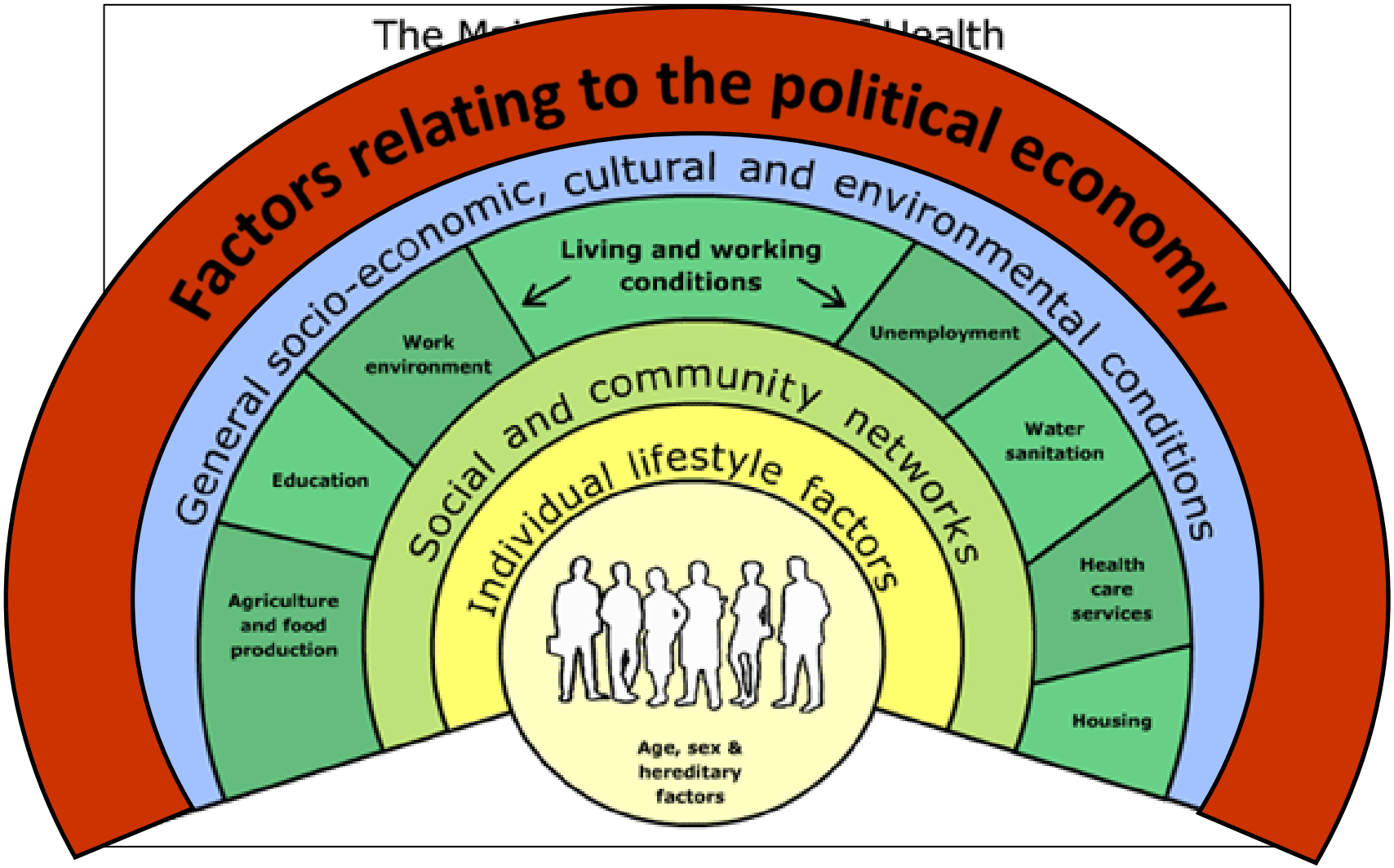


Source: Hancock and Perkins *Health Education*, Summer 19 pps-10



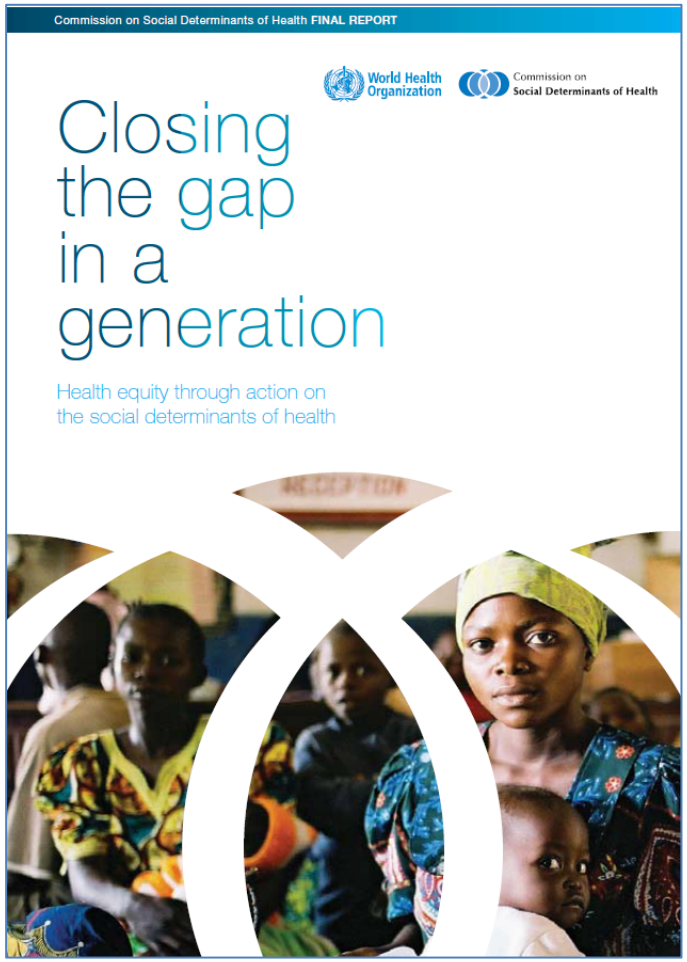
Source: Amended from Solar & Irwin, 2007

What determines health in a population



Source: Dahlgren G, Whitehead M. European strategies for tackling social inequities in health: levelling up, Part 2. Copenhagen: WHO Regional Office for Europe, 2007

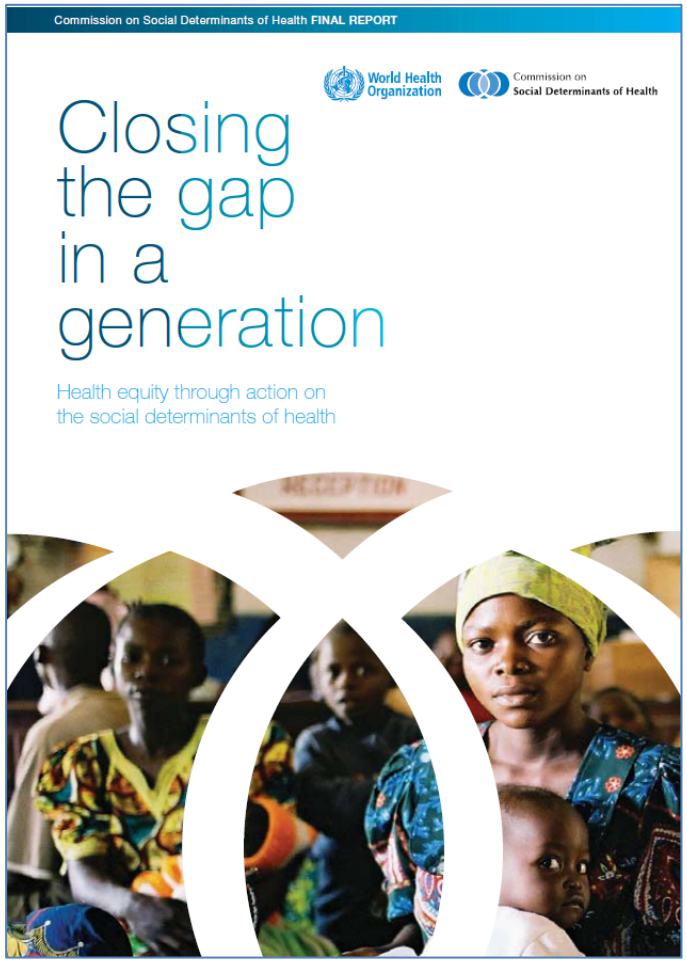
World Health Organisation (WHO)



"It does not have to be this way and it is not right that it should be like this… Social injustice is killing people on a grand scale"

WHO Commission on Social Determinants of Health, 2008.

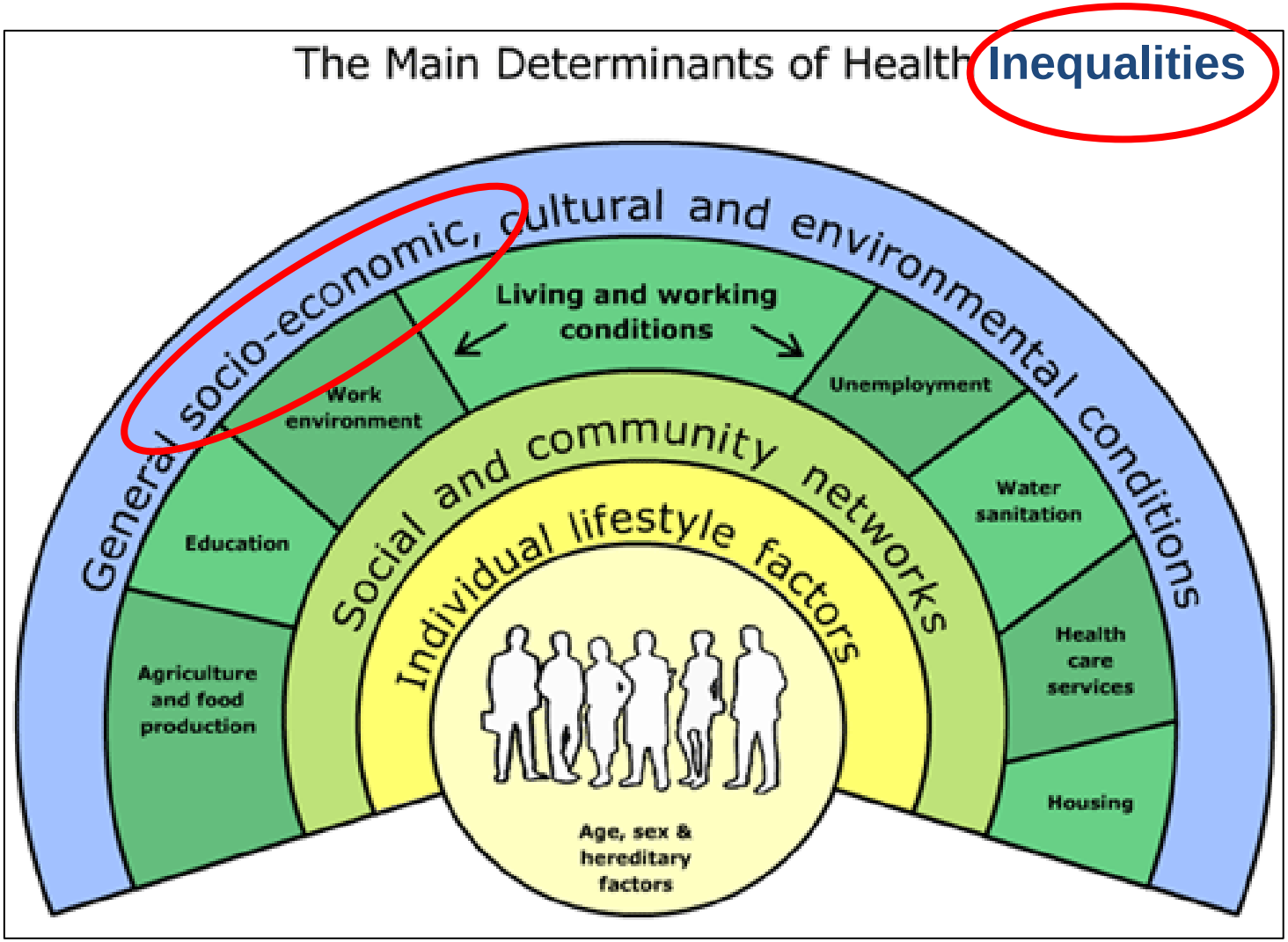
Political economy



"It is not inequalities that kill people, as the report states, it is those who are responsible for these inequalities that kill people"

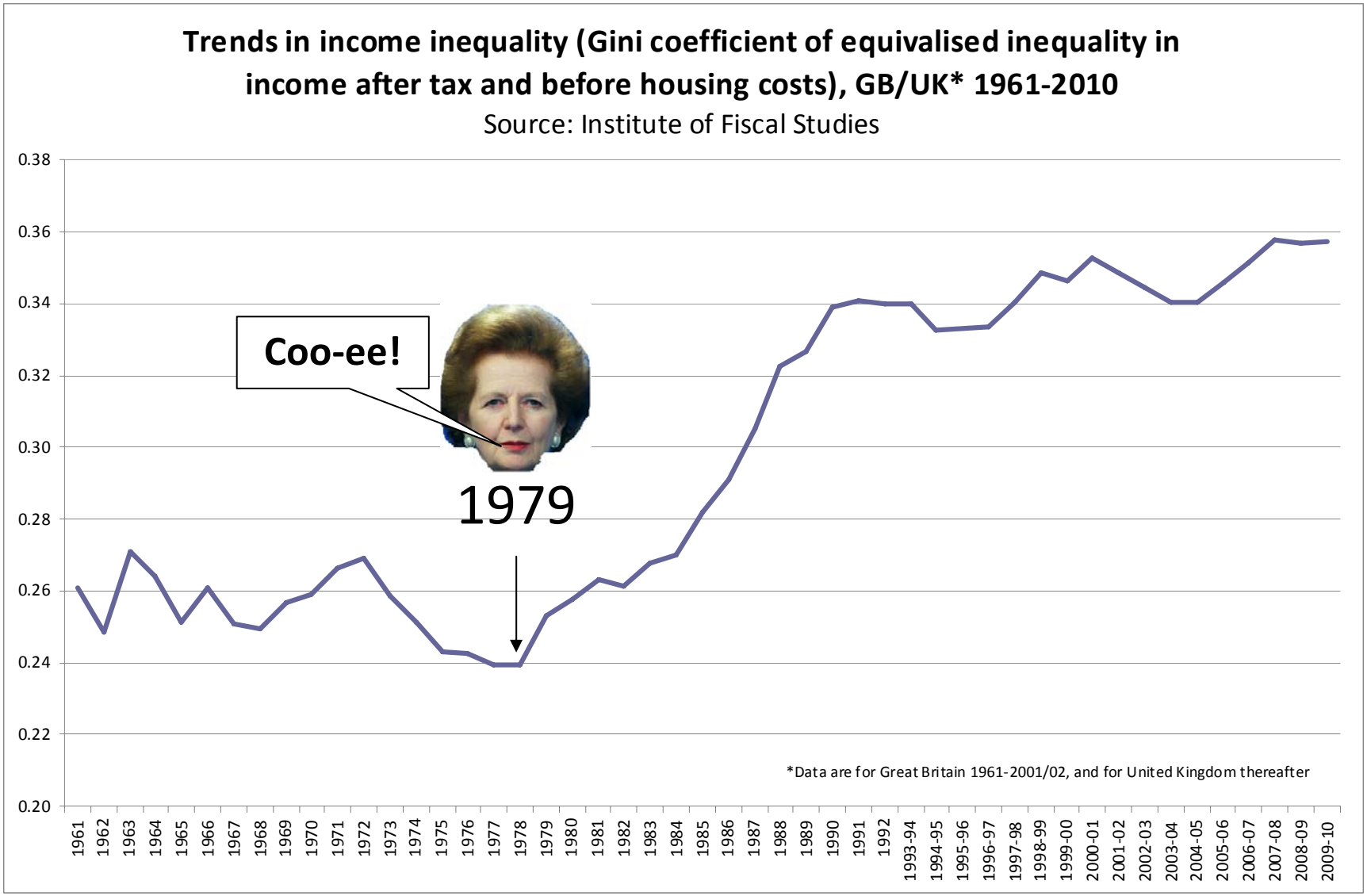
Navarro V. What we mean by social determinants of health. International Journal of Health Services 2009; 39 (3): 423–441

What determines health in a population



Source: Dahlgren G, Whitehead M. European strategies for tackling social inequities in health: levelling up, Part 2. Copenhagen: WHO Regional Office for Europe, 2007

Widening of socio-economic inequalities in the UK



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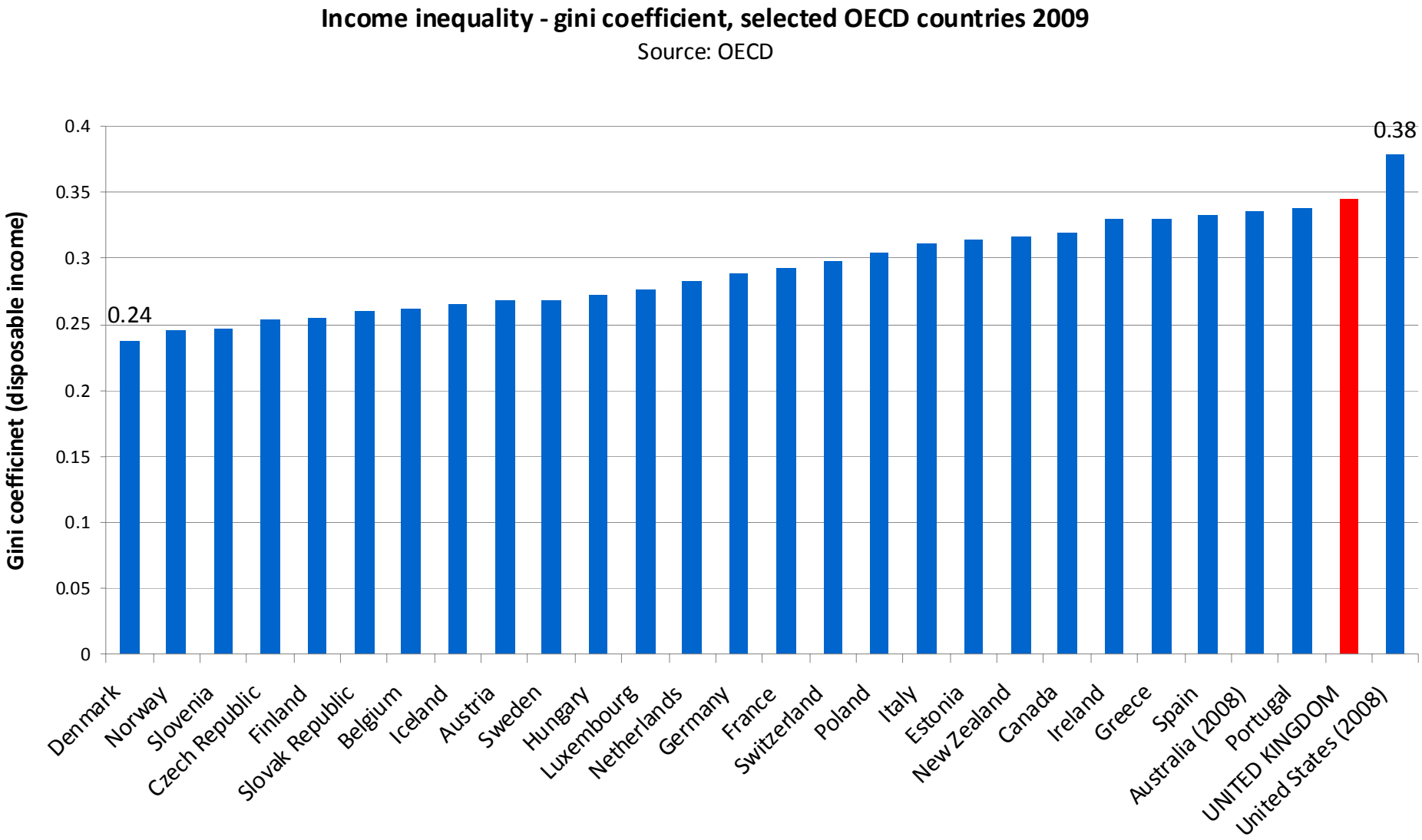
Income inequalities 2009, selected OECD countries

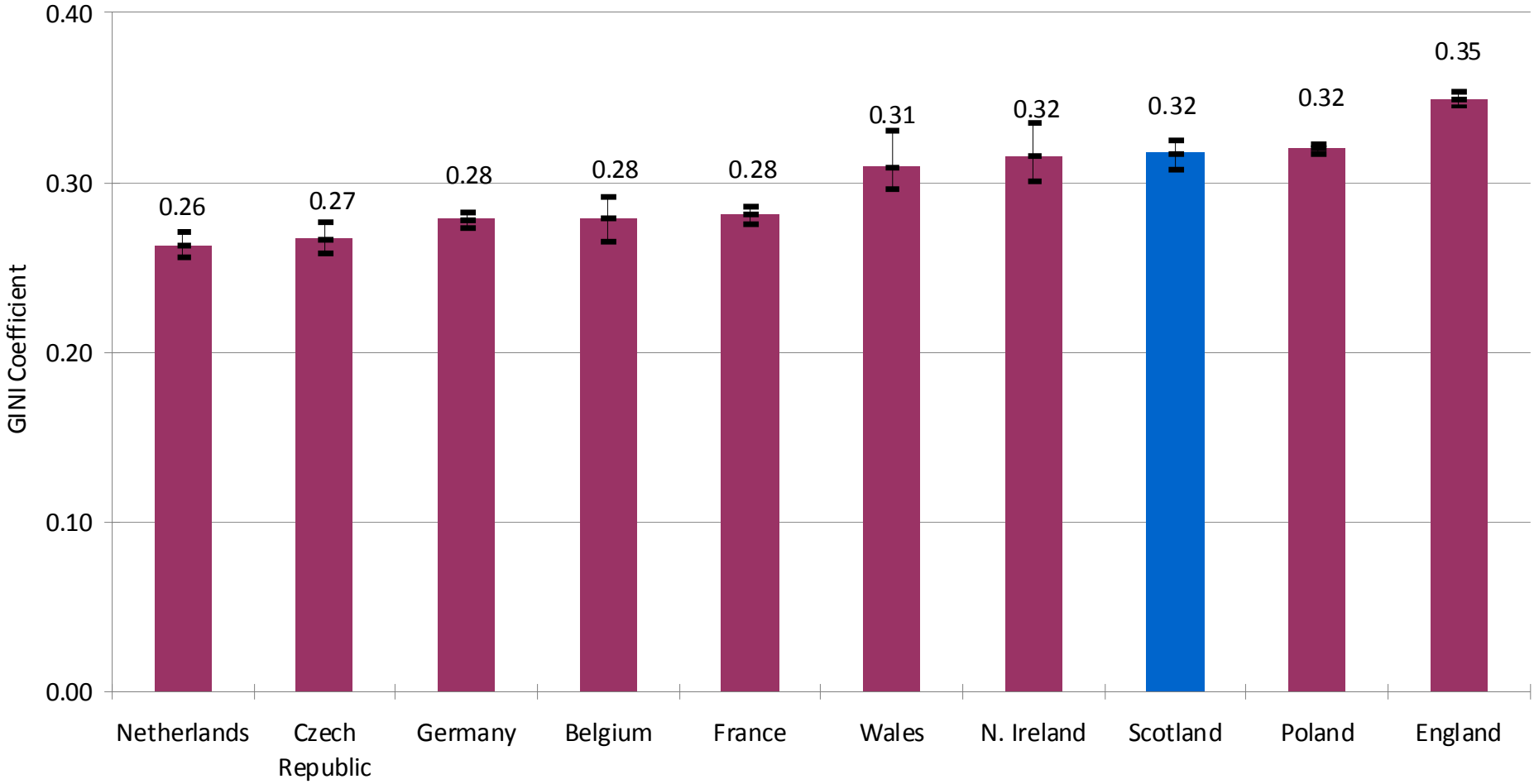


Income inequalities mid-2000s, Scotland and selected European countries

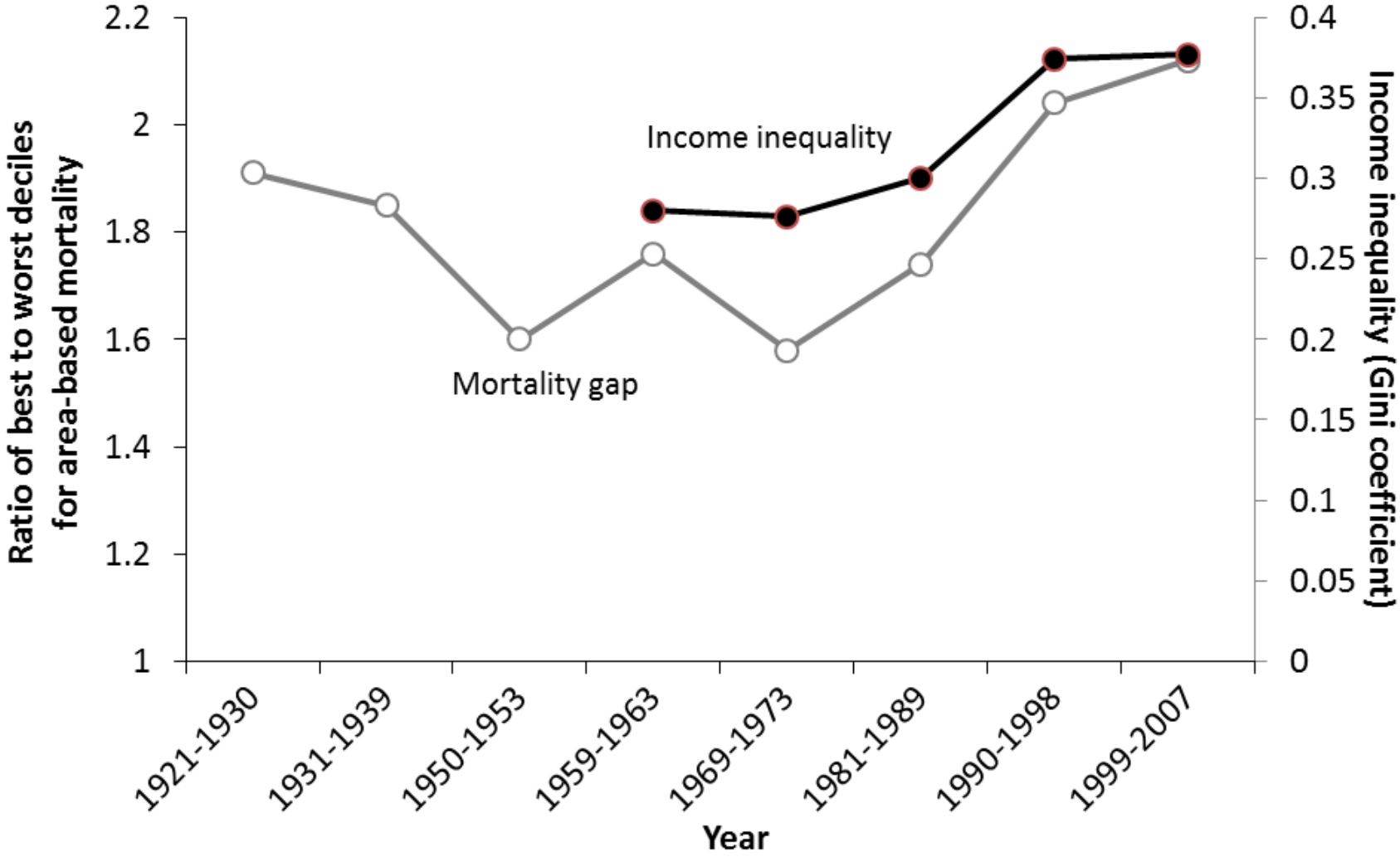
Income inequality in Scotland and Selected European countries: 2004*

Source: Luxemburg Income Study

* Except France (2005) and Belgium (2000)



Income inequalities and spatial (local authority) mortality inequalities, GB 1921-2007



Sources: Beeston C, McCartney G, Ford J et al 2014 (from original data from Thomas & Dorling 2010, IFS 2012)

Widening of socio-economic inequalities in the UK

- Income inequalities as a driver of health inequalities
- UK economic policies since 1979 have driven widening income inequalities…
- …accompanied by the 'spatial polarisation' of UK:
  - Large chunk of prosperous southern England
  - The rest: 'a series of poorly connected city cluster islands that appear to be slowly sinking demographically, socially and economically'*
- Current unprecedented scale of 'welfare reform' (cuts of £28 billion by 2016) likely to widen income inequalities further (and, therefore, health inequalities also)

*Source: Dorling D., and Thomas B., People and Places – a 2001 census atlas of the UK. The Policy Press, Bristol, 2004

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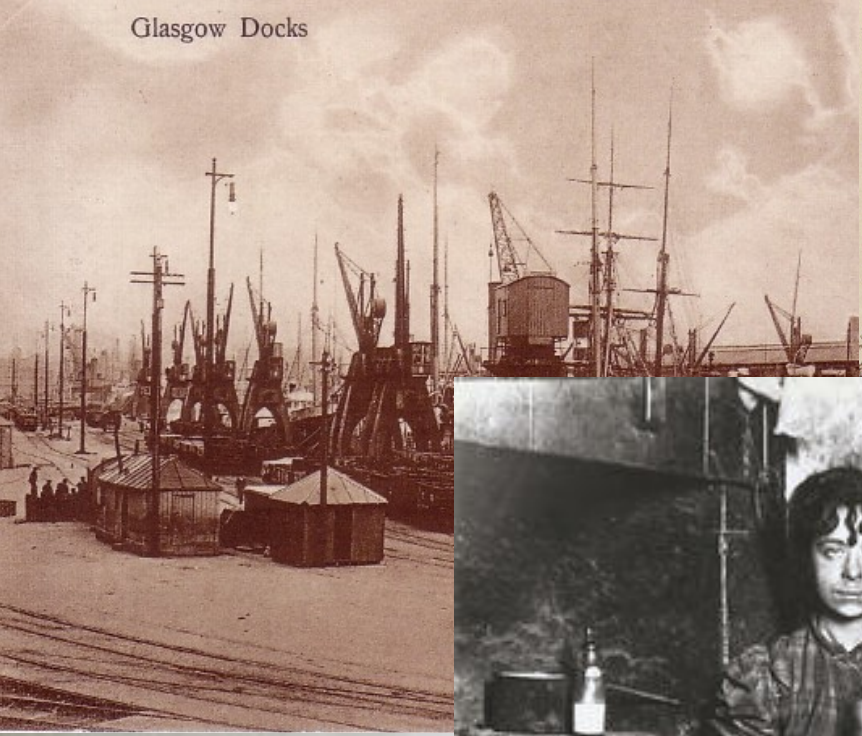
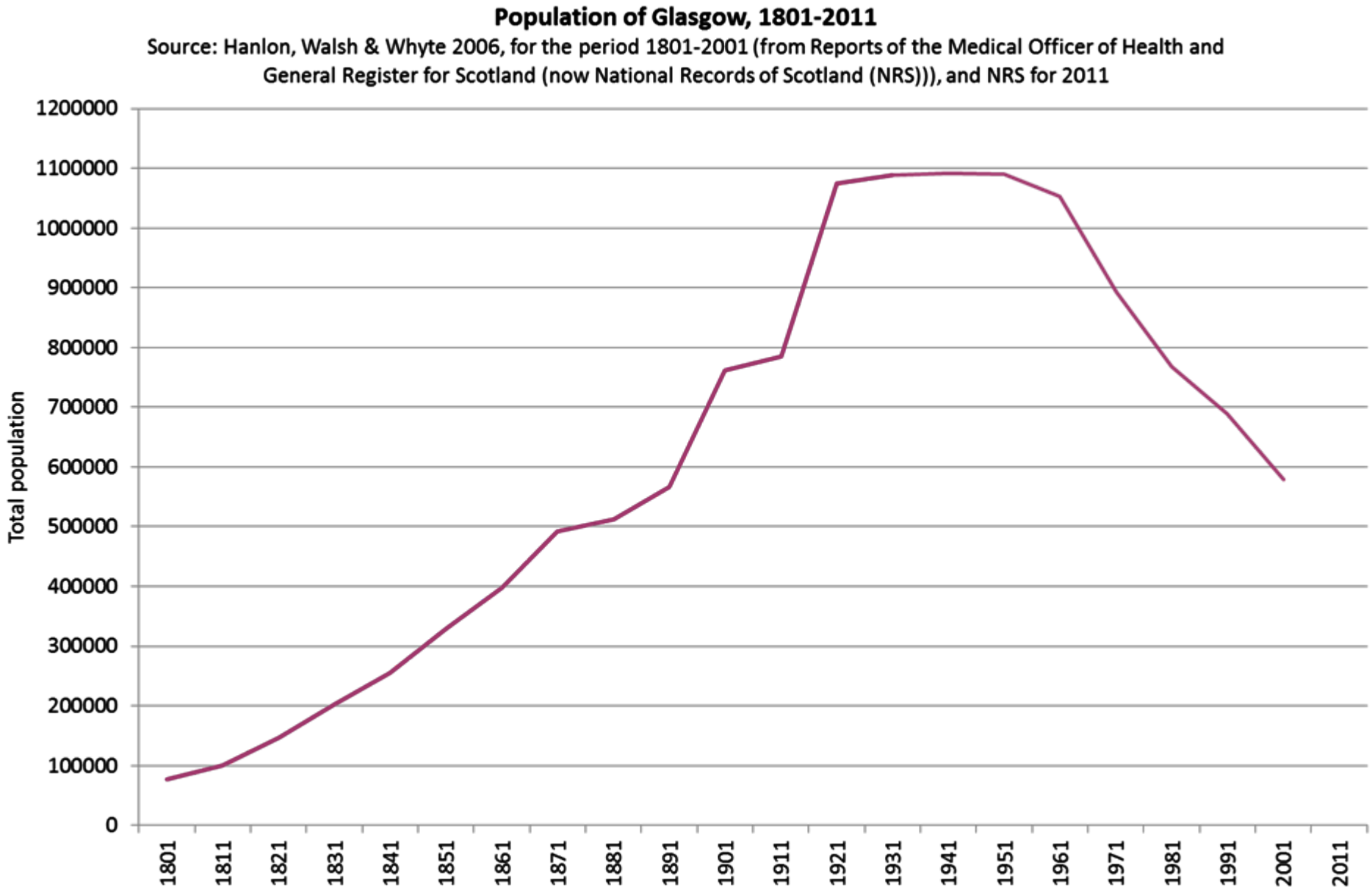
Where does Glasgow sit in this story?

Socio-economic history of Glasgow

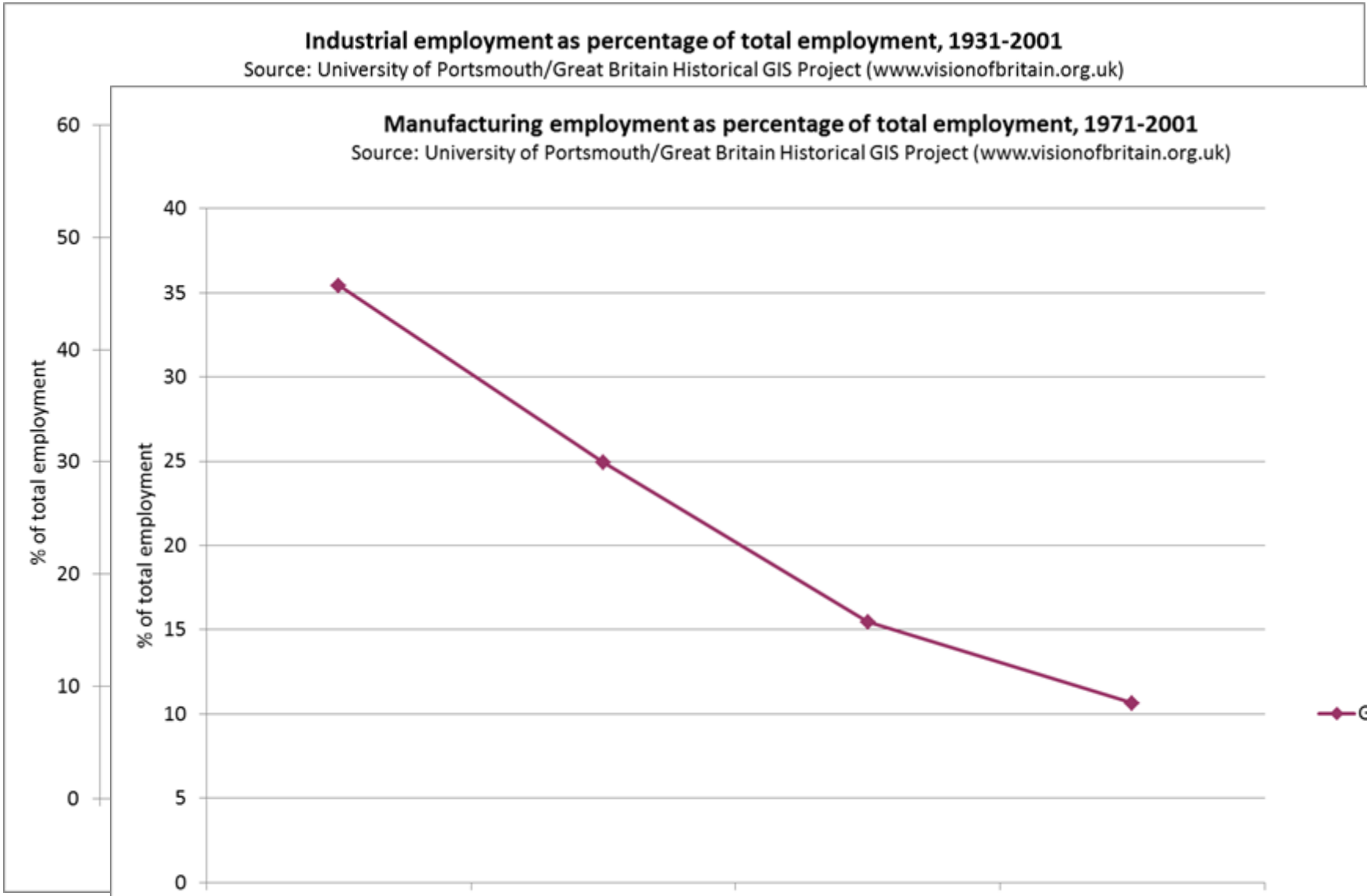
- Population as a proxy for economic 'health'
- Glasgow at start of 18th Century: 15,000 people…


Glasgow Docks

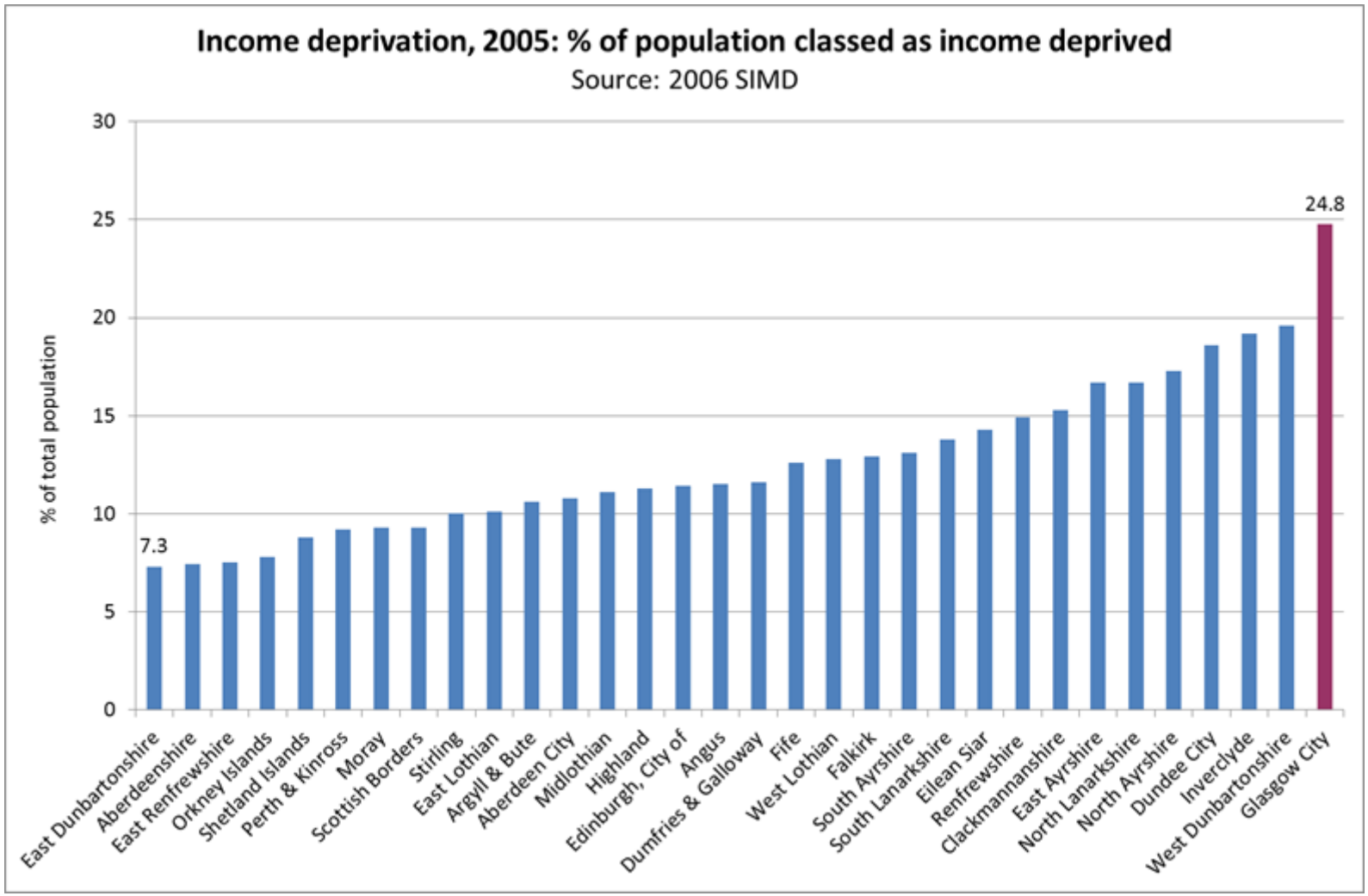
Socio-economic history of Glasgow: decline



Socio-economic history of Glasgow: decline



Poverty & deprivation as drivers of poor health



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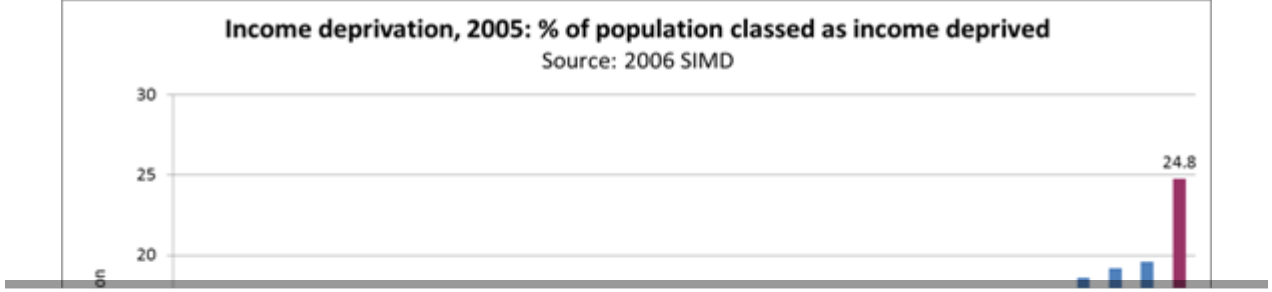
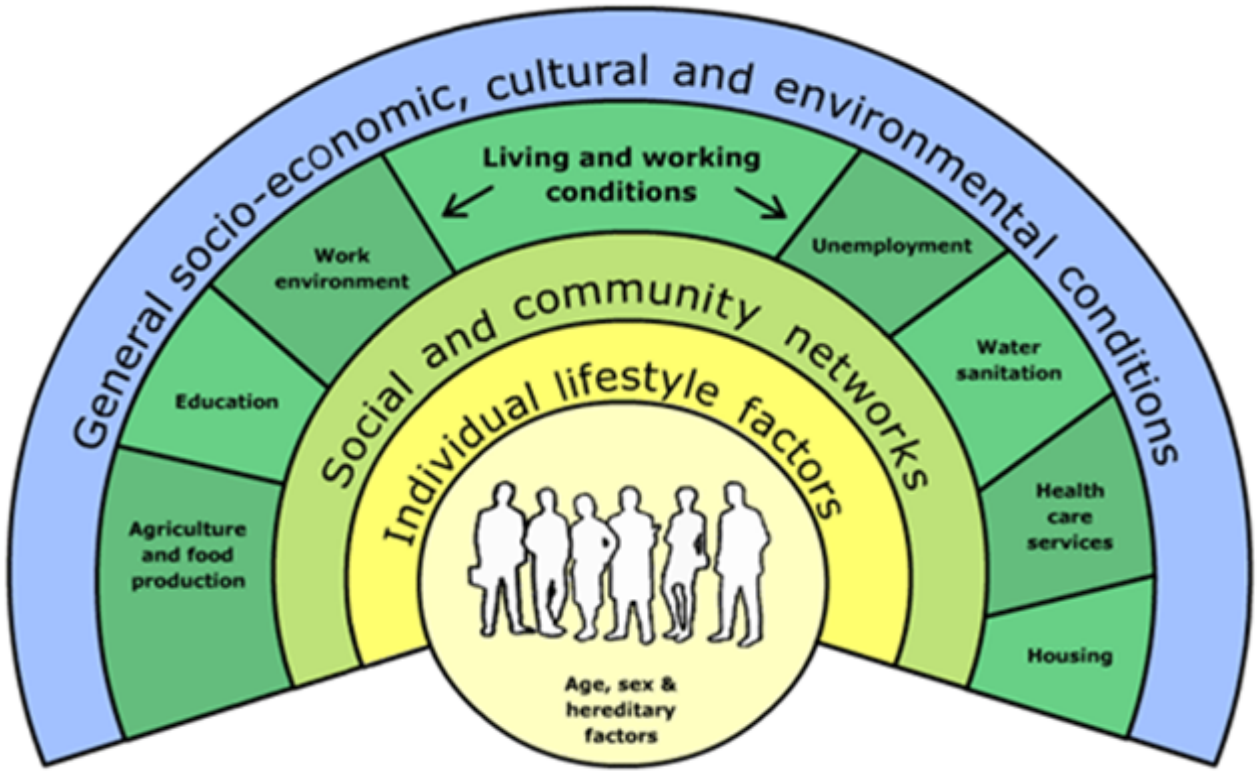
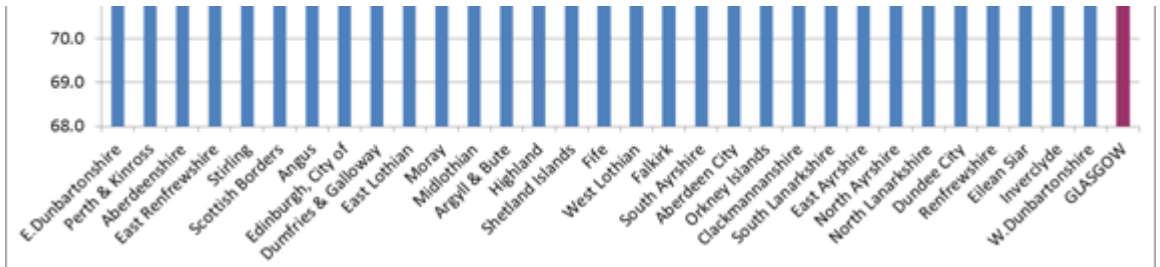


The Main Determinants of Health





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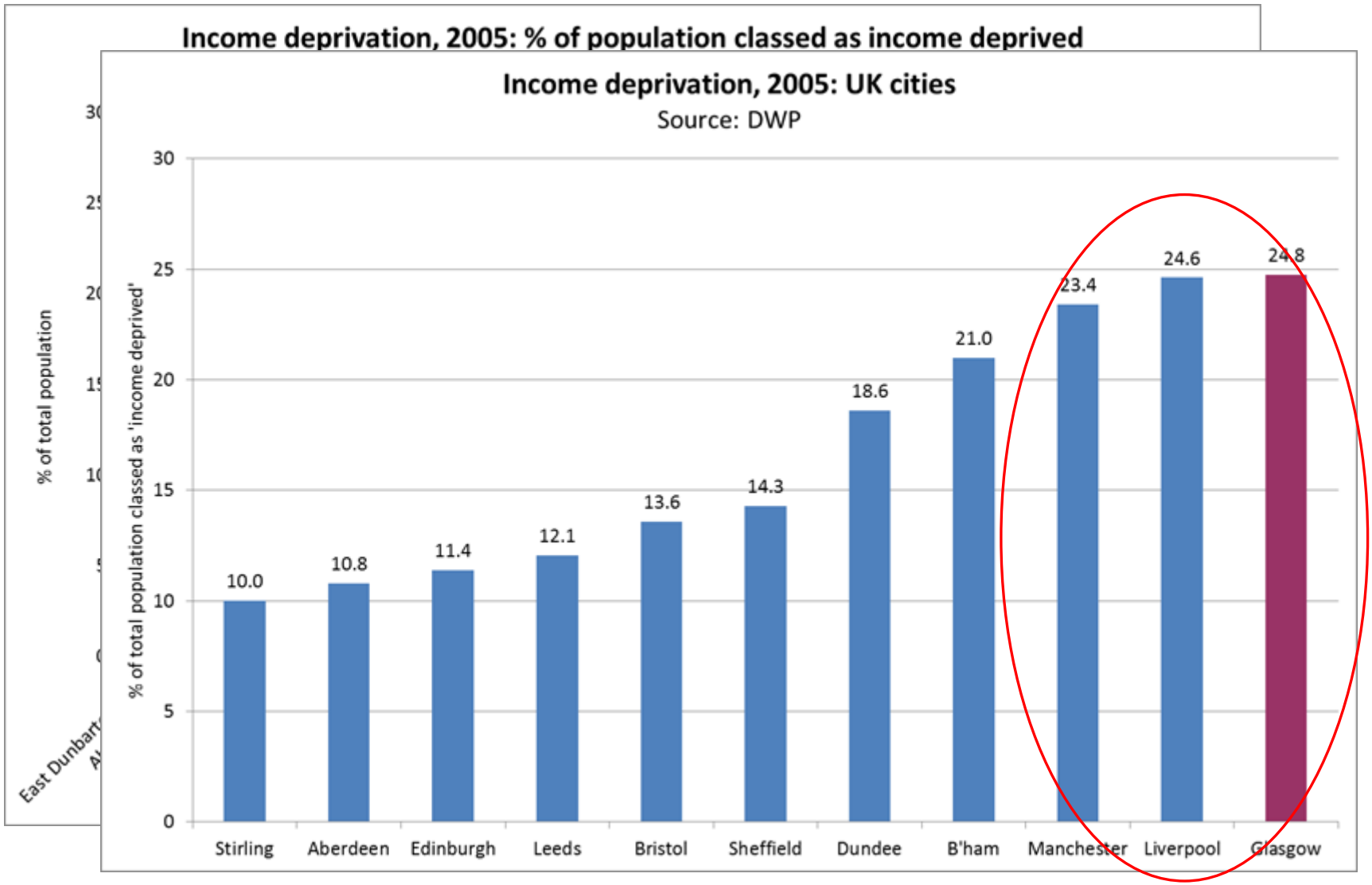
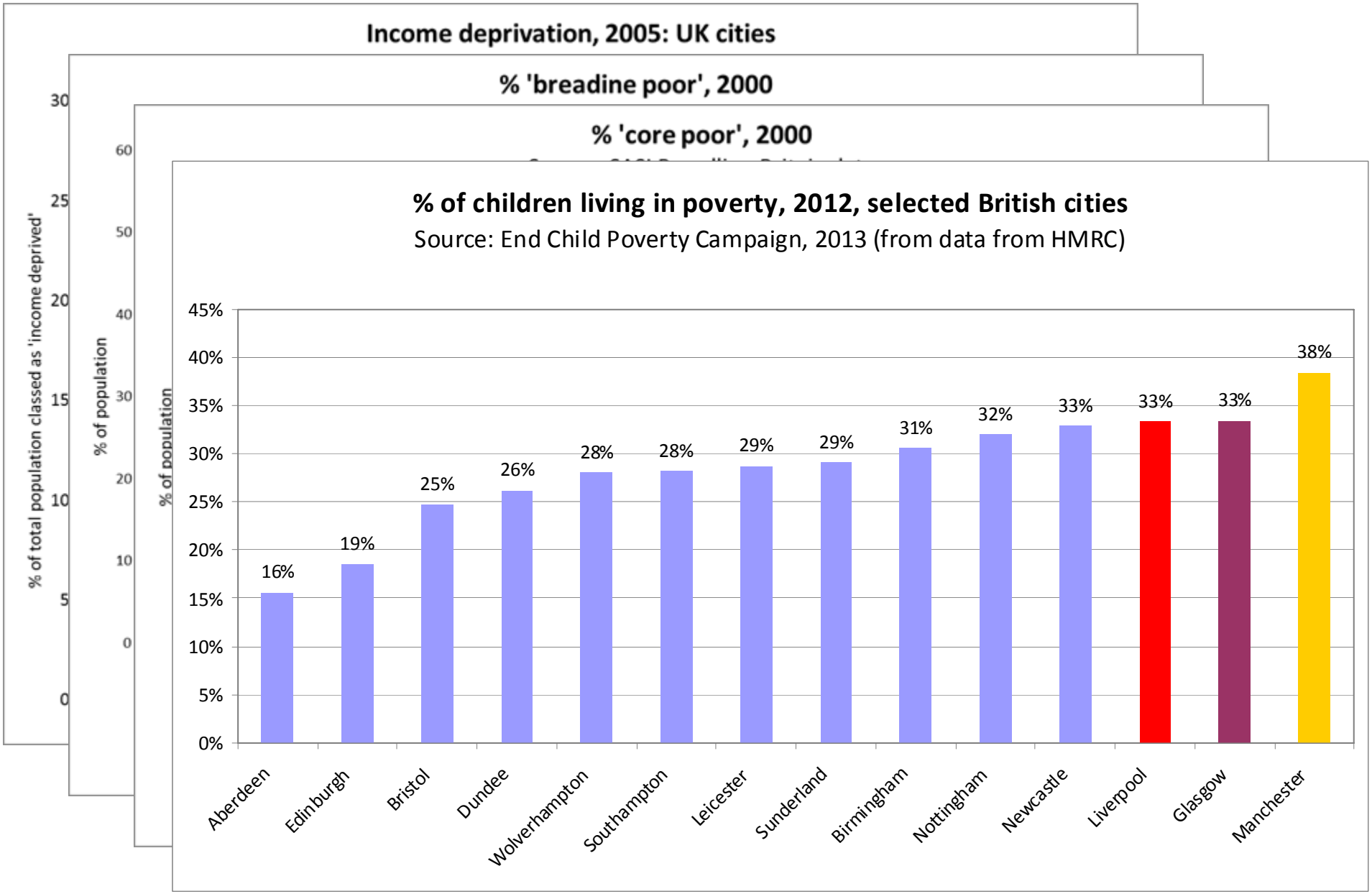
So, what's the problem?

- Complication: Glasgow's history of growth, decline, poverty and deprivation is not unique
- But its mortality profile is…

Poverty & deprivation as drivers of poor health



Comparison with other UK post-industrial cities



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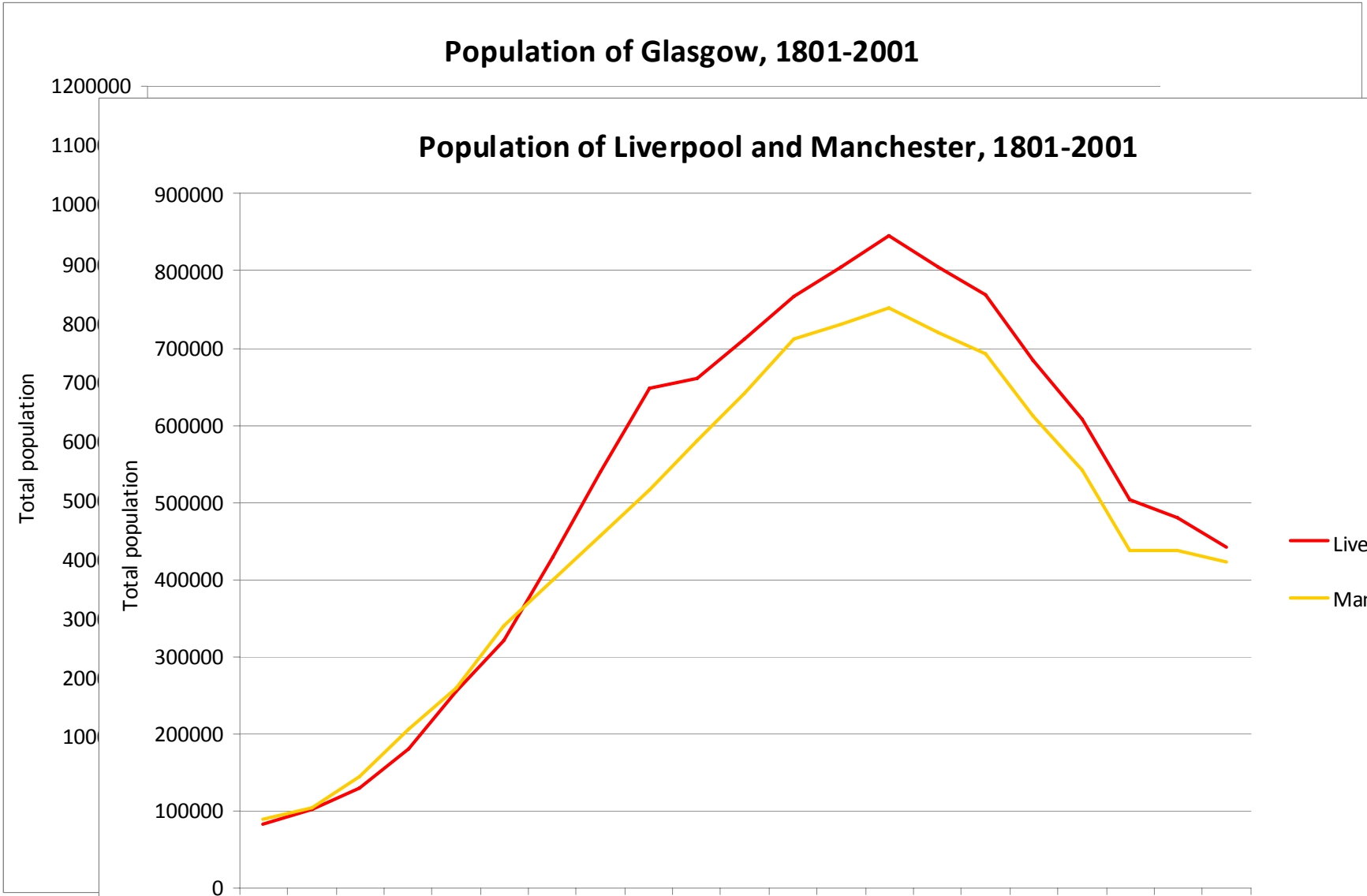

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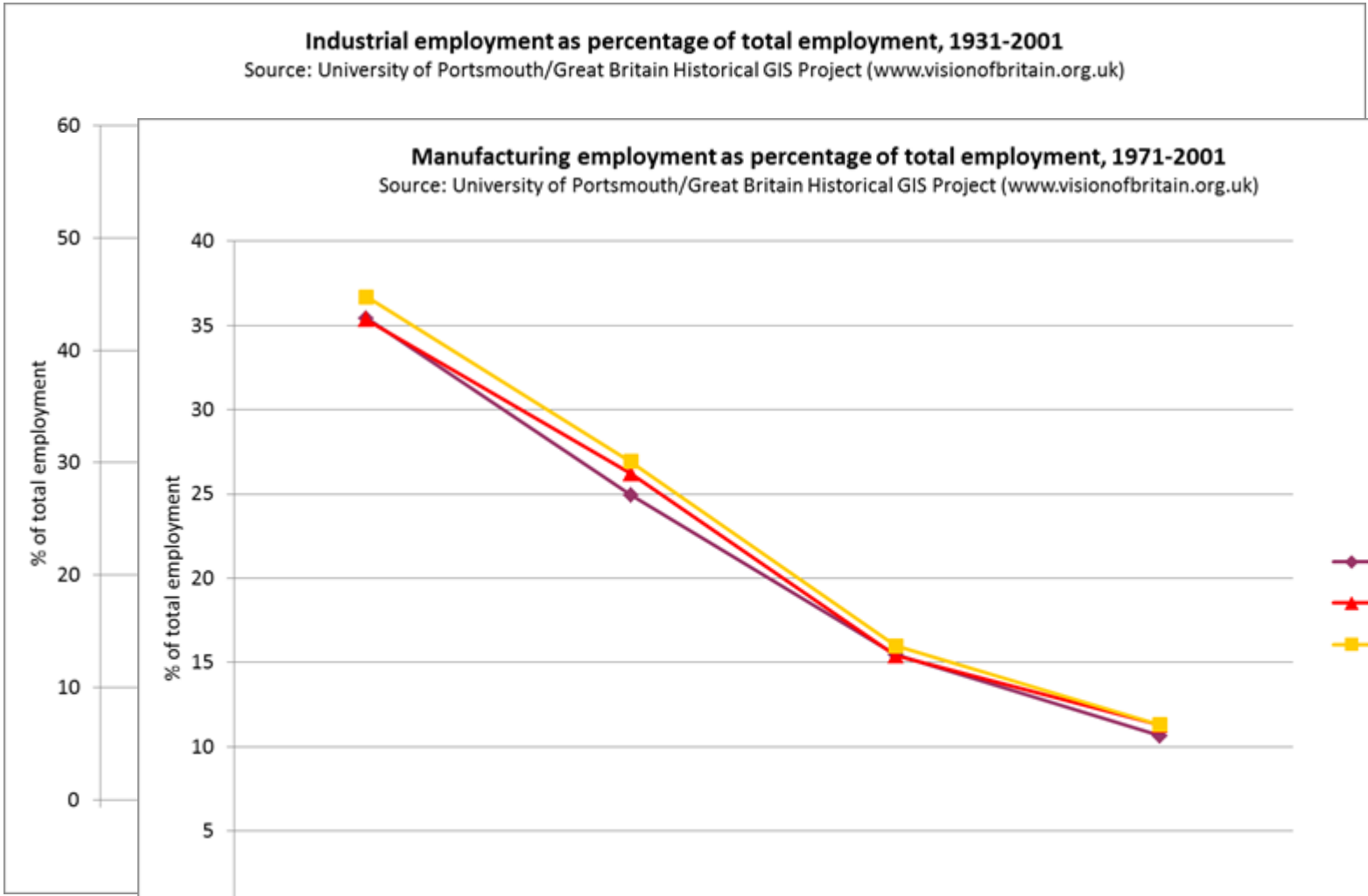

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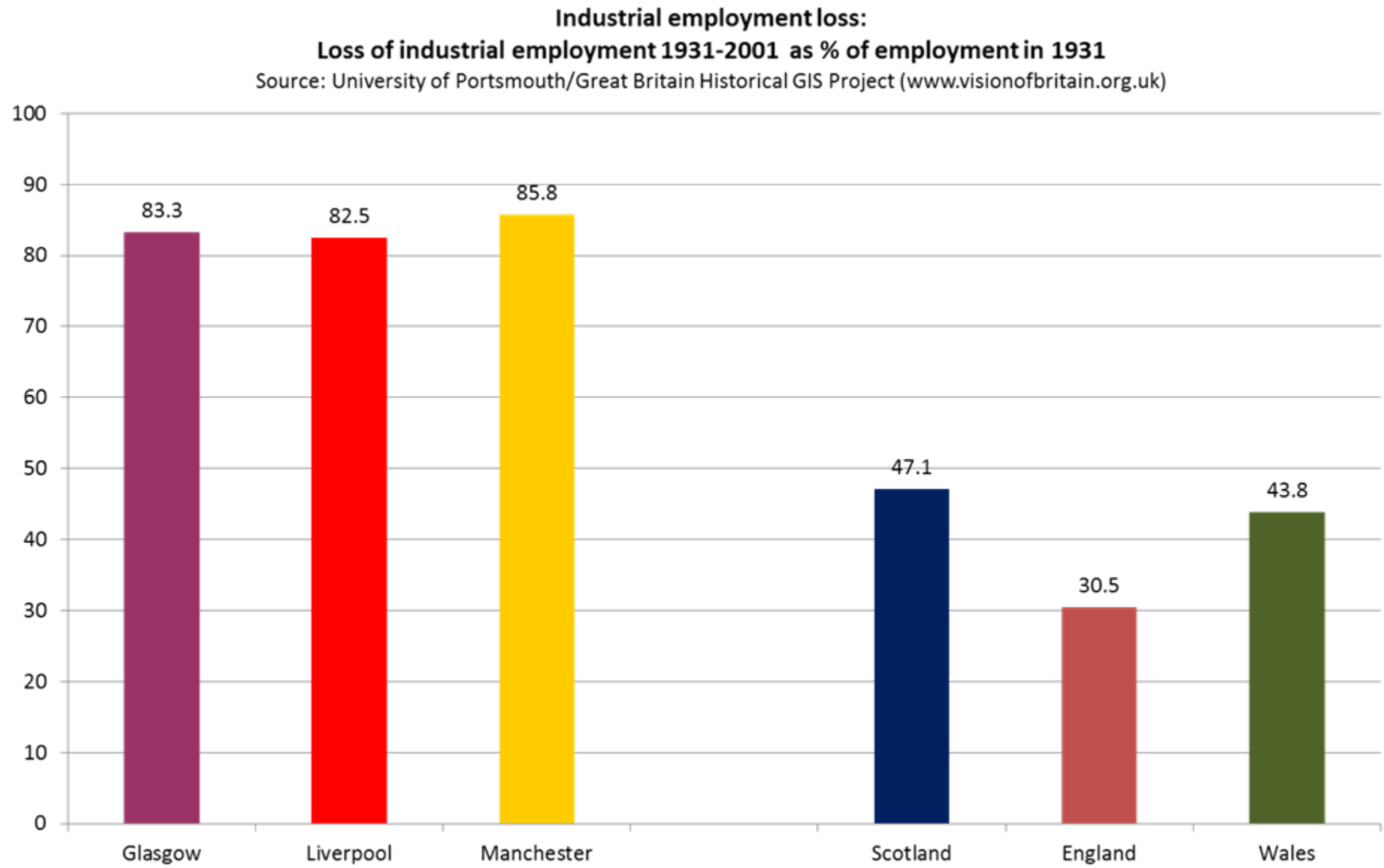
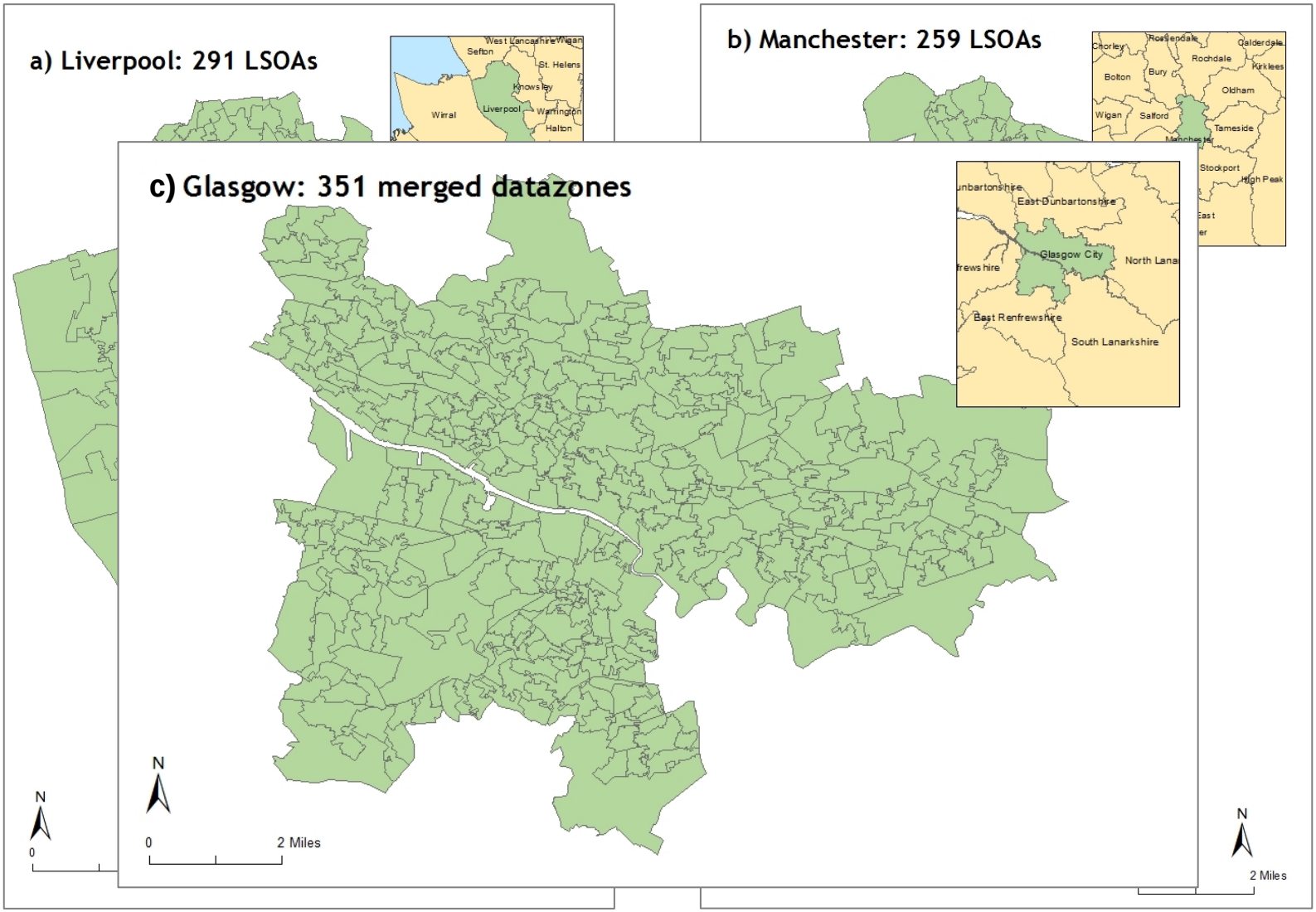
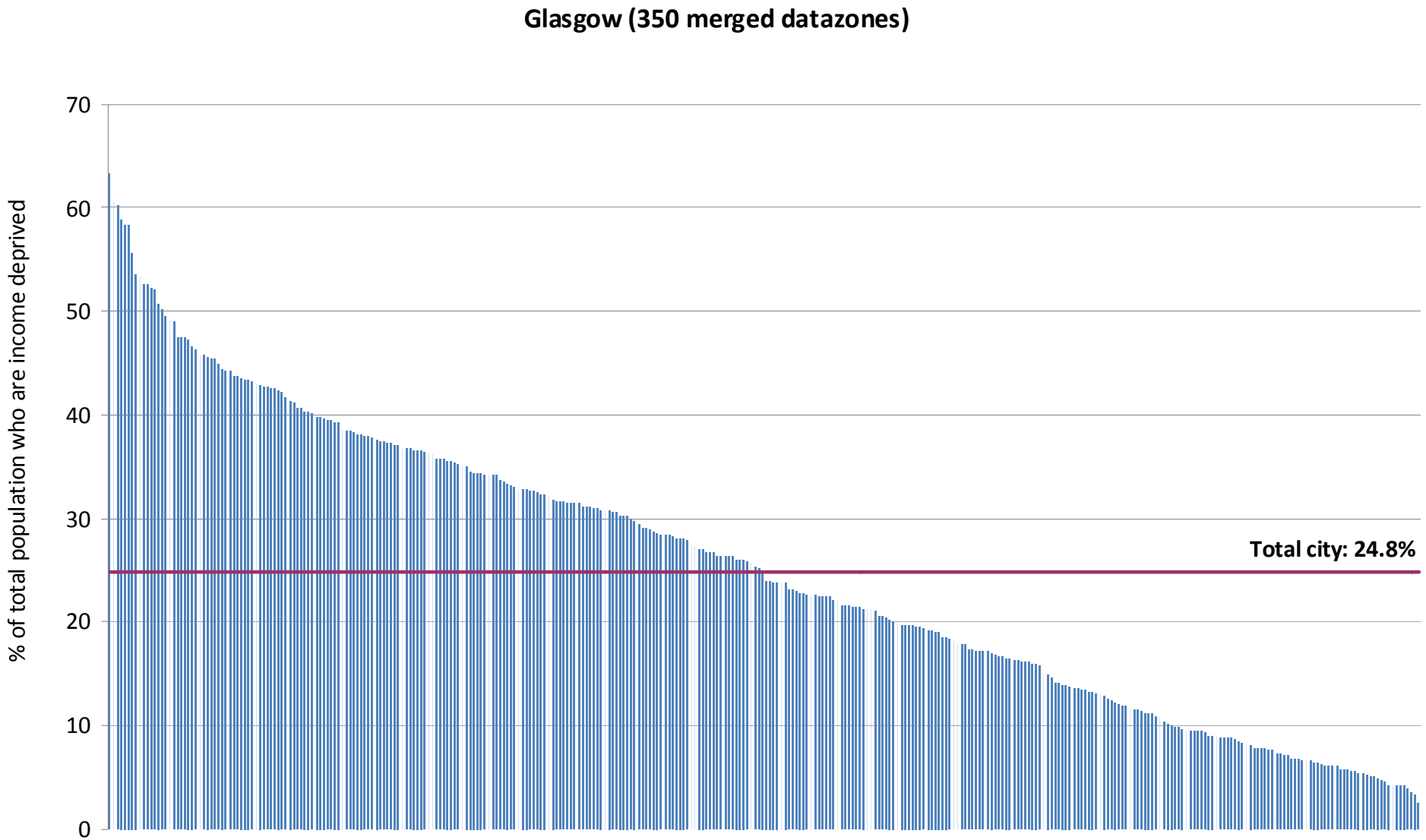


Trends in poverty/deprivation

Income deprivation in Glasgow, Liverpool & Manchester



Income deprivation - Glasgow



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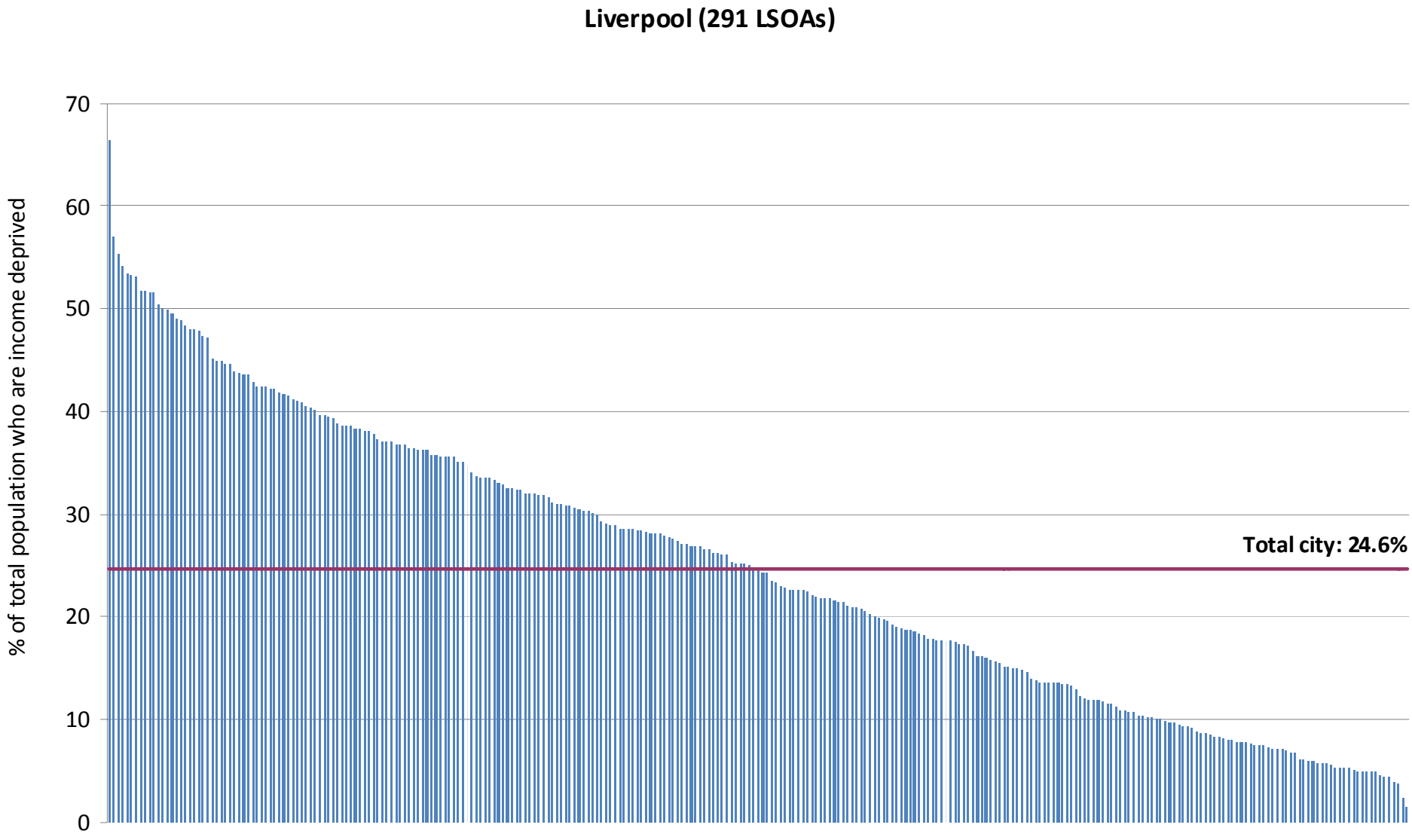
Income deprivation - Liverpool



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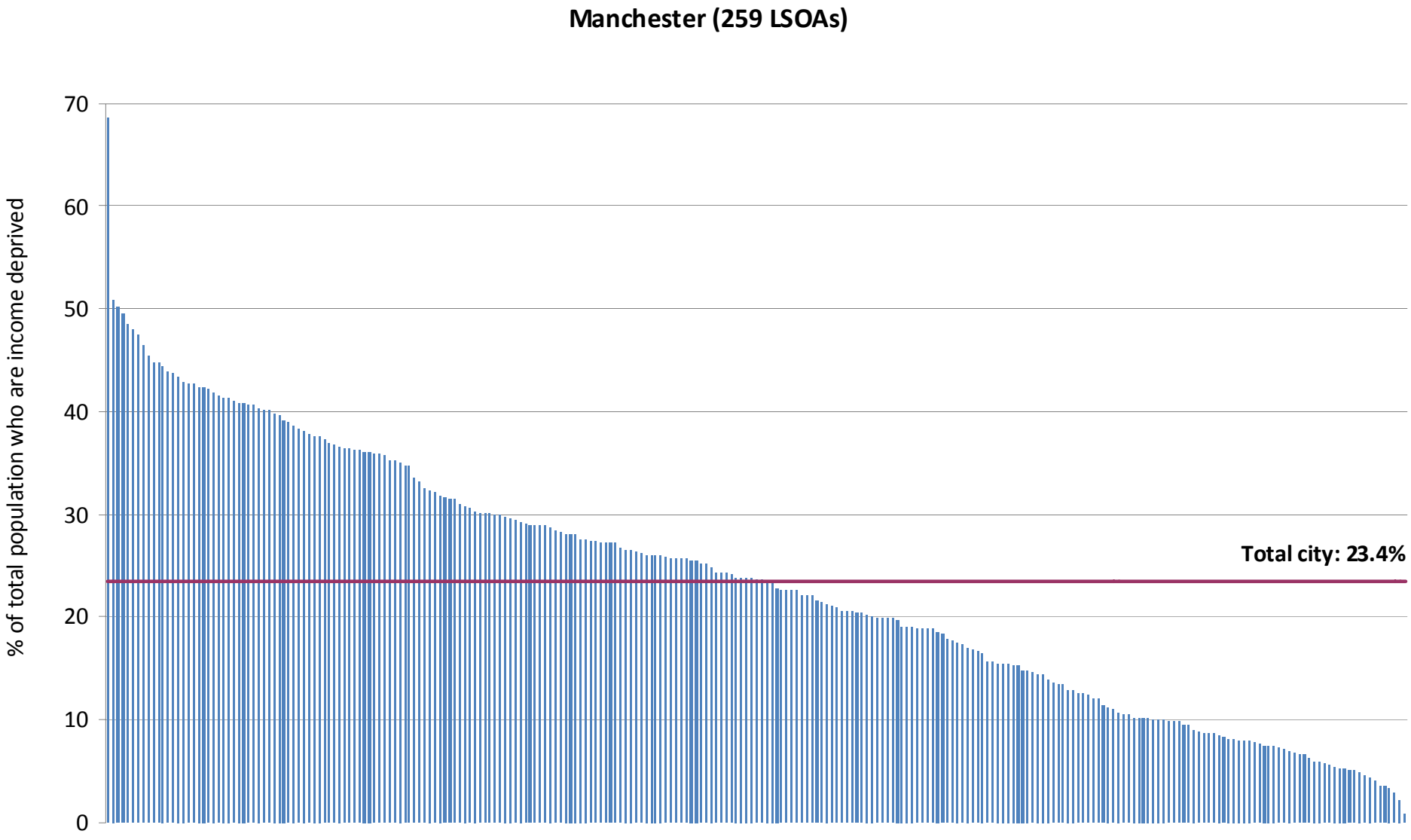
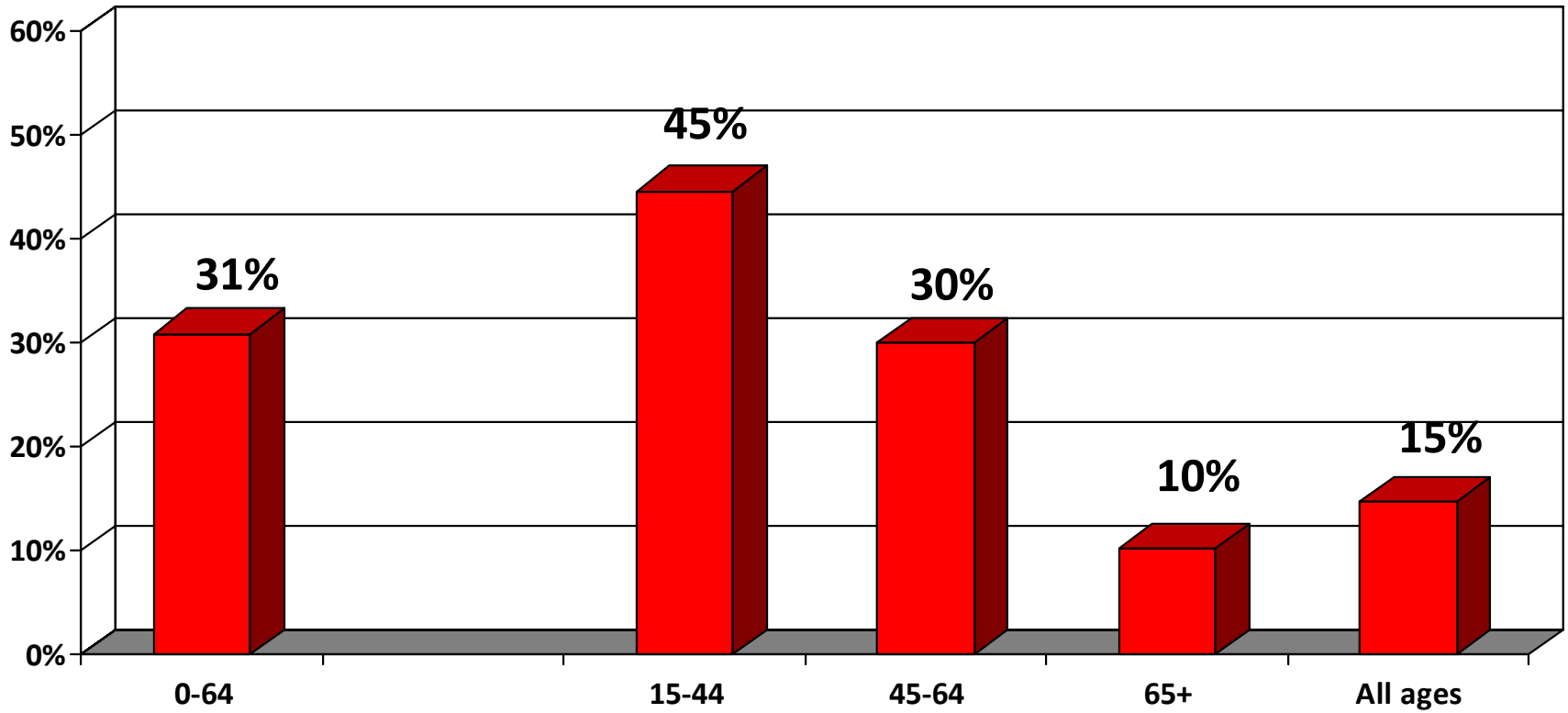
Income deprivation - Manchester

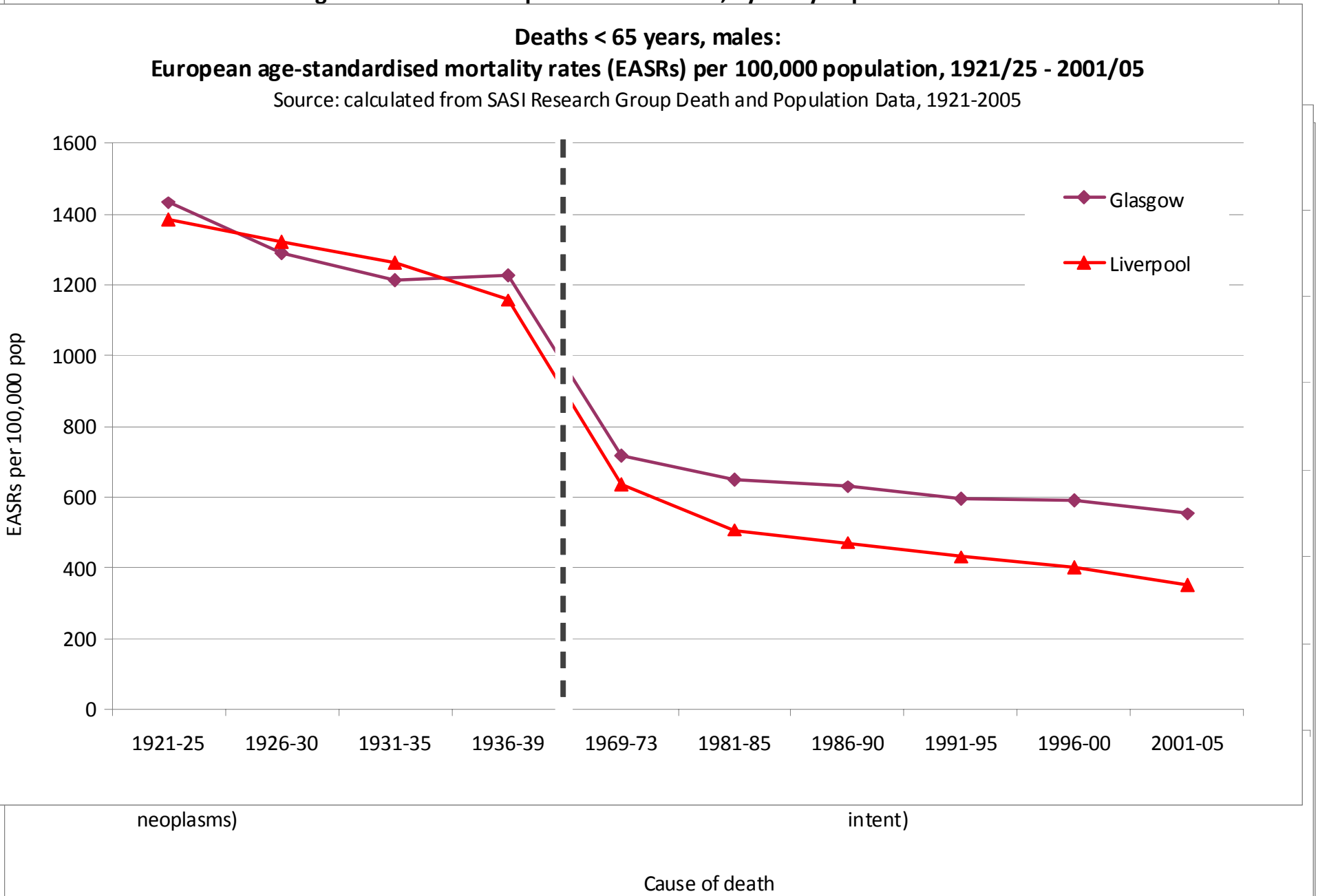


Excess mortality, Glasgow relative to Liverpool & Manchester

Excess mortality in Glasgow, standardised by age, sex and 3-city deprivation decile, 2003-07



Age/sex standardised mortality ratios (all-cause deaths 2003-07),
Glasgow relative to Liverpool & Manchester, by 3-city deprivation decile



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Excess mortality research

- So, 'excess' defined as higher mortality *over and above* that explained by socio-economic deprivation
- 'Three city' comparisons only one of many examples of research highlighting 'excess' mortality in Scottish population…

Research examples

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- McCartney G., Russ T.C., Walsh D. et al. Explaining the excess mortality in Scotland compared with England: pooling of 18 cohort studies (2013 - awaiting publication)
- Mitchell R, Fowkes G, Blane D and Bartley M. High rates of ischaemic heart disease in Scotland are not explained by conventional risk factors. Journal of Epidemiology and. Community Health 2005; 59: 565-567
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- Popham F. Is there a 'Scottish effect' for self reports of health? Individual level analysis of the 2001 UK census. BMC Public Health 2006, 6:191
- Walsh D, Taulbut M, Hanlon P. The aftershock of deindustrialization – trends in mortality in Scotland and other parts of post-industrial Europe. European Journal of Public Health 2010 20: 58-64
- Walsh D., Bendel N., Jones R., Hanlon P. It's not 'just deprivation': Why do equally deprived UK cities experience different health outcomes? Public Health 124 (2010), 487-495.

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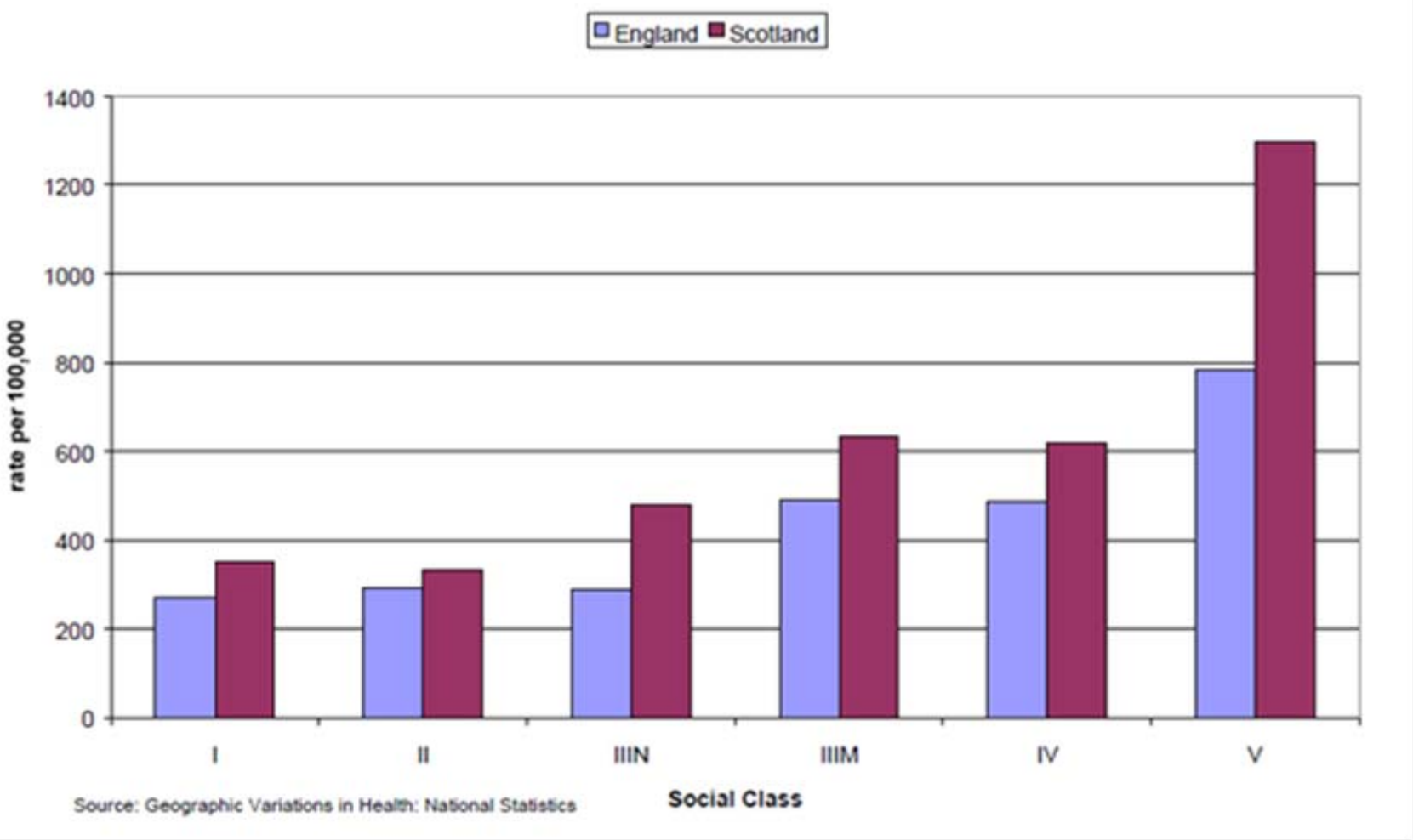
Common themes of research into Scottish 'excess' mortality

- Excess increasing over time
- Excess shown irrespective of measures of poverty/SES used
- Seen for all causes of death
- Persists after controlling for individual health behaviours (smoking etc)
- Affects all social classes, but highest among comparisons of poorest

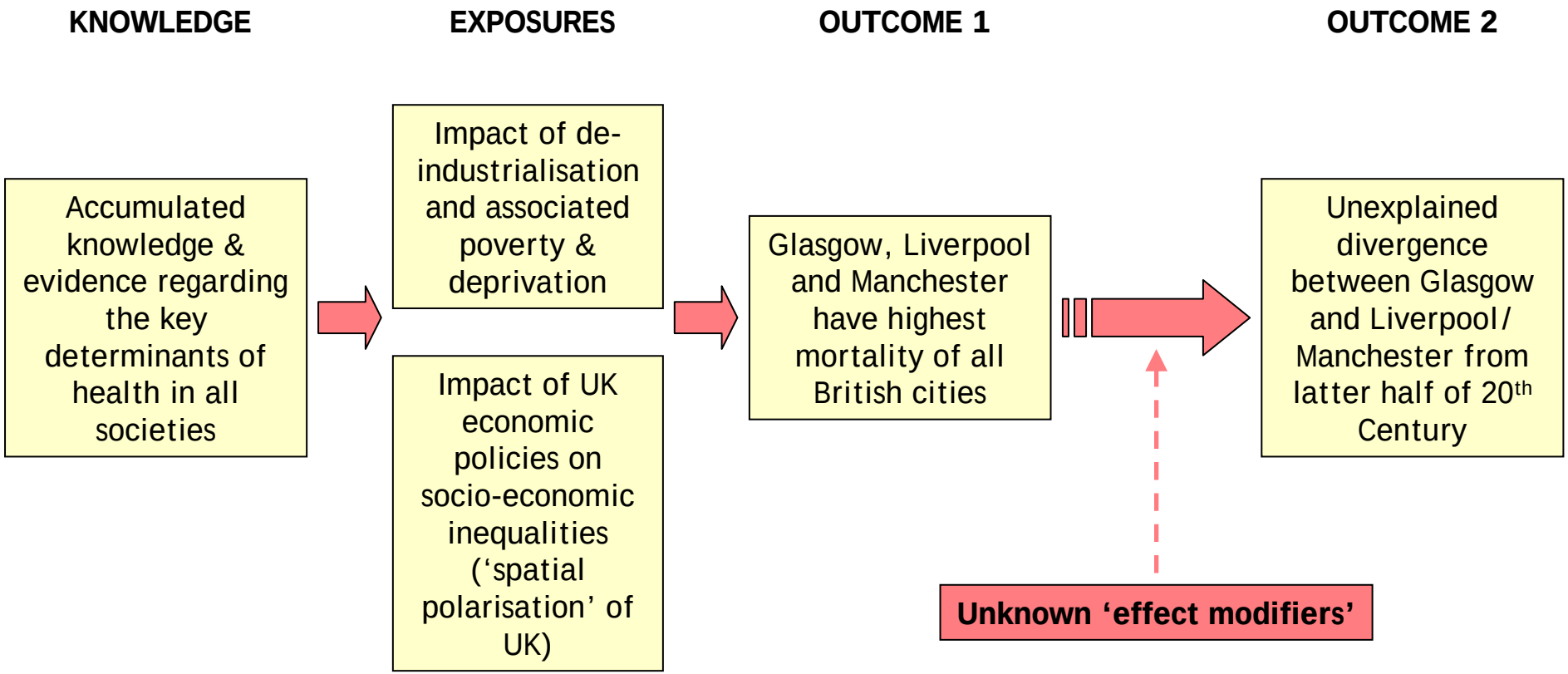
Premature mortality by social class

Age-standardised all-cause mortality rates by Social Class, England and Scotland, males aged 20-64, 1991-93



(Source: Scottish Executive, 1993 (from data originally presented by Uren et al, 2001))

Context for Glasgow's excess mortality



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Theories, theories, theories…

- Artefact
- Migration
- Political attack/effects
- Culture
- Deindustrialisation
- Income inequalities
- Social mobility
- Substance misuse cultures
- Alienation/anomie
- Family/parenting/early years
- Social capital
- (Health) services
- Patterning of deprivation
- Sectarianism
- Individual values (e.g. psychological outlook)
- Sense of coherence
- Behaviours
- Genetics
- The weather…

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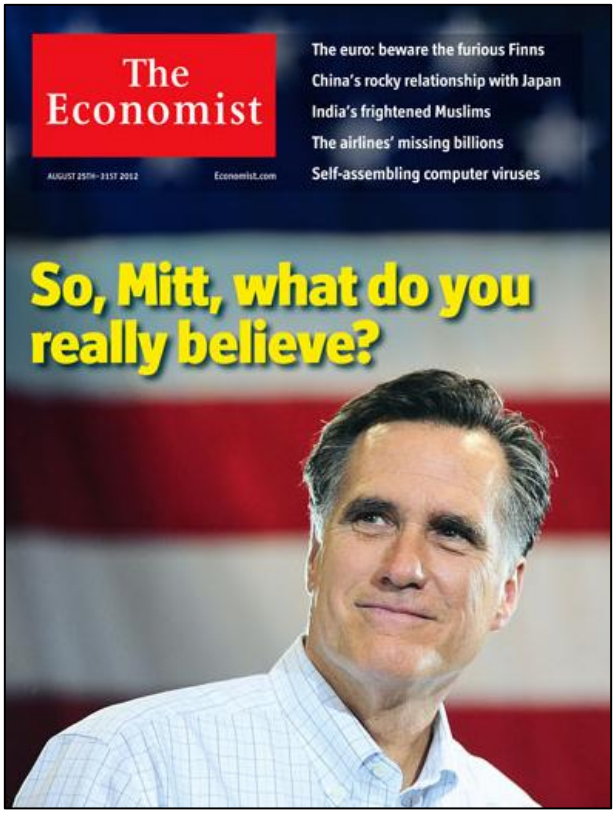
Other proposed theories…

- Rainfall
- Irn Bru
- Broadband
- Water impurities
- A lack of runner beans
- Land contamination
- Abortions
- Submarines on the Clyde
- Low air pressure
- A general “curse”

Other proposed theories…



"It is as if a malign vapour rises from the Clyde at night and settles in the lungs of sleeping Glaswegians"

The Economist. 'No City for Old Men'. August 2012

Theories, theories, theories…

- Artefact
- Migration
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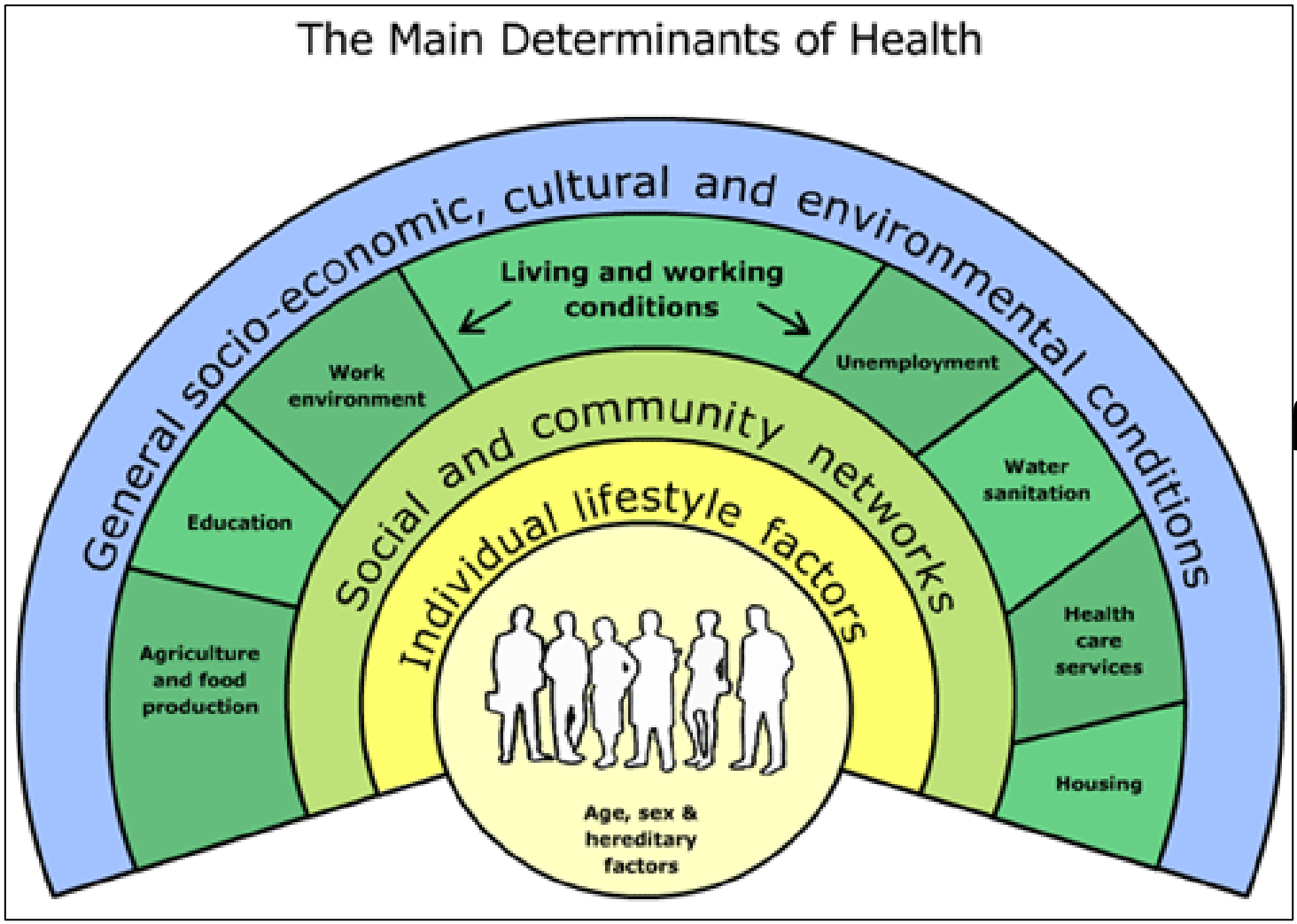
- Genetics
- The weather…

Trying to make sense of excess mortality in Glasgow/Scotland

1.
2.
3.
4.



Clues from work undertaken to date

1. Different (combinations of) factors affecting different populations
2. Available measures of poverty don't capture essence of living in deprived circumstances in Glasgow/Scotland – evidenced by:
   - Proven/profound links between poverty and health
   - Causes of death linked to the excess
   - Hints from other data sets…
3. Importance of history
   - E.g. scale of urban change in Glasgow
   - National and local political decisions
4. Likely to be protective factors operating in other cities

And finally…

- Spot the missing words…?

‘thoughtful’

‘insightful’

‘thoughtful’ and ‘insightful’?

UTENRIKS

Skottene lever seks år kortere enn engelskmenn. Ingen vet hvorfor.

GLASGOW (VG) Skottene lever i snitt lever til de er 72 år. Engelskmenn blir 78. Kan forklaringen være frityrstekt Mars-sjokolade?

Det tok VG få minutter å finne godbiten på menyen i ot gatekjøkken midt i Glasgow.

– Jeg selger en full kartong eller to i løpet av en uke. Opp mot hundre sjokolader, forteller Ilur Bajrami.

Han står bak disken i gatekjøkkenet Blue Lagoon i West Nile Street og viser hvordan han tilbereder frityrstekt Mars-sjokolade.

Først dyppes sjokoladen flere ganger i en flytende blanding av mel og smør før den frityrstekes i tre til fire minutter. Resultatet er en innbakt, smeltet sjokolade til 1,95 pund som særlig frister ungdommer og turister.

– Det er godt, men hvis du er opptatt av vekten din så bør du ikke prøve, smiler gatekjøkkenkokken.

Myten om den frityrstekte sjokoladen nådde det medisinske tidsskriftet Lancet for flere år siden. De sjekket flere hundre gatekjøkken i Skottland. En av fem solgte «delikatessen».

Leter etter svar

– Jeg har aldri spist frityrstekt Mars-sjokolade og kjenner ingen som har spist det, sier foreleser David Walsh ved Universitetet i Glasgow. Han rister oppgitt på hodet.

– Kosthold er viktig. Kostholdet er dårligere i fattige områder, men vi har ikke bevis for at kostholdet i Skottland er annerledes enn i England, sier Walsh. Han leder studien ved Glasgow Centre for Population Health som skal prøve å finne svaret på hvorfor skottene lever kortest av alle i Vest-Europa.

Befolkningen i de fattige områdene rundt Glasgow har høyest dødelighet, men selv skottene i høylandet og skotter som bor i utlandet lever i snitt kortere enn andre, forteller Walsh. De eneste unntakene finnes i de rike områdene i Edinburgh.

Anne-Lise von der Fehr

FOTO: Fredrik Solstad

I SKOTTLAND

Like historier

For å forstå hvorfor skottene har kortere forventet levealder har Walsh og hans kolleger sammenlignet levekårene i Glasgow, Manchester og Liverpool. De tre byene har like historier. De var store industribyer som de siste tiårene har opplevd nedleggelse av tungindustri, jernverk og skipsverft.

Sammenligningen viste at befolkningen i Glasgow er like fattige, har like mange arbeidsledige, de røyker ikke mer, drikker seg ikke mer fulle og spiser ikke mer usunt enn befolkningen i Manchester og Liverpool. Likevel dør 30 prosent flere før fylte 65 år i Glasgow, enn i Liverpool og Manchester.

Tallene viser at de dør langt oftere av lungekreft, hjerte- og karsykdommer, drap, selvmord, alkohol og narkotika, enn engelskmennene.

DEN SKOTSKE MYSTERIET: *Forsker David Walsh jobber med å finne ut hvorfor skottene har lavest forventet levealder i Vest-Europa, selv om forskning ikke lyder på at de lever mer usunt enn engelskmennene.*

– Resultatet av hvordan folk lever er mer dramatisk her enn i Liverpool og Manchester, sier Walsh. – Vi kaller det Skottland-effekten, men vi vet ikke hva det er.

Gena Mahir som bor i Drumchapel, et av Glasgows mange fattige sosiale boligområder, er dermot ikke i tvil.

– Dårlig livsstil, svarer hun umiddelbart på spørsmål om hvorfor hennes landsmenn dør så unge.

Hennes lokale kjøpesenter i Drumchapel er typisk for de gamle sosiale bolligområdene. Den har ingen bugnende ferskvarebutikk. Utenfor veddemålbutikken Ladbrokes henger mannfolkene og lar seg en røyk. En mager eldre mann hoster og harker på vei mot bussen.

– Jeg må reise i 20 minutter for å finne butikk med fersk mat, forteller Gena.

– Komplisert

David Walsh og kollegene har plukket fra hverandre en mengde forklaringer for å finne svaret på det skotske mysteriet, som; påstander om mangel på vitamin D på grunn av været, mangelende tro på fremtiden, miljøet skottene vokser opp i med dårlige og billige etterkrigsboliger, utflytting og dårlig helse som følge av fattigdom. Ingen av dem er sterke nok til å forklare den høye dødeligheten, sier Walsh.

– Det er ikke en forklaring, det må skyldes en kompleks virkning av mange faktorer over mange år, sier Walsh.

Om ni måneder er forskningsarbeidet ferdig. Da er de kanskje nærmere svaret.

I gatekjøkkenet Blue Lagoon strømmer folk inn for å kjøpe frityrstekt lunsj. To solide bygningsarbeidere rister på hodet på spørsmål om de har spist frityrstekt Mars-sjokolade.

Vi kjøper King Rib til lunsj. Det er veldig godt, dere burde prøve, smiler de på vei ut.

King Rib er frityrstekt svinekjøttmasse, som selges med pommes frites.

E-post: anneliese.vonderfehr@vg.no

‘Excess’ mortality in Scotland and Glasgow: context & evidence

David Walsh

Glasgow Centre for Population Health

Glasgow Centre for Population Health