Why the Scots die younger: an updated synthesis

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Glasgow Centre for Population Health

NHS Health Scotland

Today

- Includes:
  1. What do we mean by ‘excess’ mortality? (very, very, very briefly)
  2. Building evidence-based explanatory models:
     - for Glasgow
     - For Scotland
  3. Next steps

- Doesn’t include:
  - Implications and responses (still being developed, and short of time)

- NB – today: **edited highlights** only

Scottish ‘excess’ mortality

- Higher mortality observed in Scotland (compared to elsewhere in GB) *over and above* that explained by differences in socio-economic deprivation
- NB Poverty and deprivation (and underlying/ related factors e.g. deindustrialisation) main drivers of poor health in any society
- But higher mortality still observed in Scotland after taking deprivation & poverty into account e.g.
  - Scotland vs England & Wales 2010-12:
    - 10% higher all-cause deaths (all ages)
    - 25% higher cerebrovascular disease
    - 75% higher suicide (*Schofield et al, forthcoming*)
  - Glasgow vs Liverpool & Manchester 2003-07:
    - 30% higher premature deaths (<65 years)
    - 15% higher deaths all ages (*GCPH, 2010*)
- Excess seen across whole population and has increased steadily since the 1980s
- Ubiquitous in Scotland but greatest in WCS/Glasgow
- Unhelpfully referred to as ‘Scottish Effect’ and ‘Glasgow Effect’

What explains the excess? Synthesising the evidence

Synthesising the evidence

- Lots (and lots and lots) of suggested explanations
  - Some rational
  - Some not
  - Actually a lot not
- Over, er, 40 (!!) more plausible hypotheses (e.g. not runner beans) identified (including from a systematic search)

57 varieties (well, nearly – 44)

Air pollution	Climate: winter deaths	Genetics	Political influences & vulnerability
Behaviour: alcohol	Crime	Health & social services	Premature/low birthweight babies
Behaviour: diet	Culture	Housing: quality and allocation	Scale of urban change historically
Behaviour: drugs	Culture of substance misuse	Inadequate measurement of poverty & deprivation	Sectarianism
Behaviour: obesity	Deindustrialisation	Income inequalities	Sense of coherence
Behaviour: physical activity	Deprivation concentration	Individual values: psychological outlook; hedonism; time preference; individualism; materialism	Social capital
Behaviour: smoking	Early years: family, gender relations and parenting differences	Labour market/ nature of employment	Social mobility
Benefits dependency culture	Economy - greater 'boom & bust'	Lagged effects of poverty/ deprivation	Suicide method availability
Anomie (boundlessness & alienation)	Educational attainment	Migration	Terminations of pregnancy
Climate: rainfall	Ethnic diversity	Physical environment quality (e.g. proximity to vacant/derelict land)	War dead
Climate: vitamin D	Gender/power relations	Physical environment: land contamination	Water hardness

Synthesising the evidence

- All 40+ have been individually assessed in terms of:
  - evidence for causal links from research literature
  - data for Scotland v England & Wales
  - data for Glasgow v Liverpool & Manchester
- Individual hypotheses have been ‘appendicised’ (?) in the report (and here):
  - focus is on the **synthesis** of **plausible** explanations for which there is supporting evidence
- So explanatory models are:
  - Evidence-based
  - Not speculation-based

Building explanatory models…

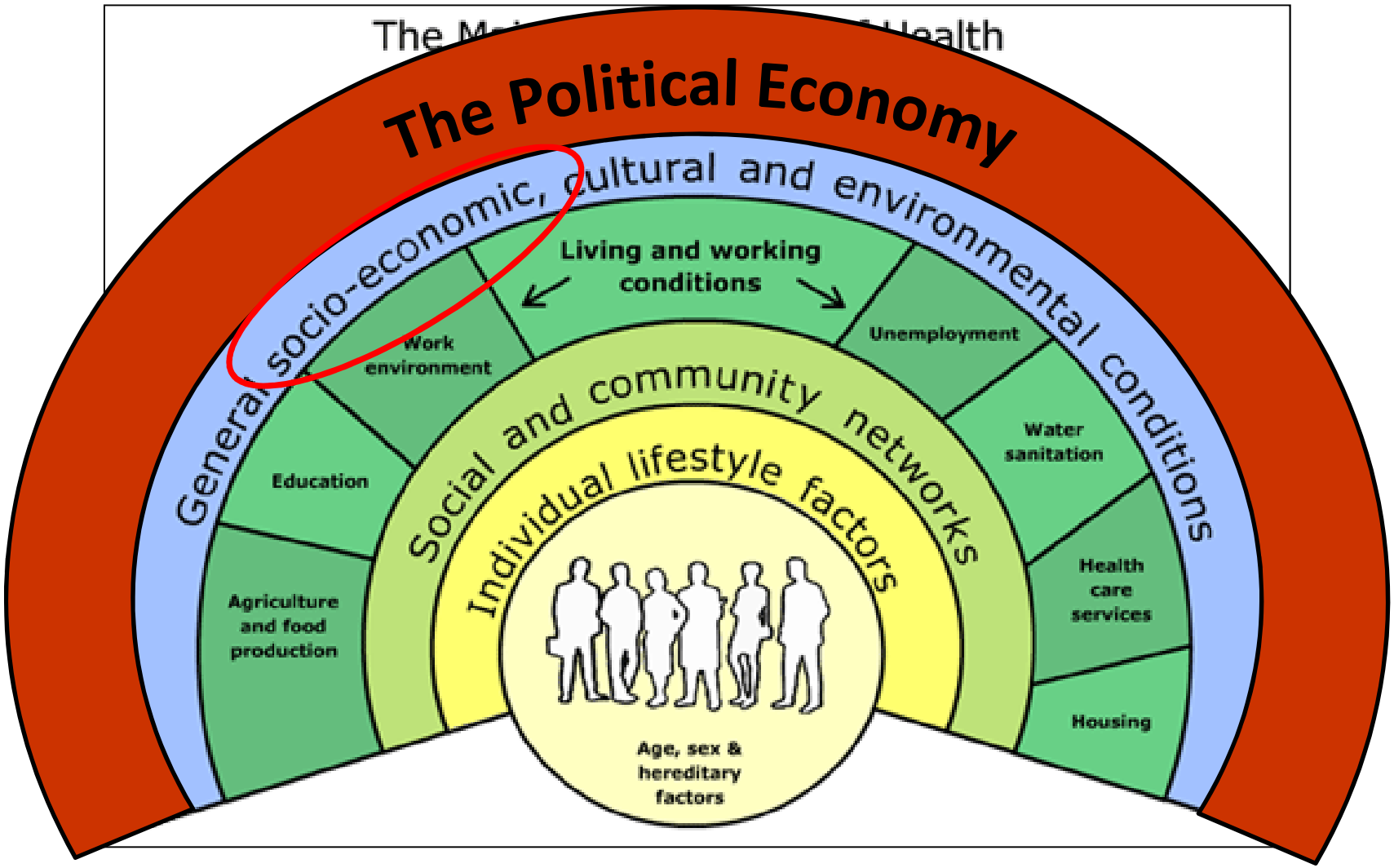
- It's very, very complicated…
- Two models:
  - Excess mortality in **Glasgow**
    - based on explicit comparison with Liverpool and Manchester (excellent comparator cities)
  - Excess mortality in **Scotland**
- NB: need to 'anchor' the models in the context of:
  - Existing knowledge & evidence regarding the determinants of health in all populations
  - Current & historical political, socio-economic context

Context for excess mortality

KNOWLEDGE

Accumulated knowledge & evidence regarding the key determinants of health in all societies

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

Context for excess mortality

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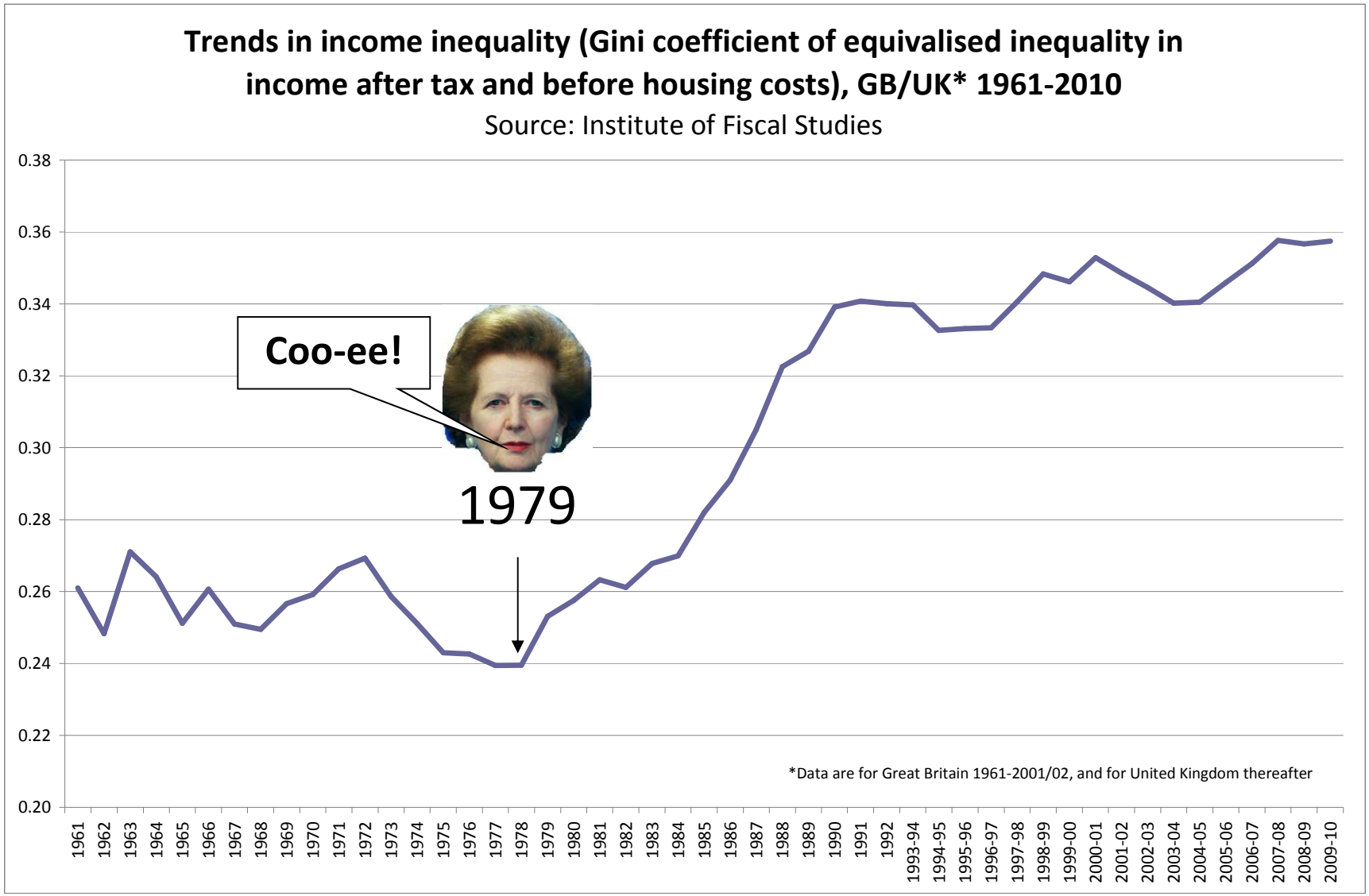
EXPOSURES

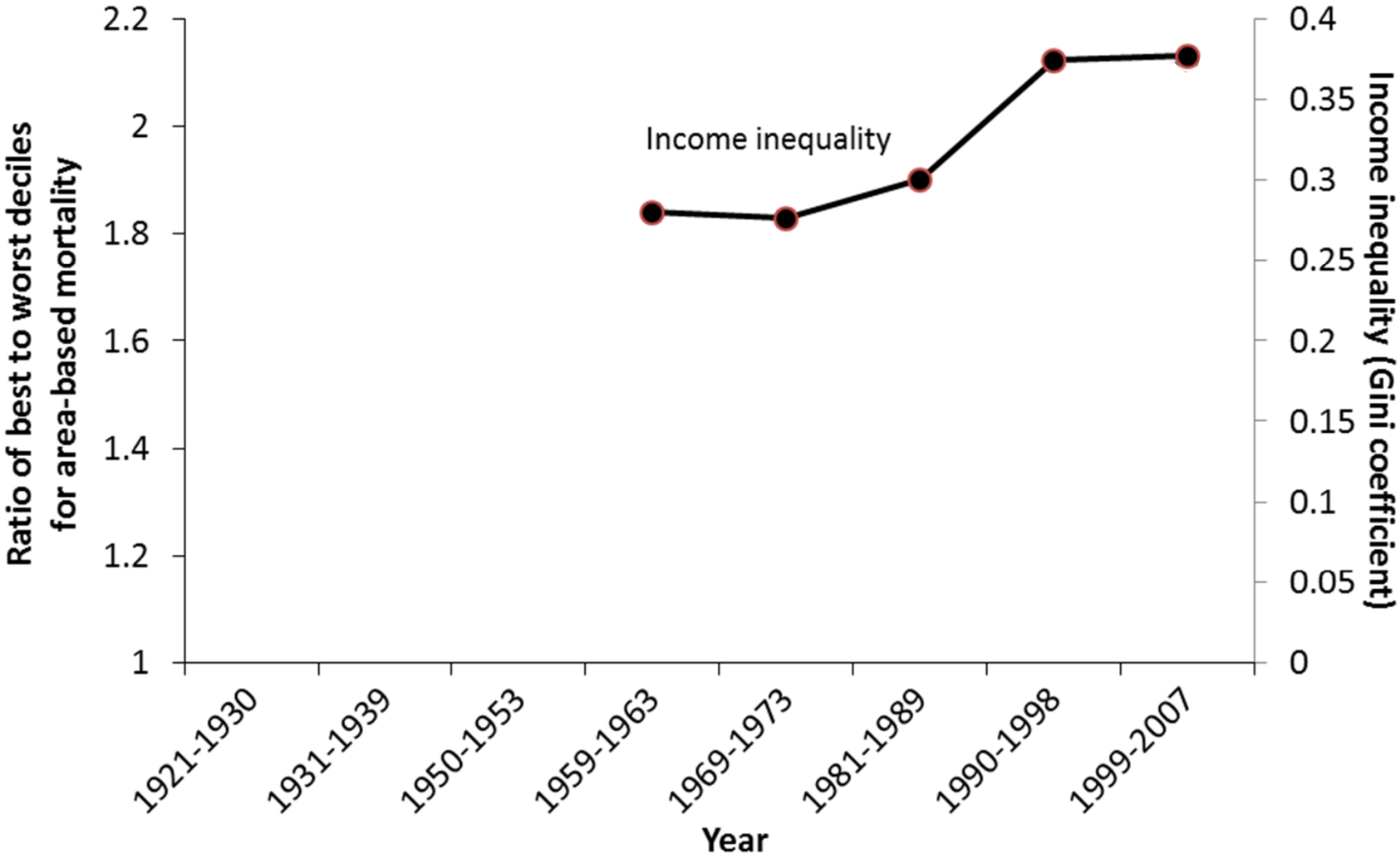
Impact of de-industrialisation and associated poverty & deprivation

Impact of UK economic policies

Context: widening income inequalities in the UK

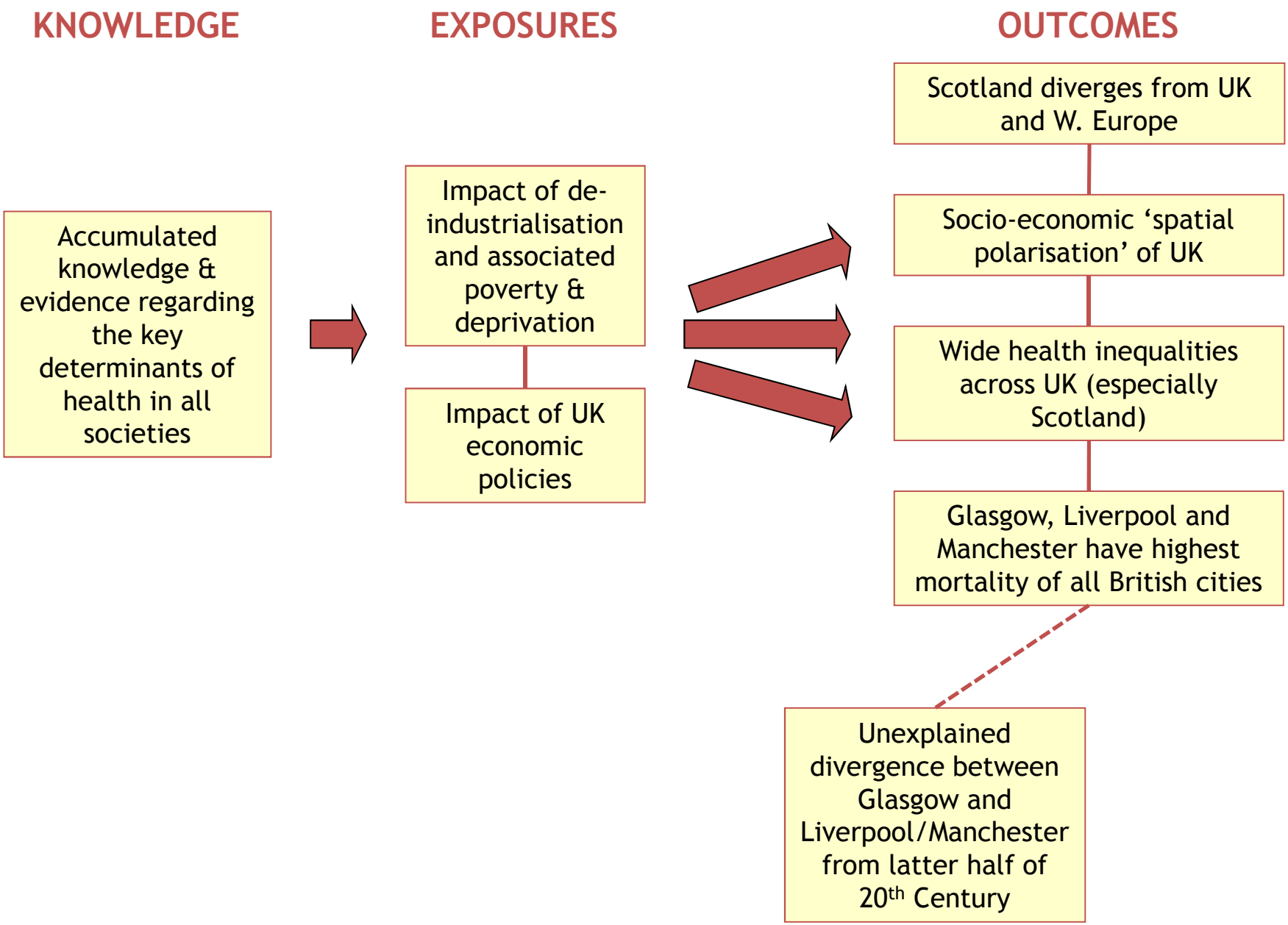


Income inequalities and spatial (local authority) mortality inequalities, GB 1921-2007

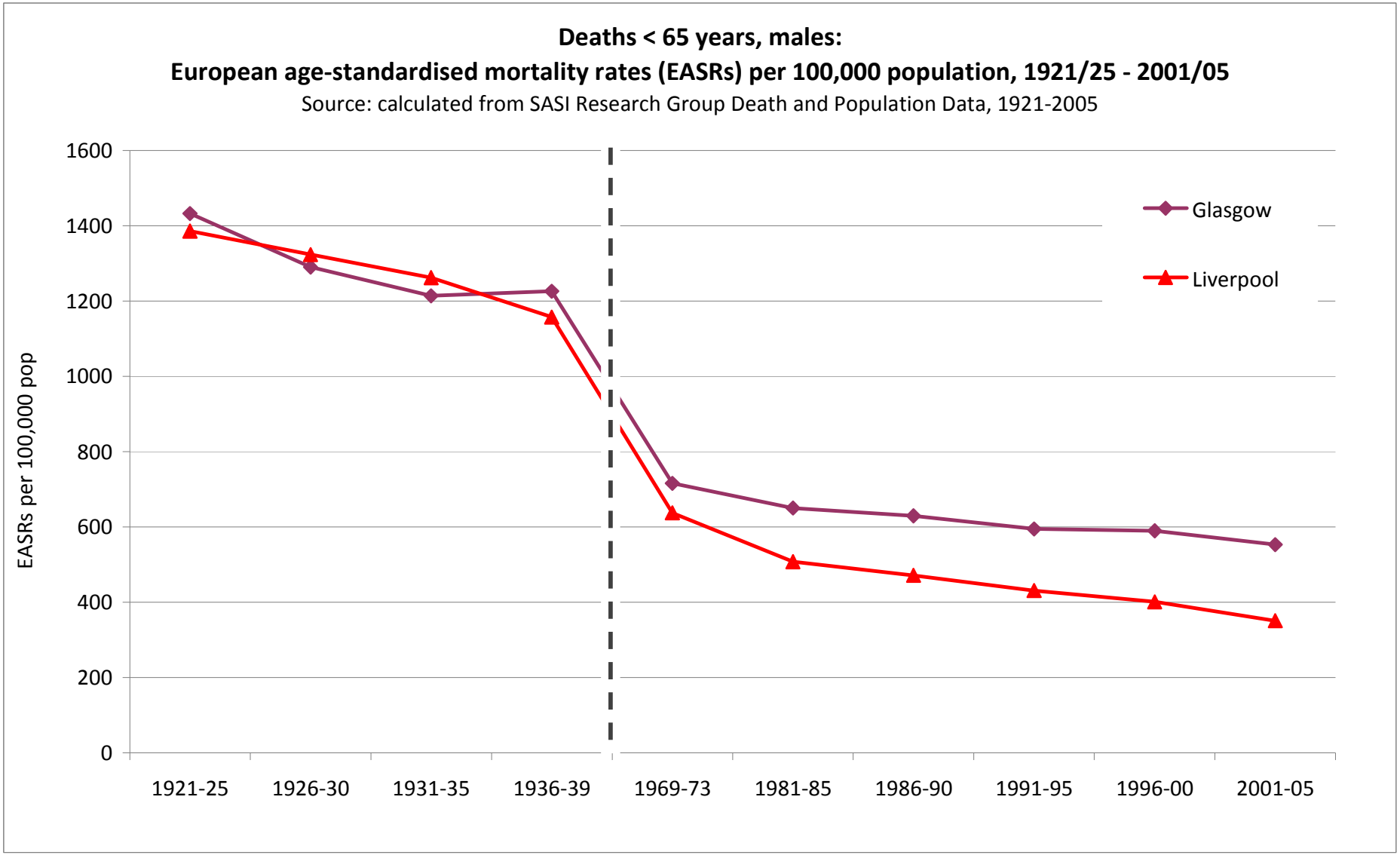


Sources: Beeston C, McCartney G, Ford J et al 2014 (from original data from Thomas et al 2010, IFS 2012)

Context for excess mortality



Context: mortality outcomes



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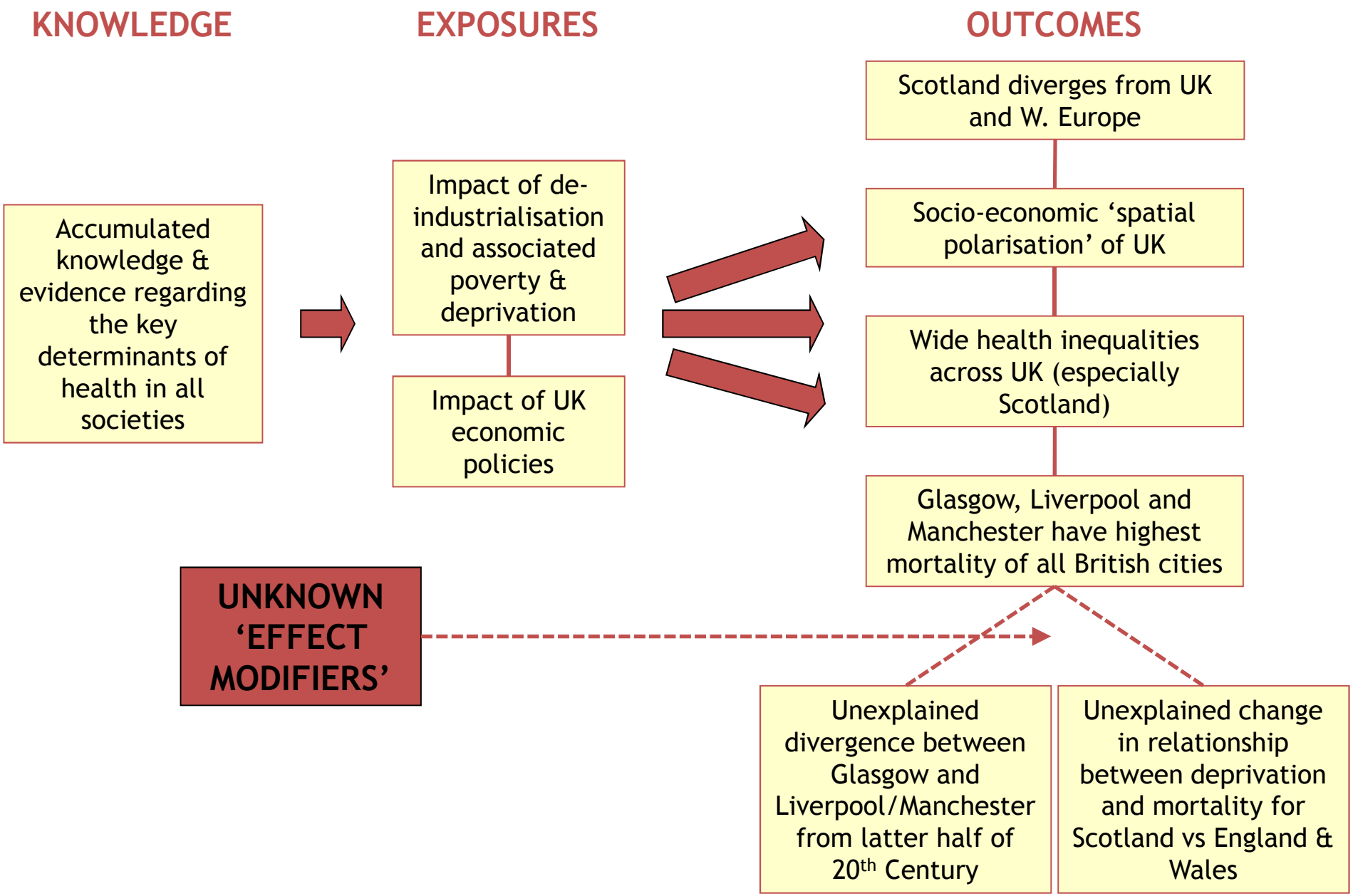
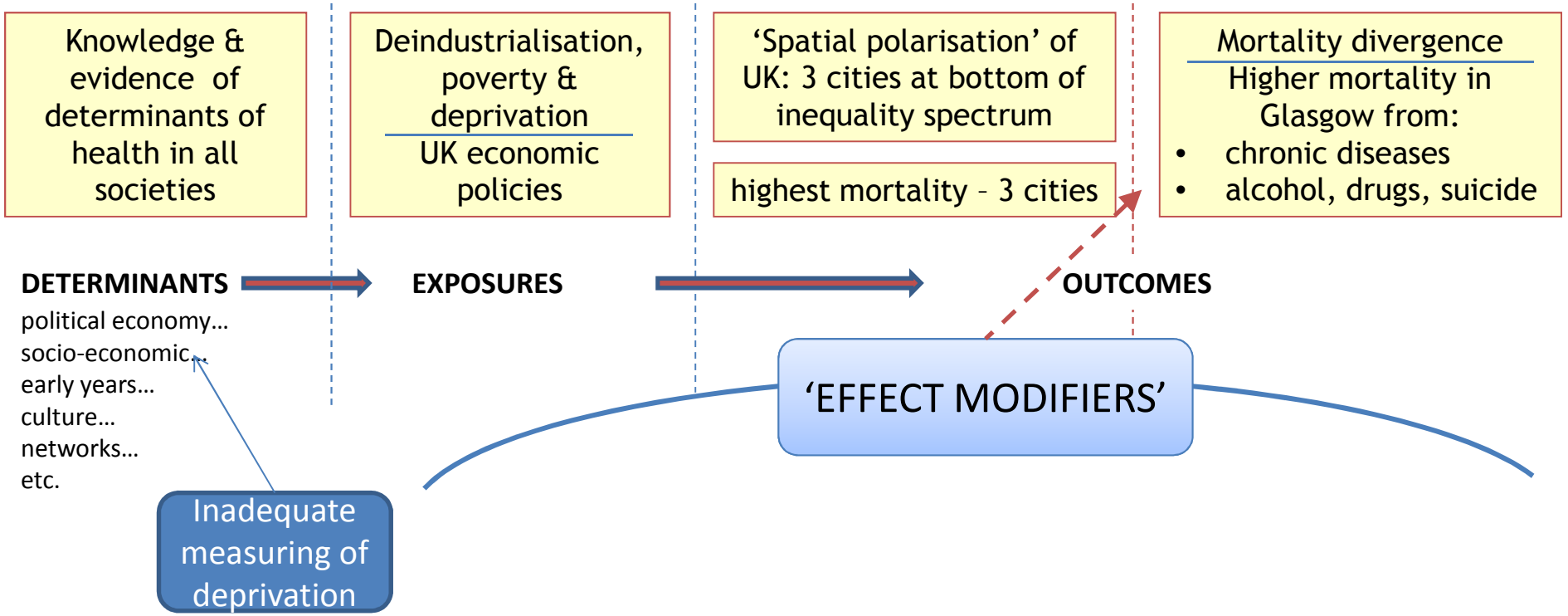


Building a model for Glasgow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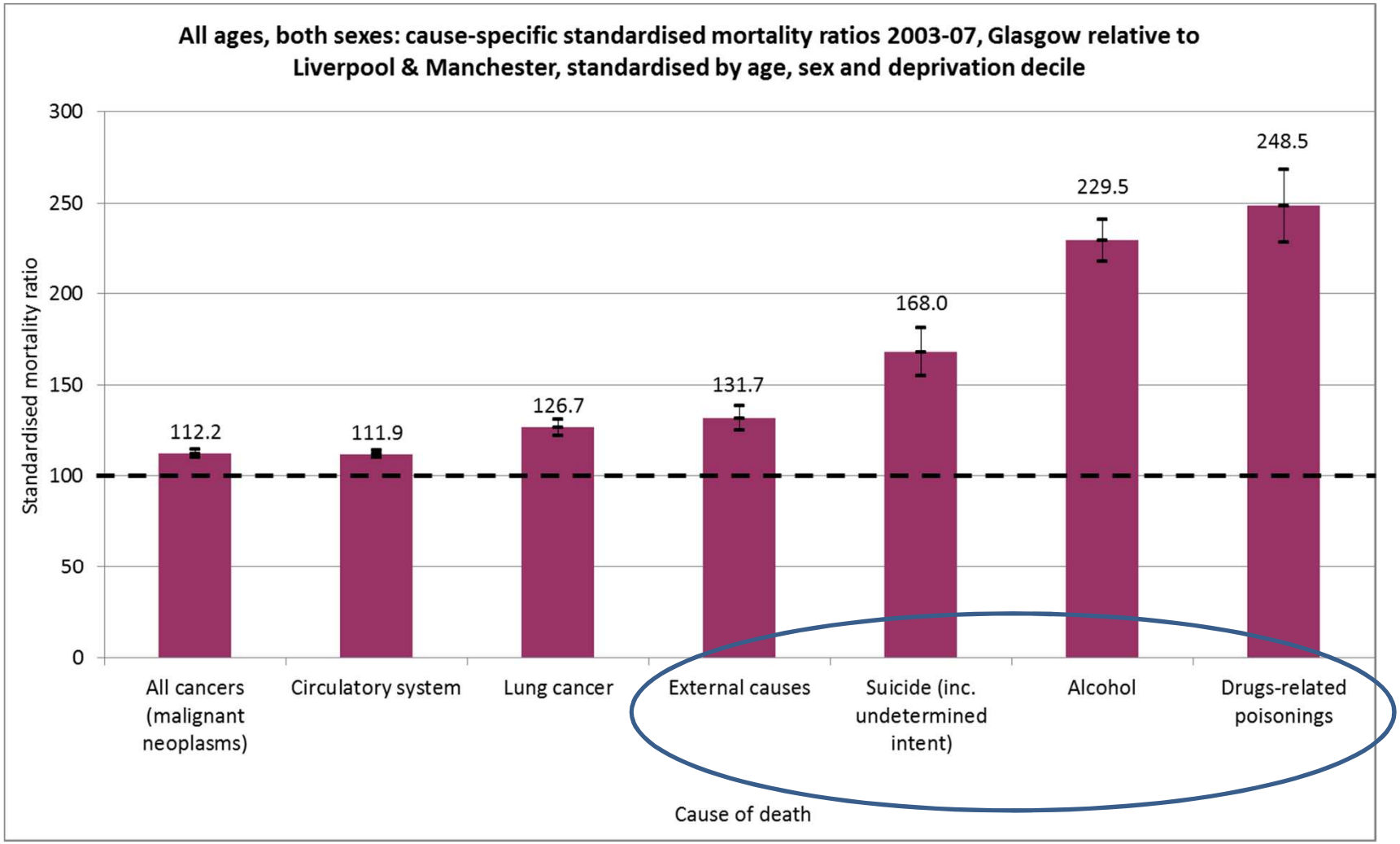
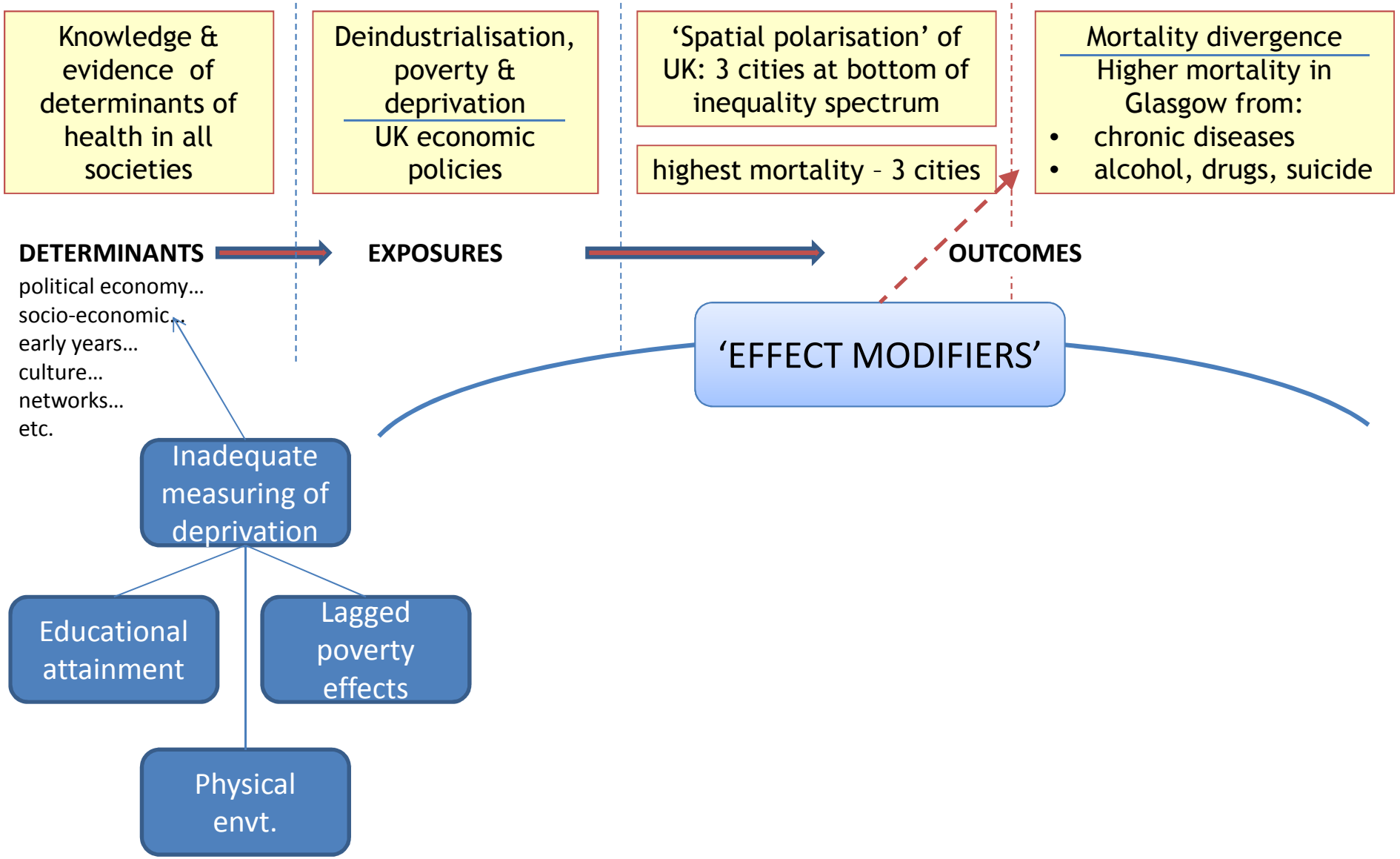
Inadequate measurement of the experience of poverty & deprivation

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Lagged effects of poverty & deprivation

- Few historical differences between the cities in measures of social class, unemployment, income-based poverty…

Percentage of households classed as 'core poor', 1970-2000

Source: Breadline Britain data (Dorling et al, 2007)

% of households

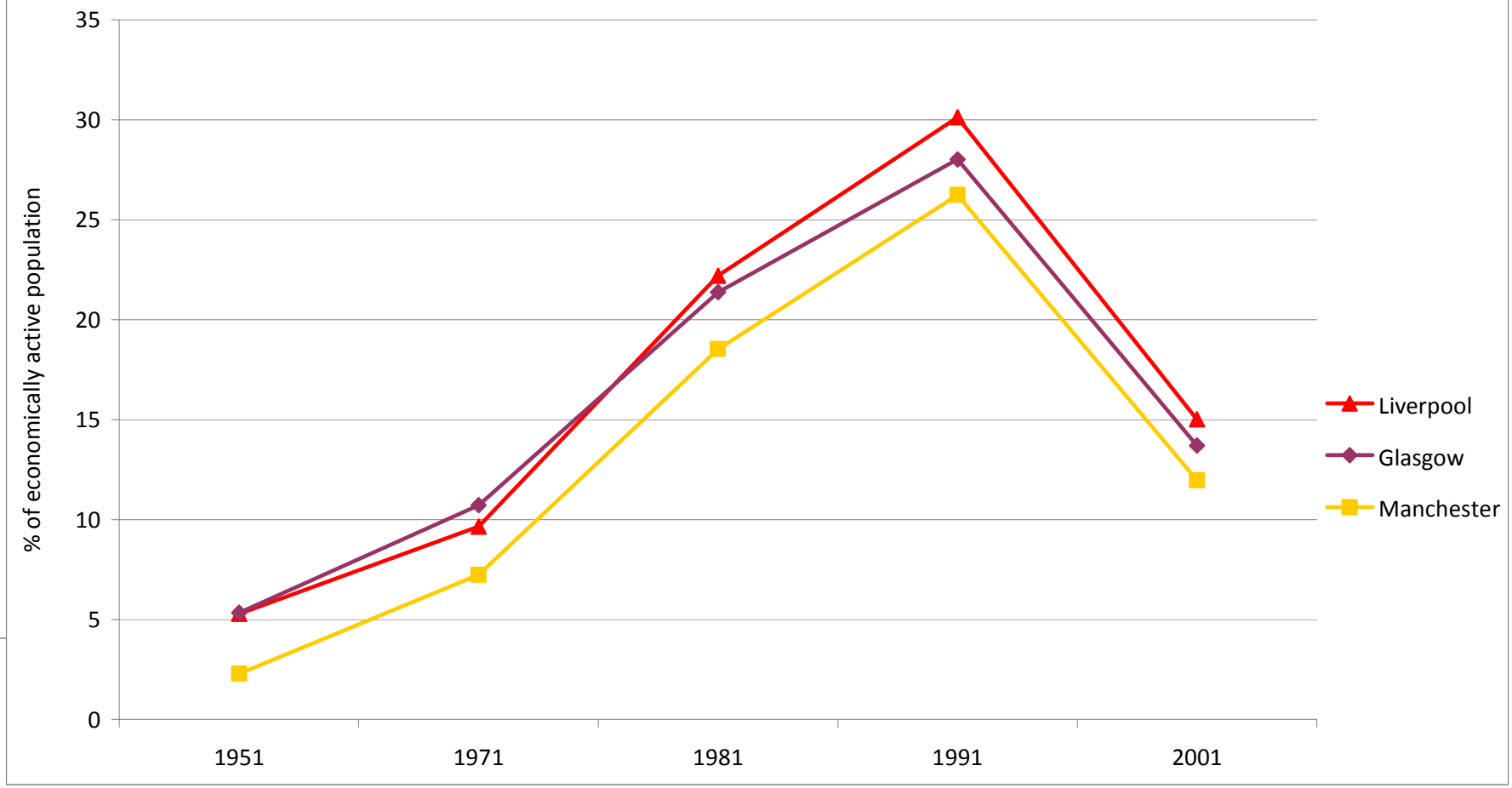
Percentage of adult males in Social Class 4 & 5, 1951-2001

Source: University of Portsmouth/Great Britain Historical GIS Project (www.visionofbritain.org.uk)

% of males of working age

Male unemployment rates, 1951-2001

Source: University of Portsmouth/Great Britain Historical GIS Project (www.visionofbritain.org.uk)



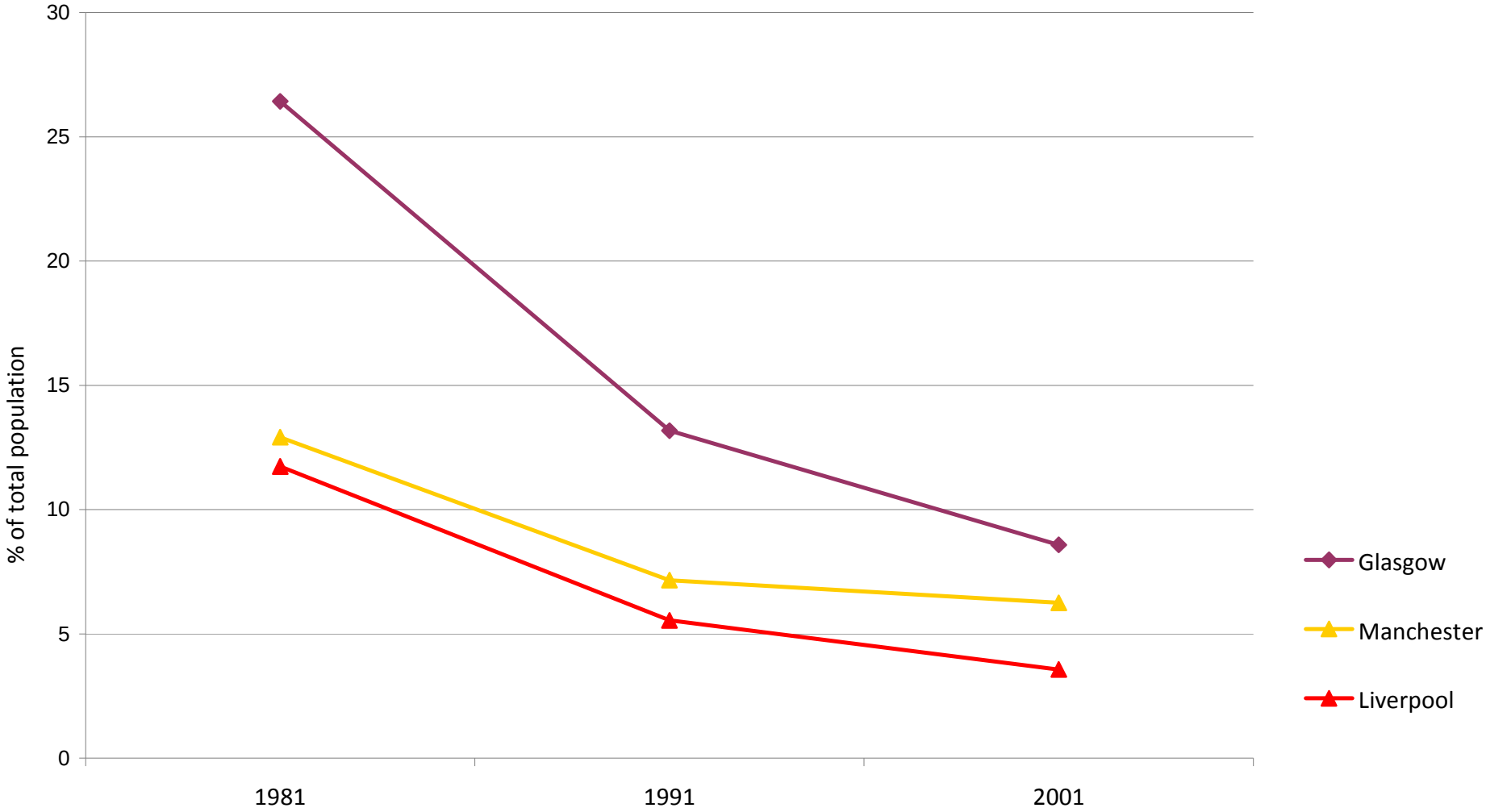
Lagged effects of poverty & deprivation

- Few historical differences between the cities in measures of social class, unemployment, income-based poverty…
- A different story for overcrowding..

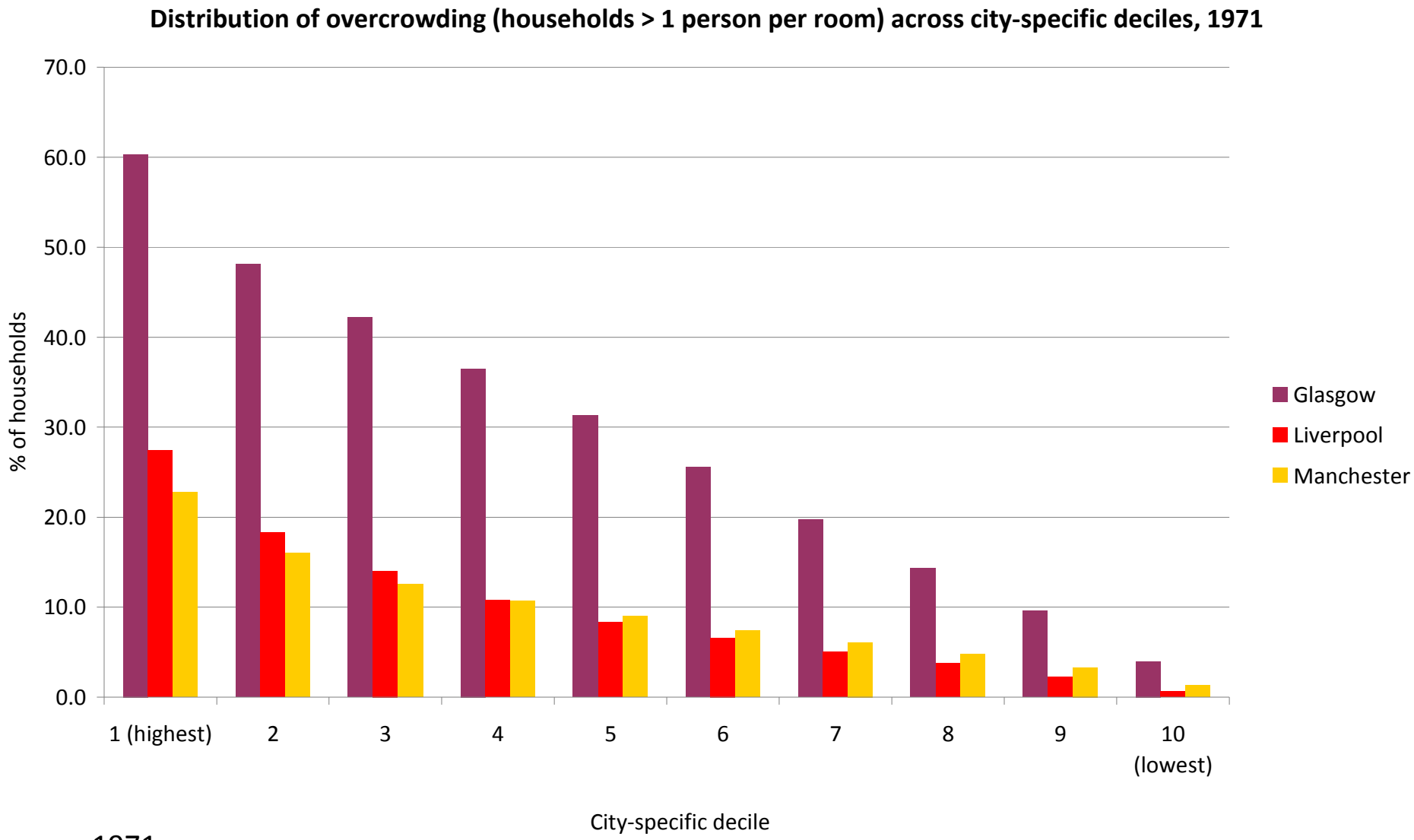
Trends in overcrowding

% population living in overcrowded households, 1981-2001

Source: Census

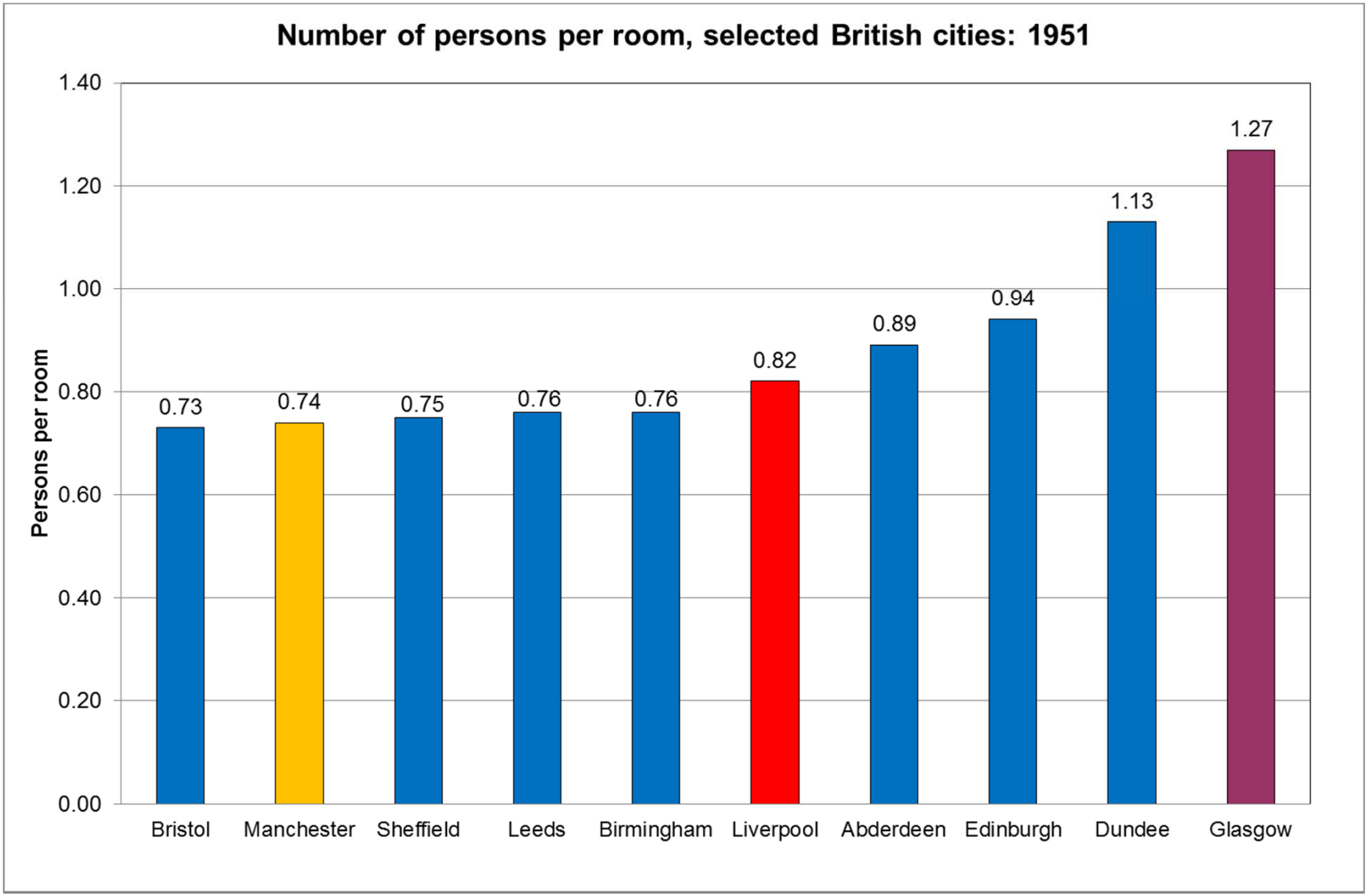


Overcrowding 1971



Source: 1971 census

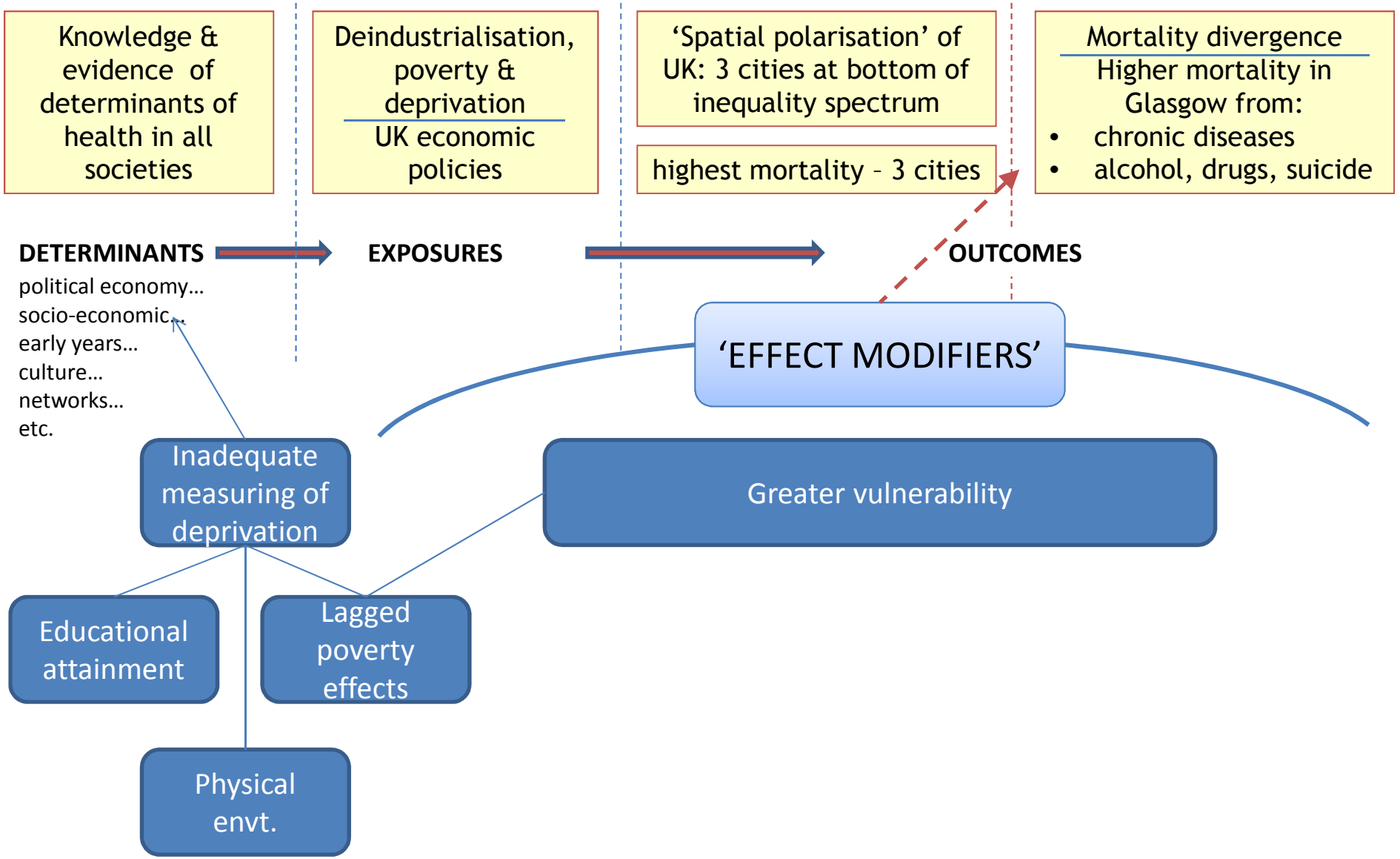
Overcrowding 1951



Source: Taulbut et al, 2015

Lagged effects of poverty & deprivation

- Few historical differences between the cities in measures of social class, unemployment, income-based poverty…
- A different story for overcrowding..
- Underlying vulnerability..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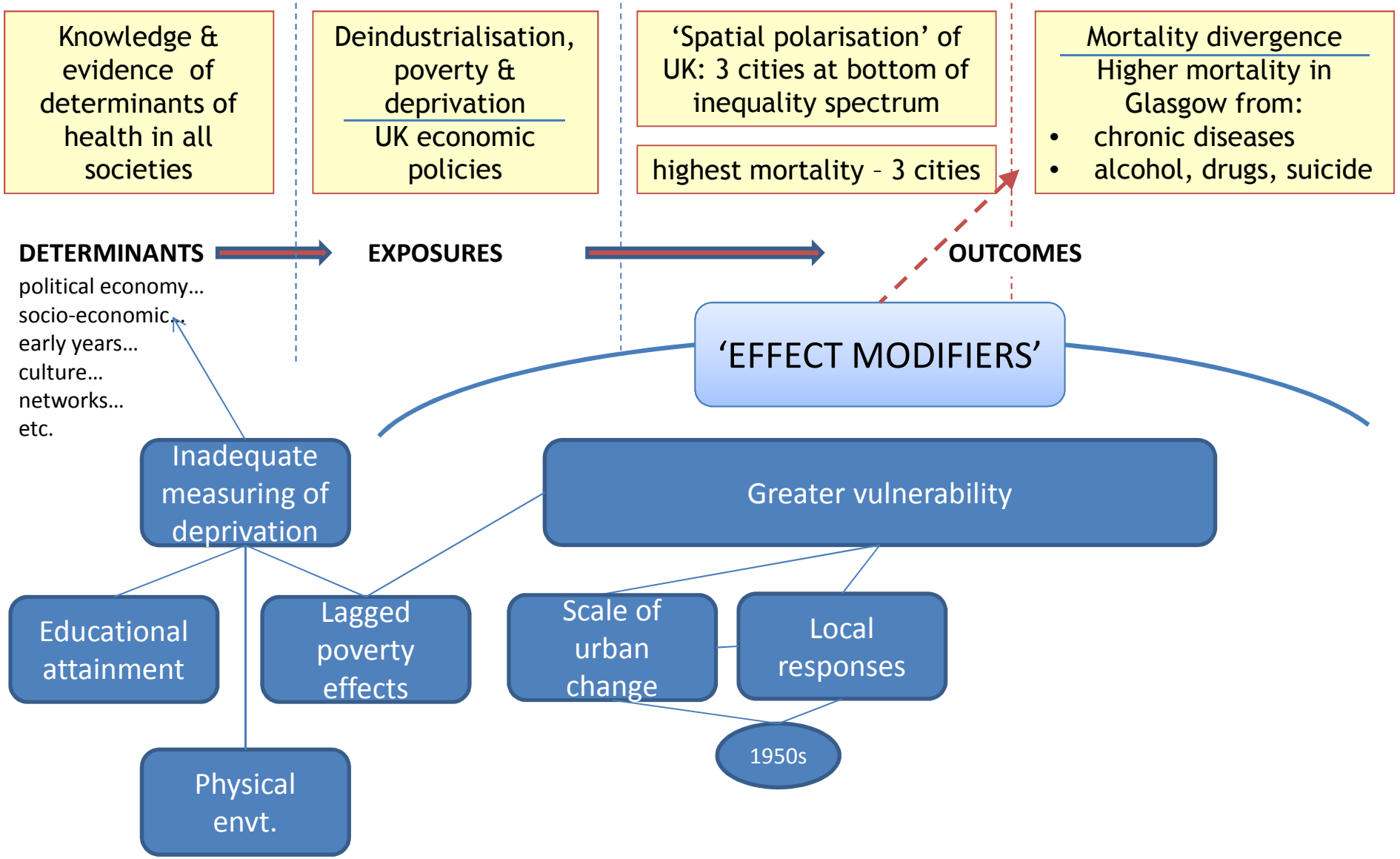
Vulnerability…

- Concept used in field of disaster mitigation (e.g. disasters being 'socially determined')…
- …but applied to public health by Galea and colleagues:
  - **population health** = '**underlying vulnerabilities**' (poverty, income distribution) +'**capacities**' (protective factors) + **response to stressors** (e.g. economic stressors)
- Indeed: 'There might be tremendous insight into the health of populations gained by studying **why populations that share underlying vulnerabilities, such as poverty, often have quite different health outcomes'** (Galea et al 2005)
- Useful way of understanding:
  - lagged/life-course impacts
  - hidden social factors (vulnerabilities)
  - important protective factors (capacities) (discussed later).
- Importantly, vulnerability extended across the whole population (e.g. not just the poorest)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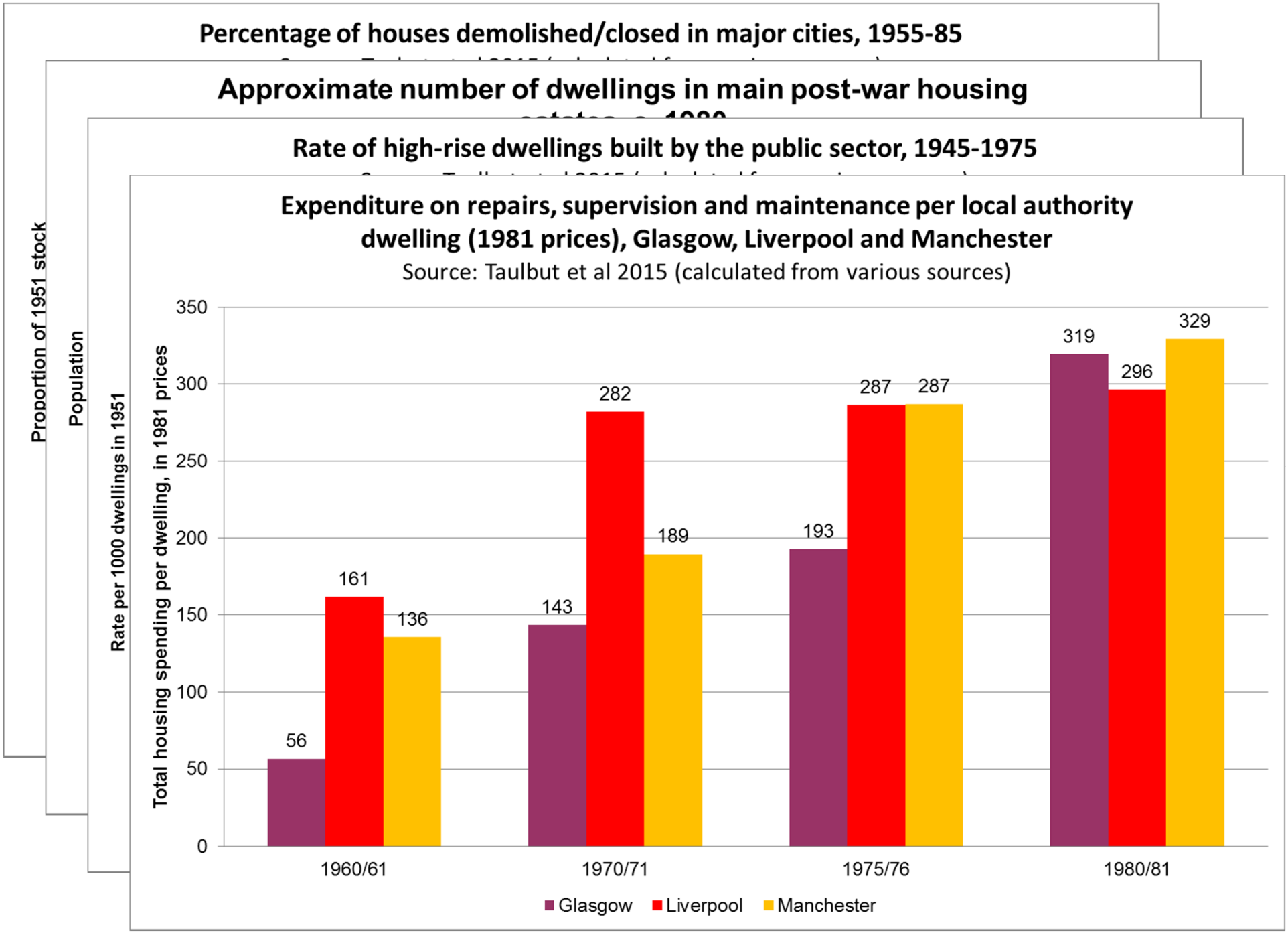
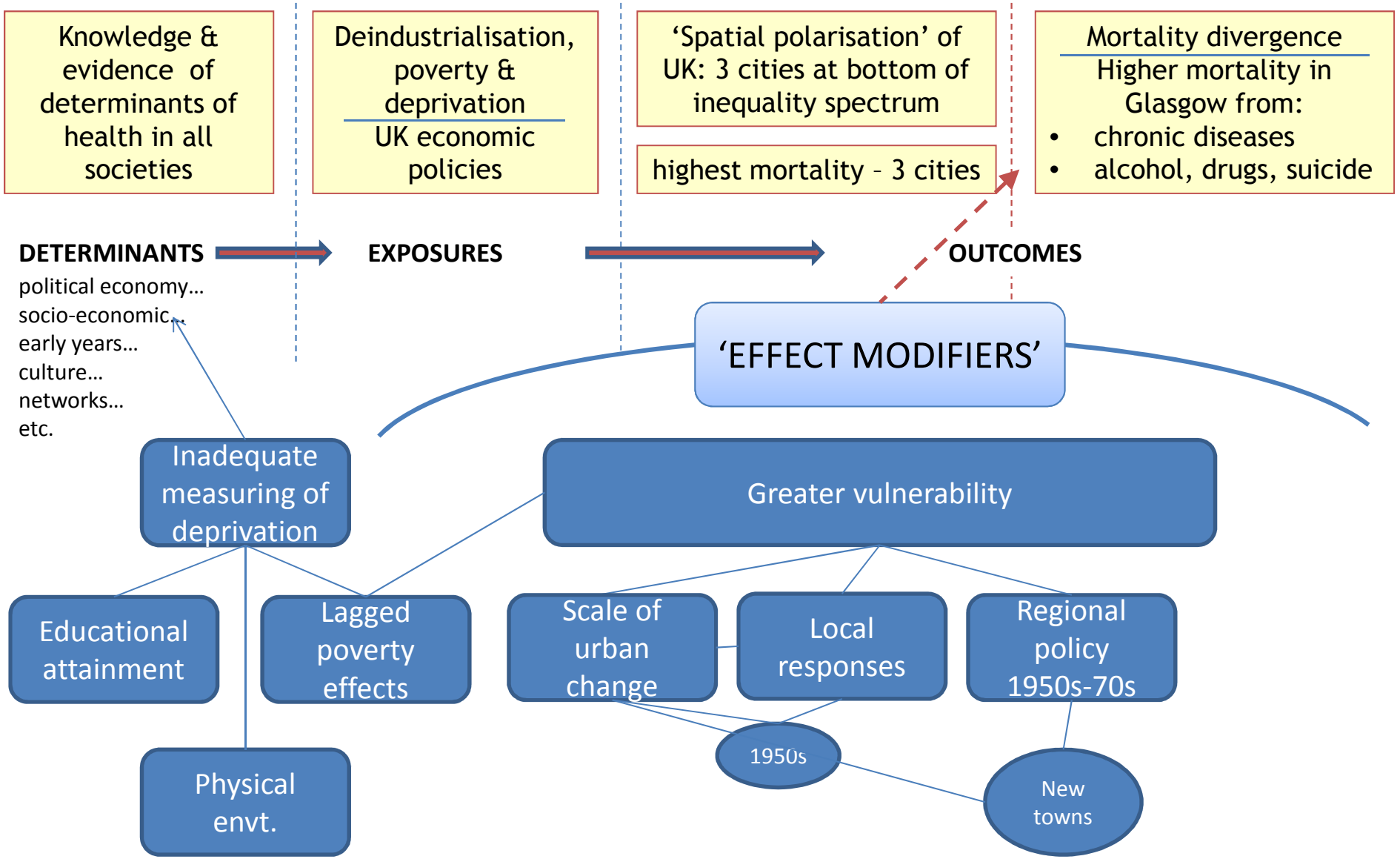

Percentage of houses demolished/closed in major cities, 1955-85
Approximate number of dwellings in main post-war housing
Rate of high-rise dwellings built by the public sector, 1945-1975
Proportion of 1951 stock
Population
Rate per 1000 dwellings in 1951
Expenditure on repairs, supervision and maintenance per local authority dwelling (1981 prices), Glasgow, Liverpool and Manchester
Source: Taulbut et al 2015 (calculated from various sources)
Total housing spending per dwelling, in 1981 prices
350
300
250
200
150
100
50
0
56
161
136
143
282
189
193
287
287
319
296
329
1960/61
1970/71
1975/76
1980/81
Glasgow
Liverpool
Manchester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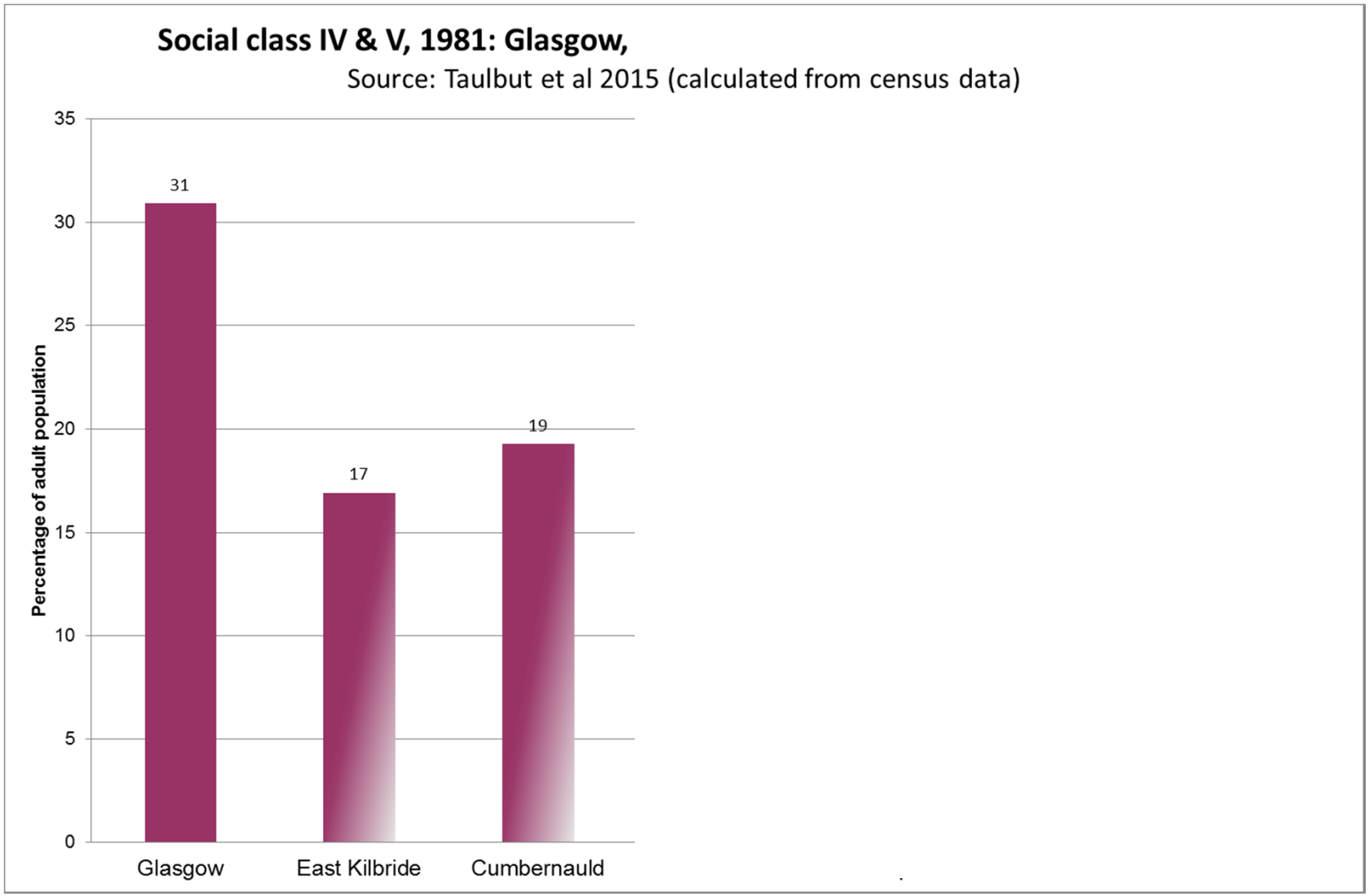
1950s
New towns

Regional policy post-WWII

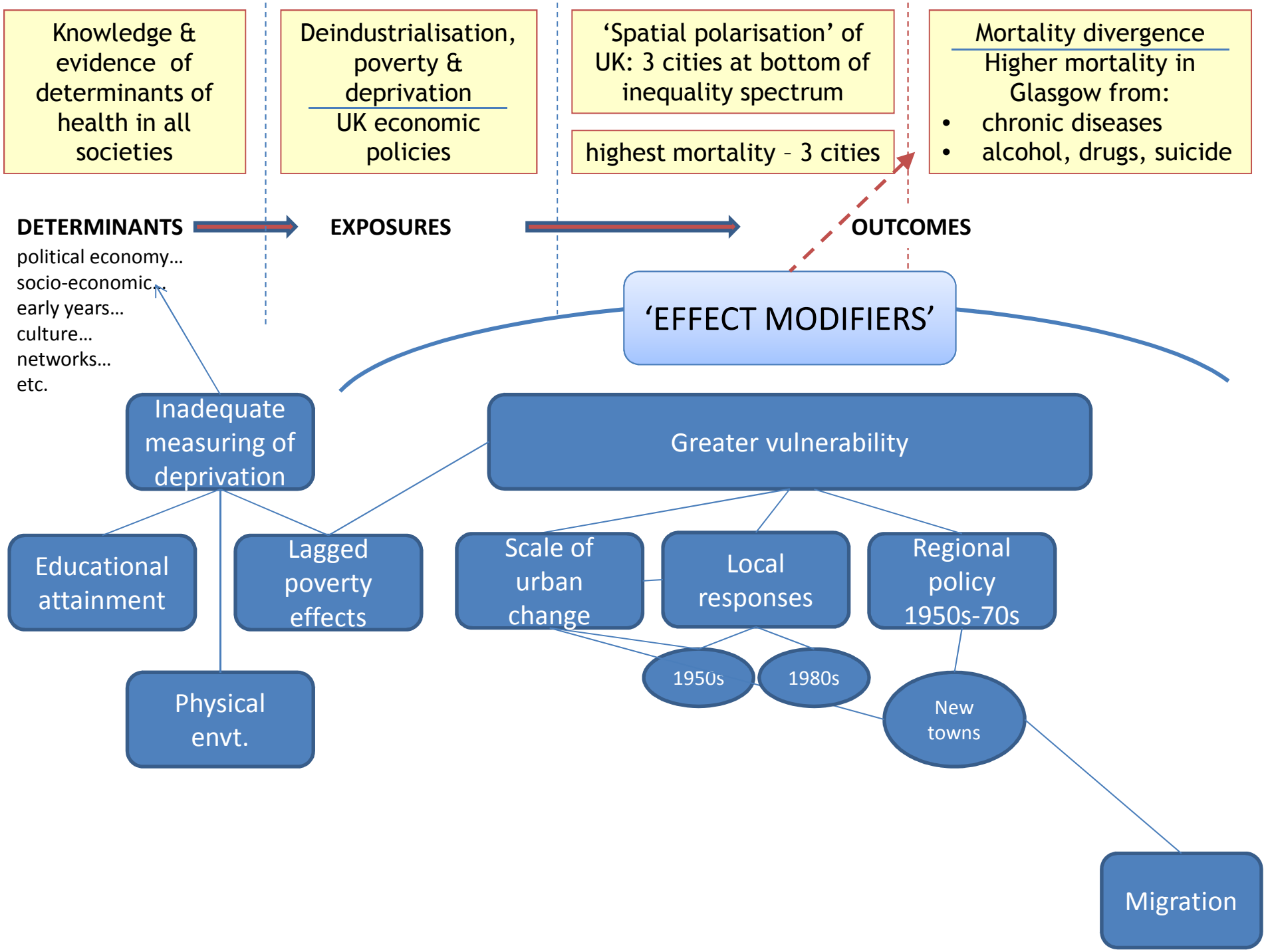
- Extensive analyses of Scottish Office (and other) archives (Chik Collins & Ian Levitt)
- Scottish Office recognition of deep-rooted post-WWII housing problems
- No confidence that local government could solve it
- Policies to ‘sacrifice’ the city – to relocate industry and skilled population E.g. socially selective New Towns policy

Regional policy post-WWII



Regional policy post-WWII

- Policy extended & expedited during 1950s-70s despite awareness of consequences (socio-economic and health) for the city:
- "it is true that today we are getting rid of some of our best tenants and are leaving ourselves with this gap, **and we are losing the capacity for leadership in the very communities which are creating the social problems**" (Hugh Brown, MP, 1966)
- "Glasgow is in a socially… [and] economically dangerous position. The position is becoming worse because, although the rate of population reduction … is acceptable, **the manner of it is destined within a decade or so to produce a seriously unbalanced population with a very high proportion of the old, the very poor and the almost unemployable** … the above factors amount to a very powerful case for drastic action to reverse present trends within the city. [But] there is an immediate question as to how much room exists for manoeuvre." (1971 SDD Reflective Review of the impact of overspill policy on Glasgow, "The Glasgow Crisis").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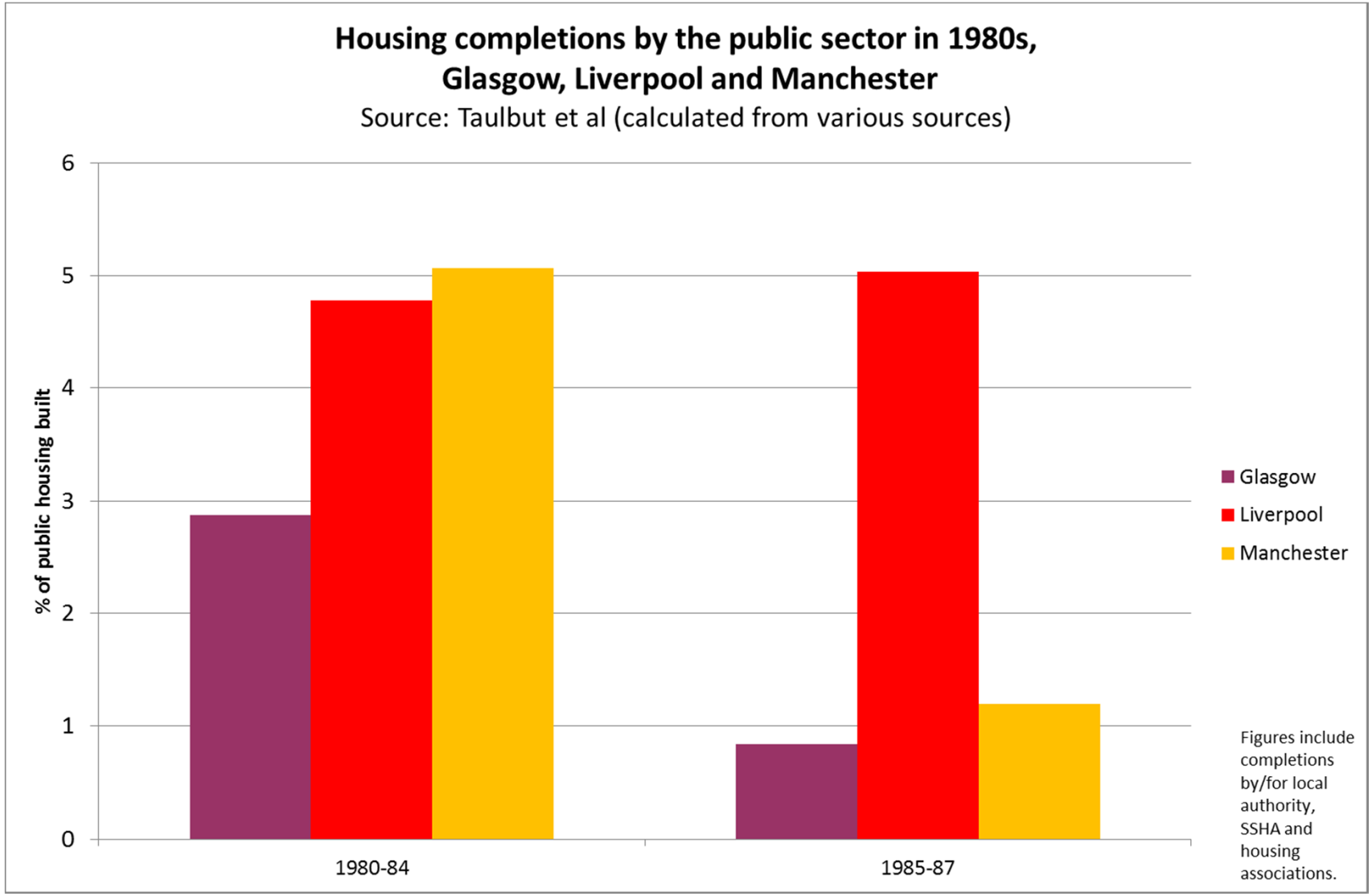
Local response 1980s

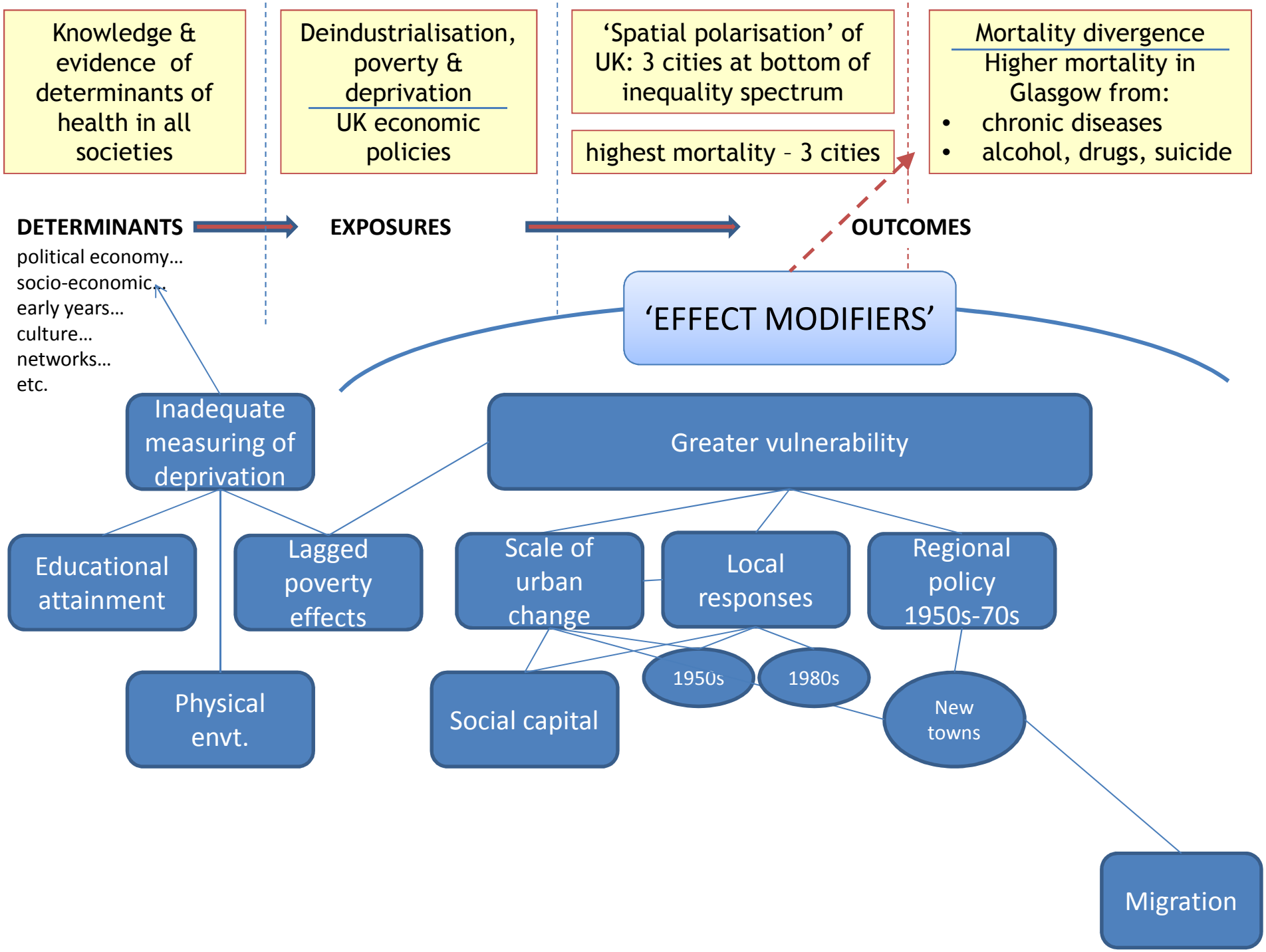


Local response 1980s

- Liverpool:
  - "Labour's radical rhetoric **struck a chord with despondent voters**. Support for the council reflected **a groundswell of popular opinion against the government**." (Carmichael, 1995)
  - "There is no doubt at all that the politics of the financial crisis **electrified the people** and **alerted them** to its problems in a way that was simply never there before. Everyone knew about it and **everyone had an opinion**." (Lane 1987)
- Glasgow:
  - "…the peripheral areas of Glasgow are to some extent **politically disarmed**. Nor is there necessarily a serious danger of social disorder…" (Keating 1988)

Local response 1980s

- Summary of difference between Glasgow and Liverpool:
  - "In Liverpool **the actions of the council** in the mid-1980s were, for all the controversy associated with them, **genuinely popular** and apparently **invigorating**; even for those who disagreed with them, there was a **meaningful discussion about the needs of the city**, the damage being done by central government and how best to address all of that.
  - "In Glasgow, however, there was **little scope for that**, and in fact there seems to have been an ongoing process of **managing and manipulating communities** in ways which **compounded their problems** and led, perhaps, to even more damaging outcomes – **breaking down fragile bonds of community** and turning frustration into something rather more dangerous." (Collins. 2015)
- So, clear links to 'social capital'…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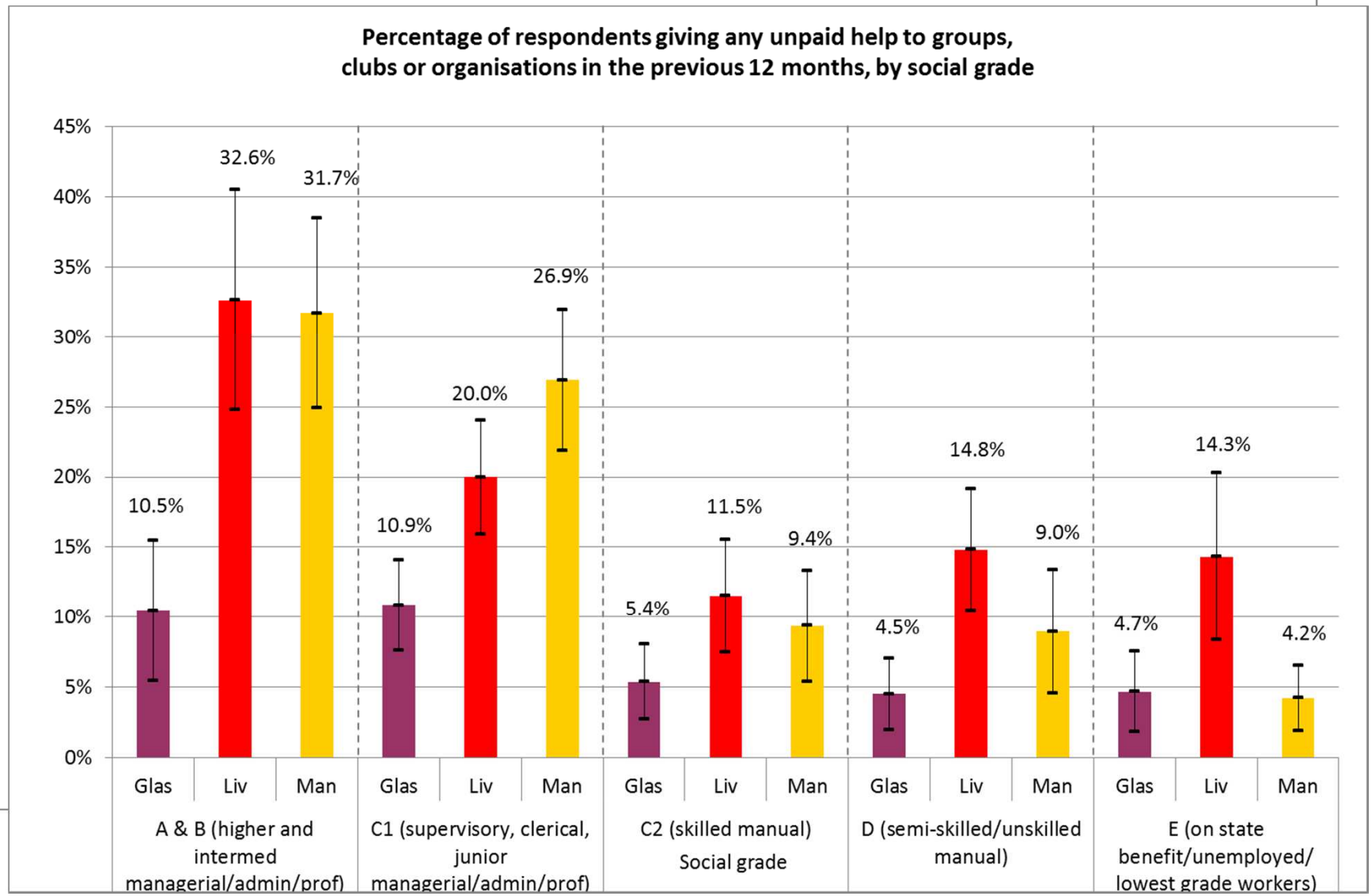
‘Social capital’

- Not everyone’s favourite description of the concept…
- Better: social fabric/integregation/ connectedness..??
- Lots of evidence in relation to various health outcomes including mortality
- Lots of evidence of that Liverpool especially is much ‘better’ than Glasgow…

Percentage of respondents reporting that most people in their neighbourhood can be trusted

Percentage of respondents who exchange favours with people who live nearby

Percentage of respondents giving any unpaid help to groups, clubs or organisations in the previous 12 months

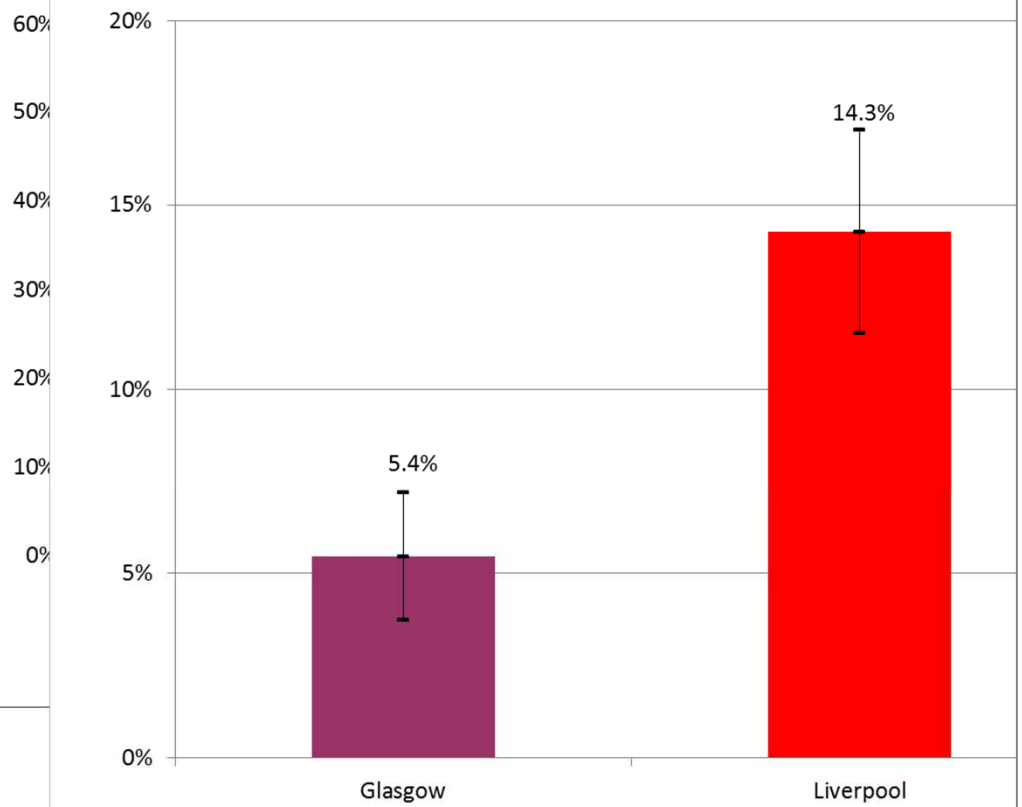


Percentage of respondents who agree/strongly agree that the UK government is 'undermining this city', by deprivation quintile

80%
70%
60%
50%
40%
30%
20%
10%
0%

Percentage of respondents who took part in public demonstrations about government policie

20%
15%
10%
5%
0%



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Suicide: the spatial and social components of despair in Britain 1980–2000

Danny Dorling* and David Gunnell†

In this paper we show that, by accounting for the varying influence of just three area indicators of social isolation, it is possible to predict the number of deaths due to suicide and undetermined injuries (most of which are suicides) across a great many areas remarkably closely. The exceptions to this model suggest that in a few unique areas of the country other local, often historical and cultural or intrinsically geographical factors matter also. These findings of the general predictability of suicide matter because suicide is such a common cause of death, particularly for the young. Between 1 January 1981 and 31 December 2000, the underlying cause of the deaths of 130 000 people in Britain were recorded as being directly due to suicide, or in all probability being due to suicide. Collectively, these thousands of personal stories are brought together here to show how a pattern of despair in Britain over this period was spread across the country, affecting different places and different groups in society to differing extents over changing times. The changing geography of despair can be shown to be largely the product of changing economic, social and demographic geographies. This paper is concerned with determining the extent to which the stories of suicide in Britain were more than the sum of thousands of individual acts of misery and the extent to which they reflected the changing social structure of the country. Quantitative analysis is used to identify possible key trends with a more qualitative set of interpretations placed on the possible meanings of these findings. The paper concludes by speculating on how current social trends may influence the future map of the extremes of despair in Britain.

key words Britain suicide modelling social isolation integration

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Introduction

Suicide is amongst the most enduring subjects of long-term interest in the social sciences. Wide variations in recorded suicide rates found between different countries were used to provide one of the first examples of the potential effects of social organization on individuals and of how individual behaviour can be conditioned by the nature of the society in which each individual lives (Morselli 1881; Durkheim 1897). Suicide rates are now monitored as a key government health target (Department of Health 1999) both because they are thought to provide an indication of population mental health and, as for some groups in the population (young men), because they have been rising in recent years. Within human geography, however, the study of suicide has been relatively limited. Suicide is a harrowing and generally very rare event and each individual story will be complex, so forming a general view from the family and friends of victims of suicide is very difficult. Rare cases, particularly those involving political intrigue (such as the cases of Stephen Ward and David Kelly) make the headlines. Most cases receive little attention, but it is the bulk of

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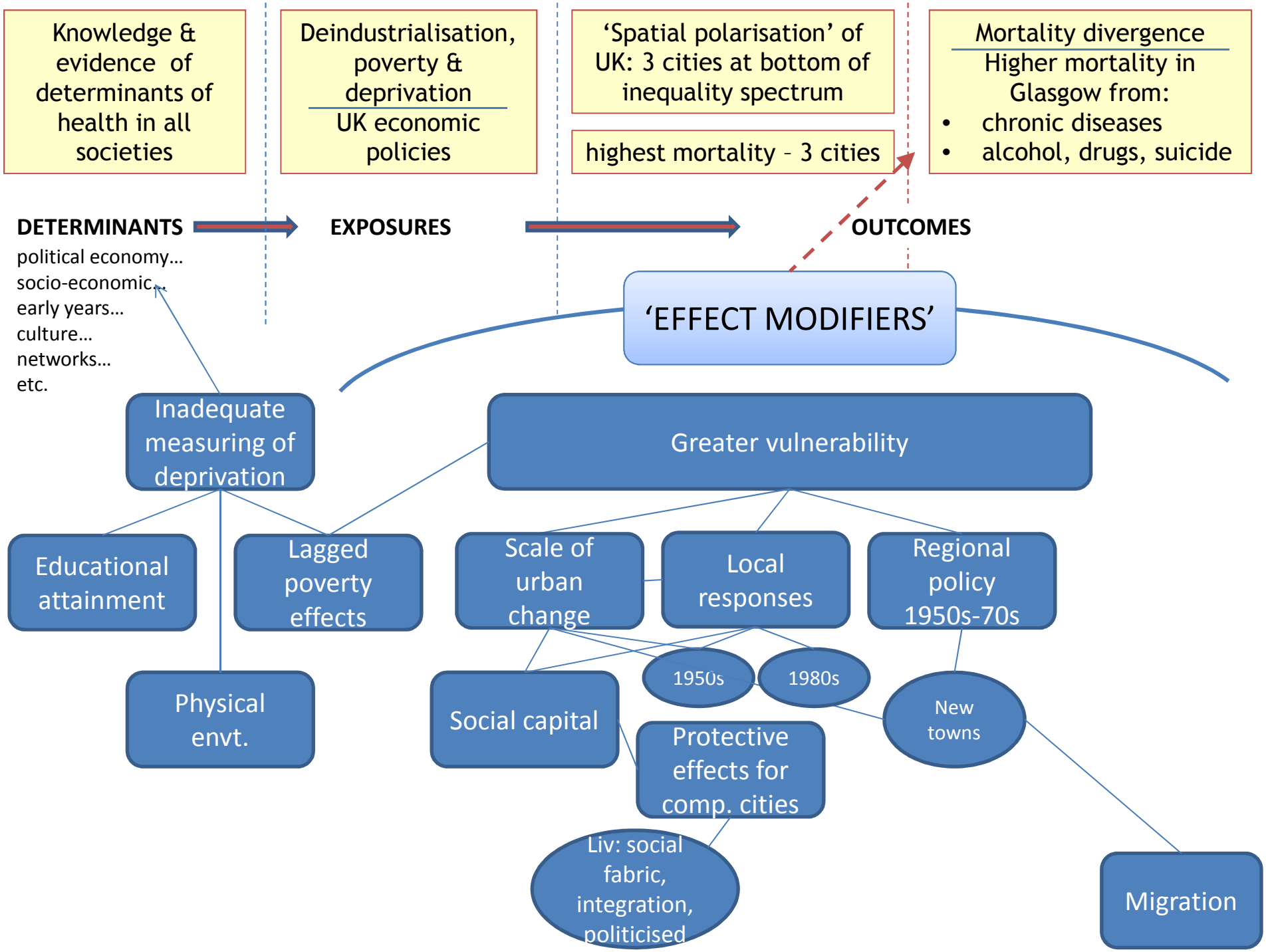
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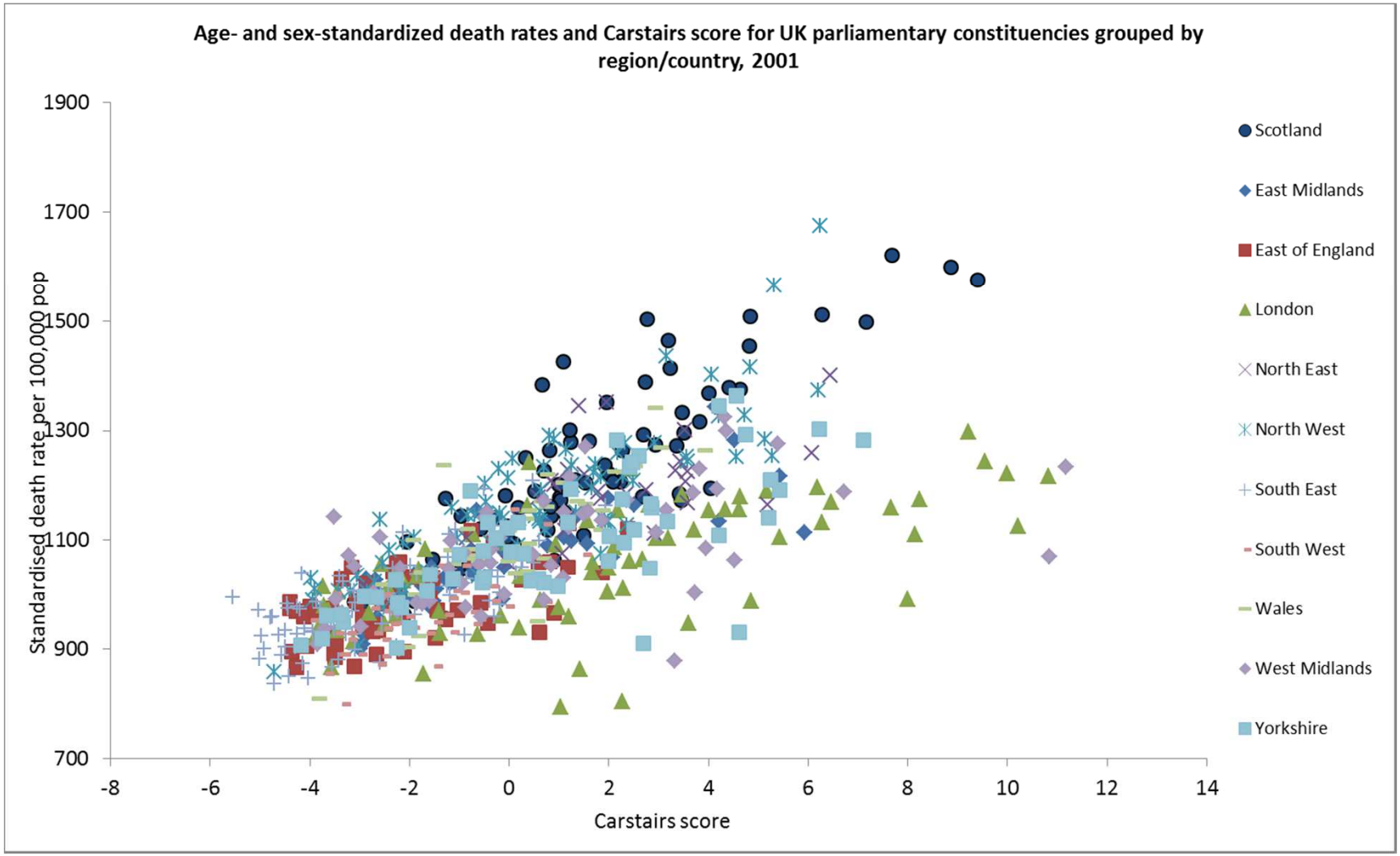
Protective effects for comp. cities
Liv: social fabric, integration, politicised
Migration

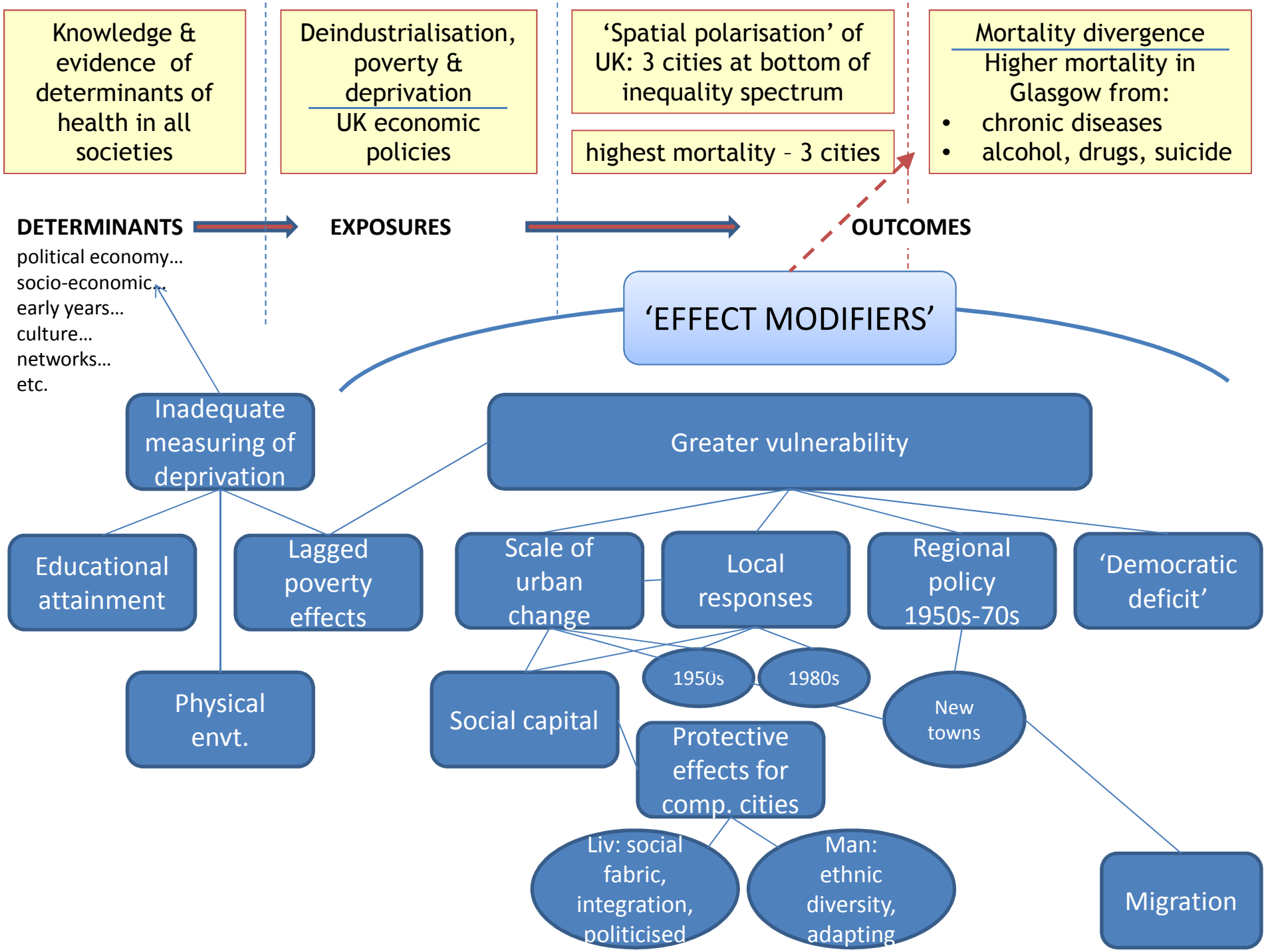
Protective effects

- Liverpool:
  - Social fabric/integration/solidarity (“capital”!)
- Manchester
  - Ethnic diversity (e.g. see Tunstall et al 2011)
  - Adaptation to change: “**cultural adaptation** to more mobile lifestyles well **suited to the changing nature of employment opportunity in a post-industrial economy**” (Seaman & Edgar, 2015)

Carstairs deprivation & mortality

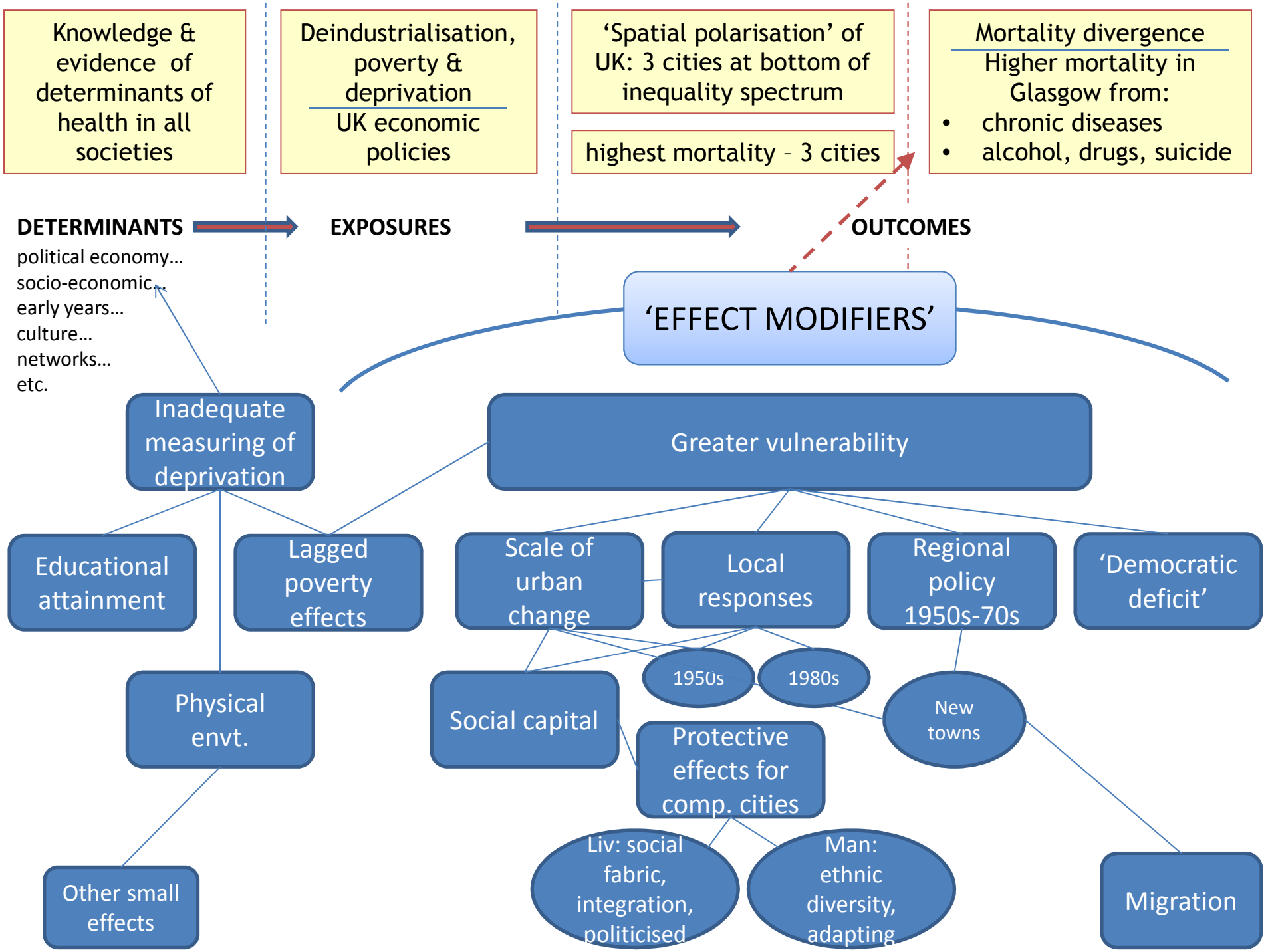


Source: Tunstall et al, 2011


Knowledge & evidence of determinants of health in all societies
Deindustrialisation, poverty & deprivation
UK economic policies
'Spatial polarisation' of UK: 3 cities at bottom of inequality spectrum
highest mortality – 3 cities
Mortality divergence
Higher mortality in Glasgow from:
• chronic diseases
• alcohol, drugs, suicide
DETERMINANTS
EXPOSURES
OUTCOMES
political economy…
socio-economic…
early years…
culture…
networks…
etc.
'EFFECT MODIFIERS'
Inadequate measuring of deprivation
Greater vulnerability
Educational attainment
Lagged poverty effects
Scale of urban change
Local responses
Regional policy 1950s-70s
'Democratic deficit'
Physical envt.
Social capital
1950s
1980s
New towns
Protective effects for comp. cities
Liv: social fabric, integration, politicised
Man: ethnic diversity, adapting
Migration

‘Democratic deficit’

- 1979 onwards: feelings of disempowerment, lack of control (psycho-social risk factors etc.)
- Westminster government not voted for in Scotland
- No modern day parallel then..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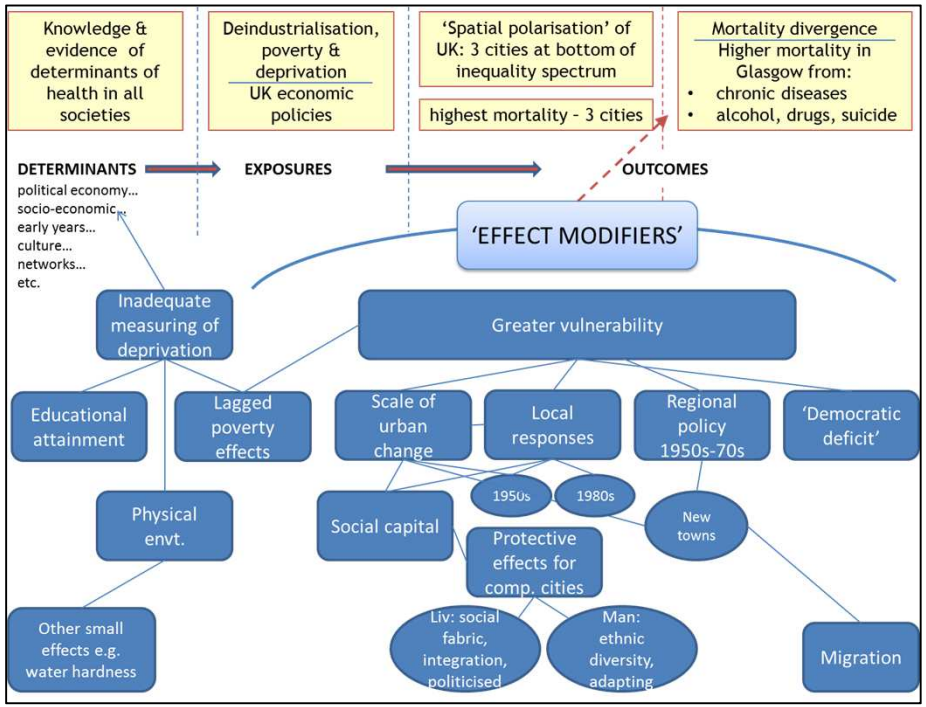
Physical envt.
Social capital
1950s
1980s
New towns
Protective effects for comp. cities
Other small effects
Liv: social fabric, integration, politicised
Man: ethnic diversity, adapting
Migration

Building a model for Glasgow

- Inadequate measurement of the lived experience of poverty and deprivation, including..
- ..more adverse physical environment
- Lagged effects of aspects of deprivation
- Greater vulnerability in Glasgow to political and economic exposures including:
  - Greater scale of urban change
  - Local and regional responses to post-war conditions, and 1980s economic policies
- With impacts (negative in Glasgow, positive in Liverpool) on social capital (aka fabric)
- Protective effects for both Liverpool and Manchester
- Range of other factors with smaller impacts

Building a model for Scotland



- I have run out of time, but…
- …everything in first model is relevant to Scotland model because of the impact of Glasgow/WCS on national outcomes:
  - >40% of the population reside in the Glasgow/West Central Scotland (WCS) conurbation
- To this we add/highlight issues around:
  - Lagged effects of poverty & deindustrialisation (more relevant nationally)
  - More unknowns (e.g. local government responses elsewhere)
  - Other factors (including culturally influenced 'downstream' factors e.g. diet)

Important to note

- Hypotheses included in the models evidenced based
- No supporting evidence for ones not included (e.g. optimism, sectarianism etc)
- **Lots of questions remain…**
- …but on the basis of all the evidence, we think these are the most likely contributory factors

Implications & responses

- Still consulting on…
- …but likely to include:
  - Need to understand unmeasured aspects of deprivation
  - Need to mitigate against effects of future ‘vulnerabilities’ (including ‘welfare reform’)
  - Opposing vulnerability: encouraging greater democratic participation and control
  - Roles for national (Scottish) and local governments in redistribution of income and resources
- **And lots more under discussion/review**
- **But NB**: all actions must be entwined with ever more urgent actions to:
  - Address poverty and deprivation
  - Narrow the widening gap in wealth & health

Next steps

- Modifications to models following consultation
- Further consultations/discussions re. appropriate responses
- Report soon/very soon…

Why the Scots die younger: an updated synthesis

David Walsh & Gerry McCartney

September 2015

Glasgow Centre for Population Health

NHS Health Scotland