



Institute
and Faculty
of Actuaries

THE SCOTLAND EFFECT: IS THERE ONE AND WHY DOES IT MATTER?

Glyn Bradley FIA
Susan Hanlon FFA



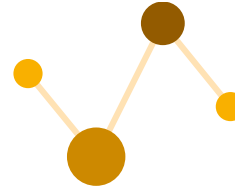
15 June 2017

THE SCOTLAND EFFECT

IS THERE ONE AND WHY DOES IT MATTER?



NATIONAL
STATISTICS



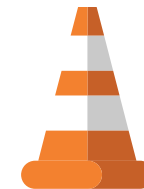
MERCER
MODEL



WHAT ARE THE
CAUSES?



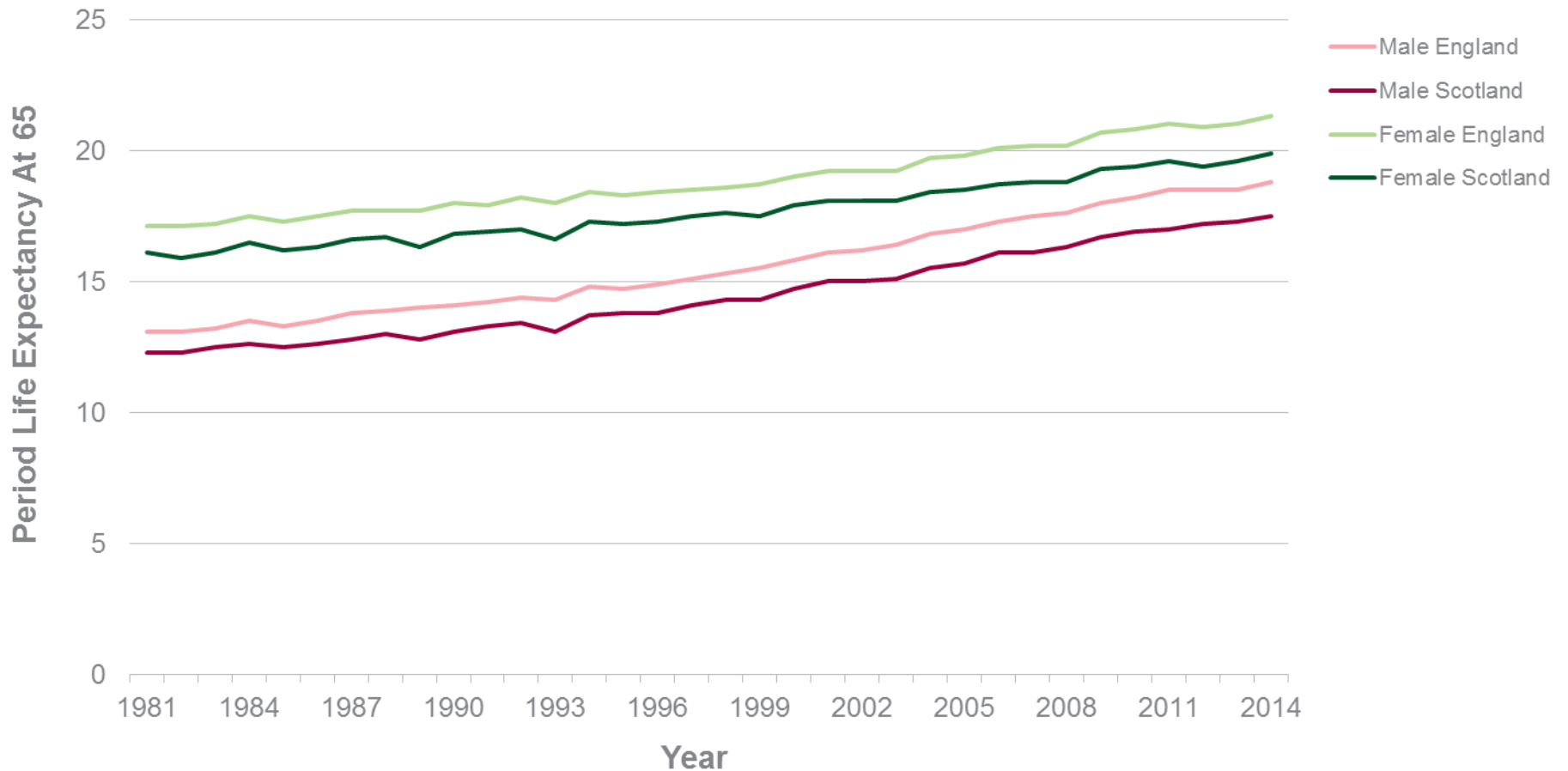
WILL THE EFFECT
PERSIST?



SO WHAT?

THE SCOTLAND EFFECT IS THERE ONE? NATIONAL STATISTICS

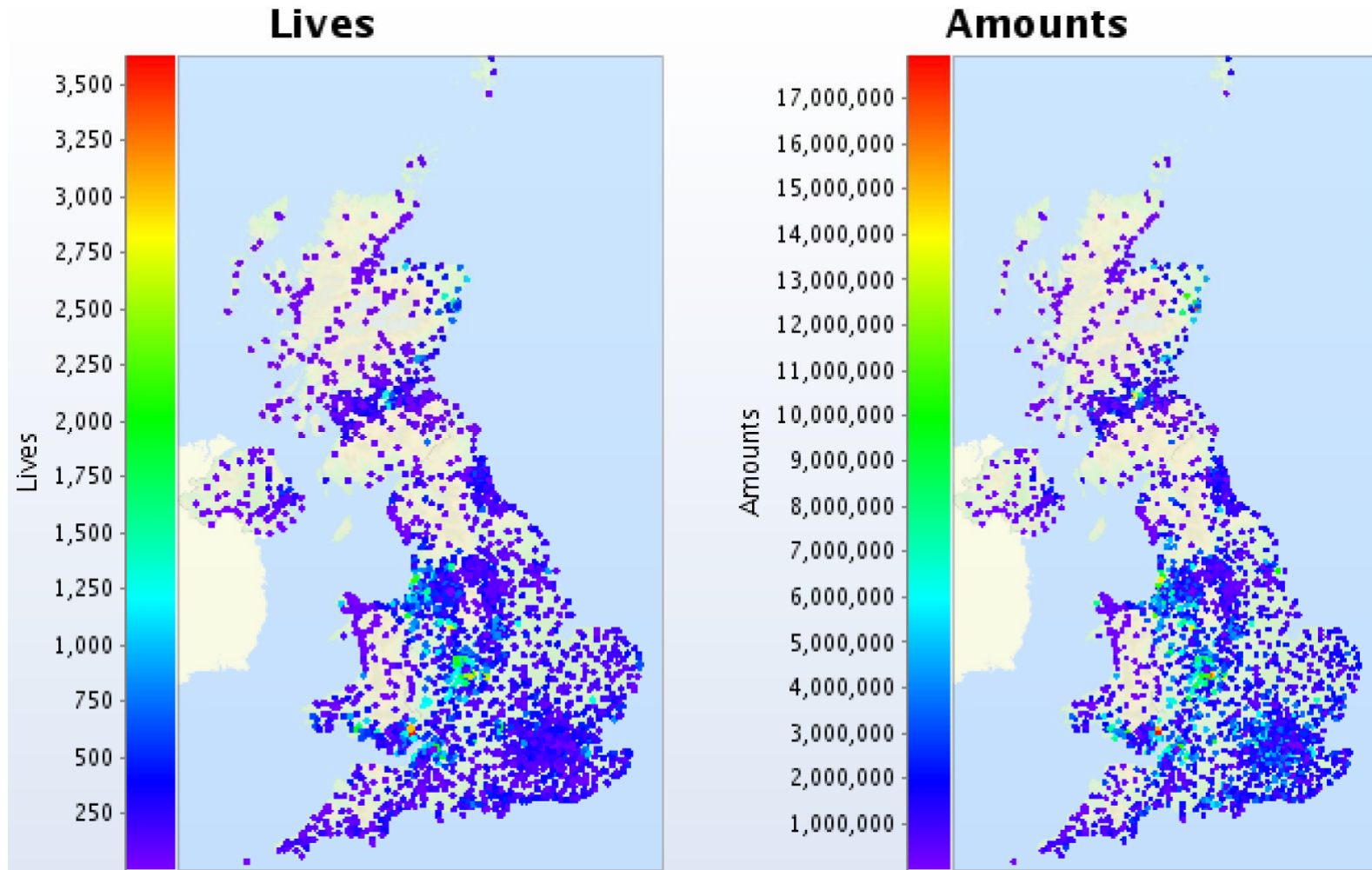
LIFE EXPECTANCY AT 65



Source: Office for National Statistics, 2014-based principal projections


THE SCOTLAND EFFECT

IS THERE ONE? MERCER MORTALITY MODEL



THE SCOTLAND EFFECT

IS THERE ONE? MERCER MORTALITY MODEL

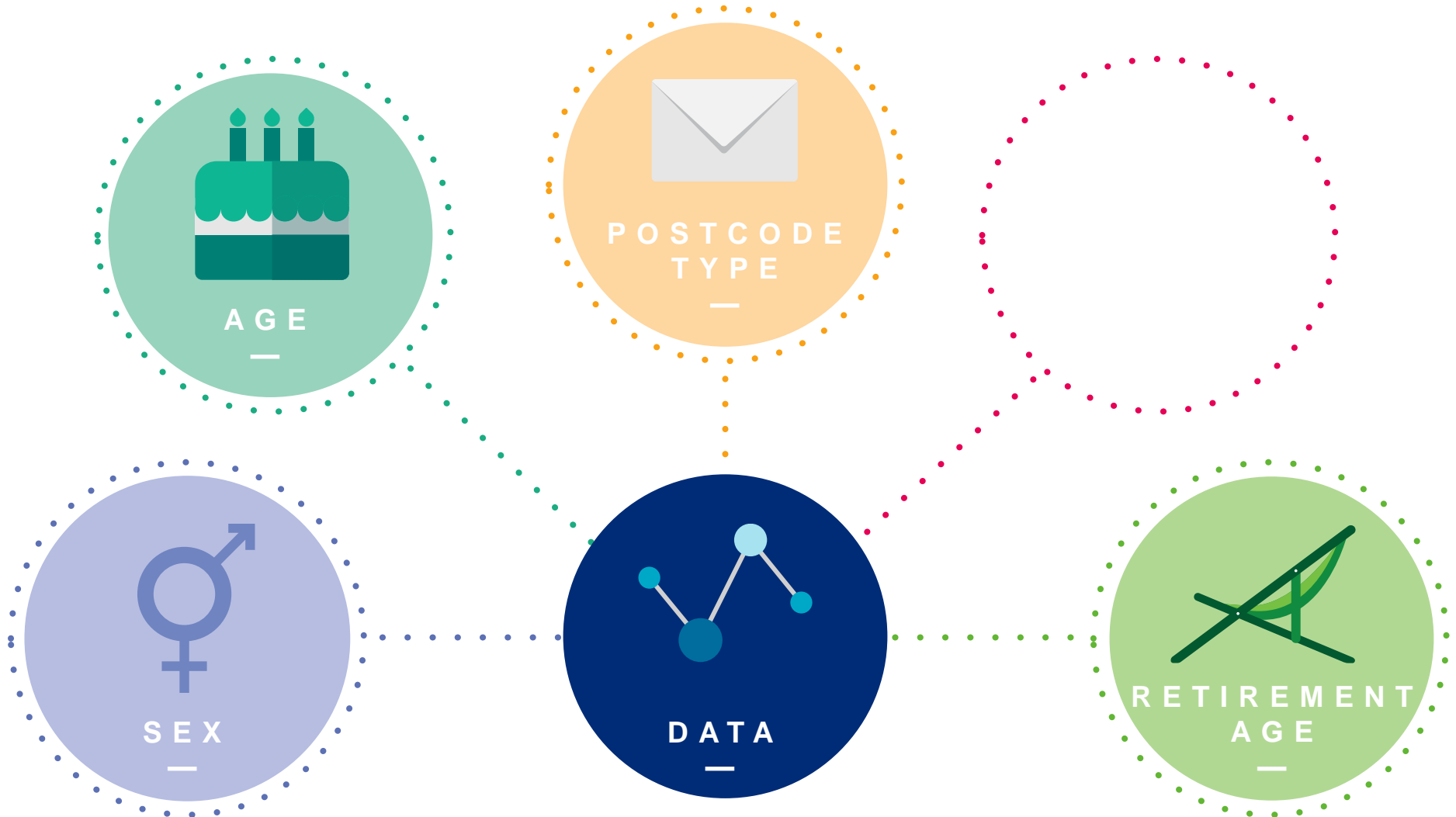

$$\mu_{x,y} = \frac{e^{\epsilon} + e^{\alpha + \beta x + \delta(y-2000)}}{1 + e^{\alpha + x + \delta(y-2000)}}$$

$$\alpha_i = \sum_j z_{i,j} \alpha_j$$

$$\beta_i = \sum_j z_{i,j} \beta_j$$

THE SCOTLAND EFFECT

IS THERE ONE? MERCER MORTALITY MODEL



THE SCOTLAND EFFECT

IS THERE ONE? MERCER MORTALITY MODEL



LOCATION

- Accessibility
- Rurality
- Urbanisation
- Islands

FINANCIAL MEASURES

- Credit behaviour
- Bad debt
- Shareholdings
- Directorships

SOCIO-ECONOMICS AND CONSUMPTION

- Occupation
- Industry
- Employment status
- Qualifications
- Socio-economic status
- Cars and transport
- Product and media

DEMOGRAPHICS

- Household demographics
- Population movement
- Health
- Background & beliefs

PROPERTY CHARACTERISTICS

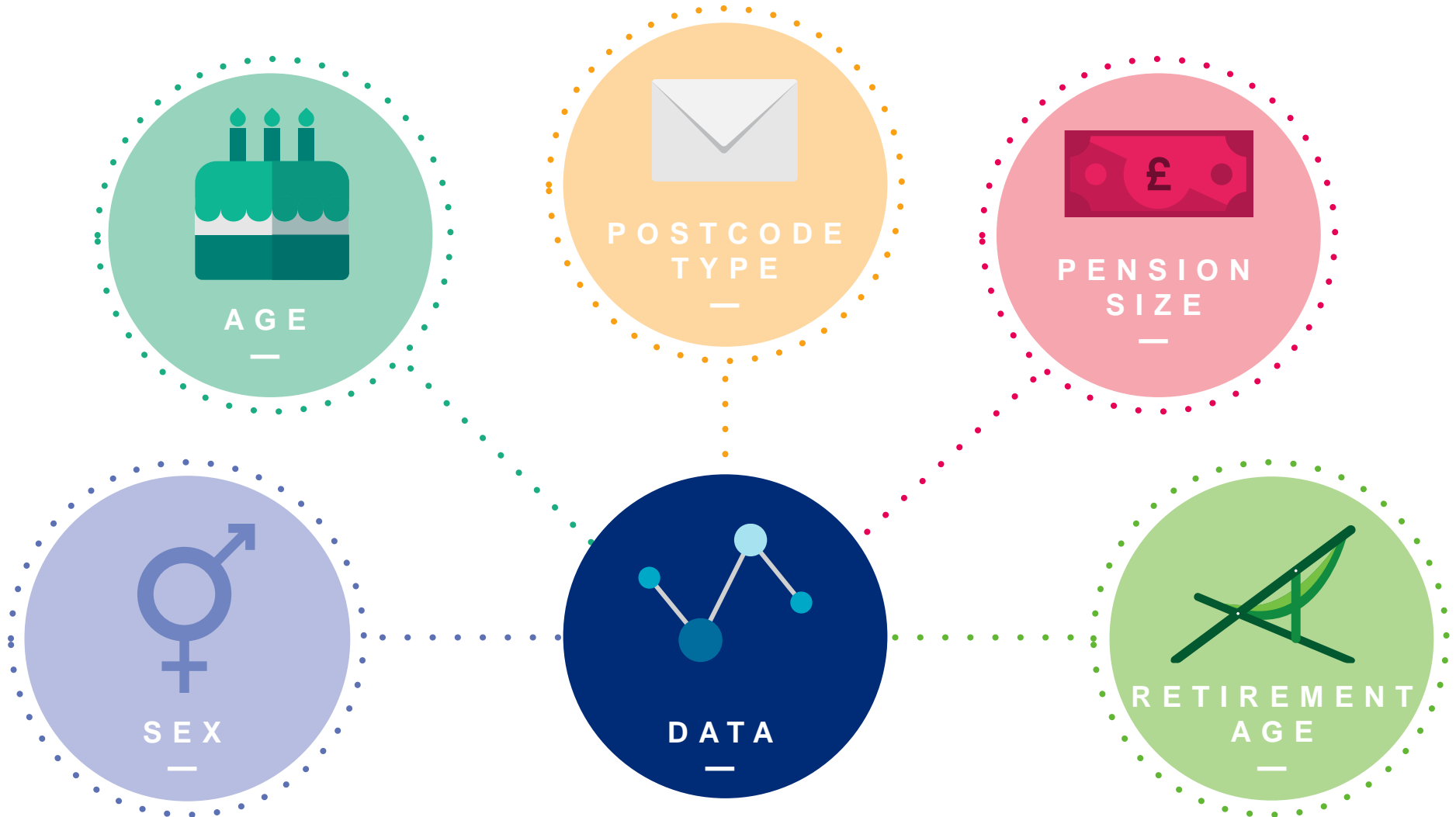
- Building
- Tenure
- Amenities
- Second residences
- Housing age

PROPERTY VALUE

- Property sales
- Property value
- Council tax band

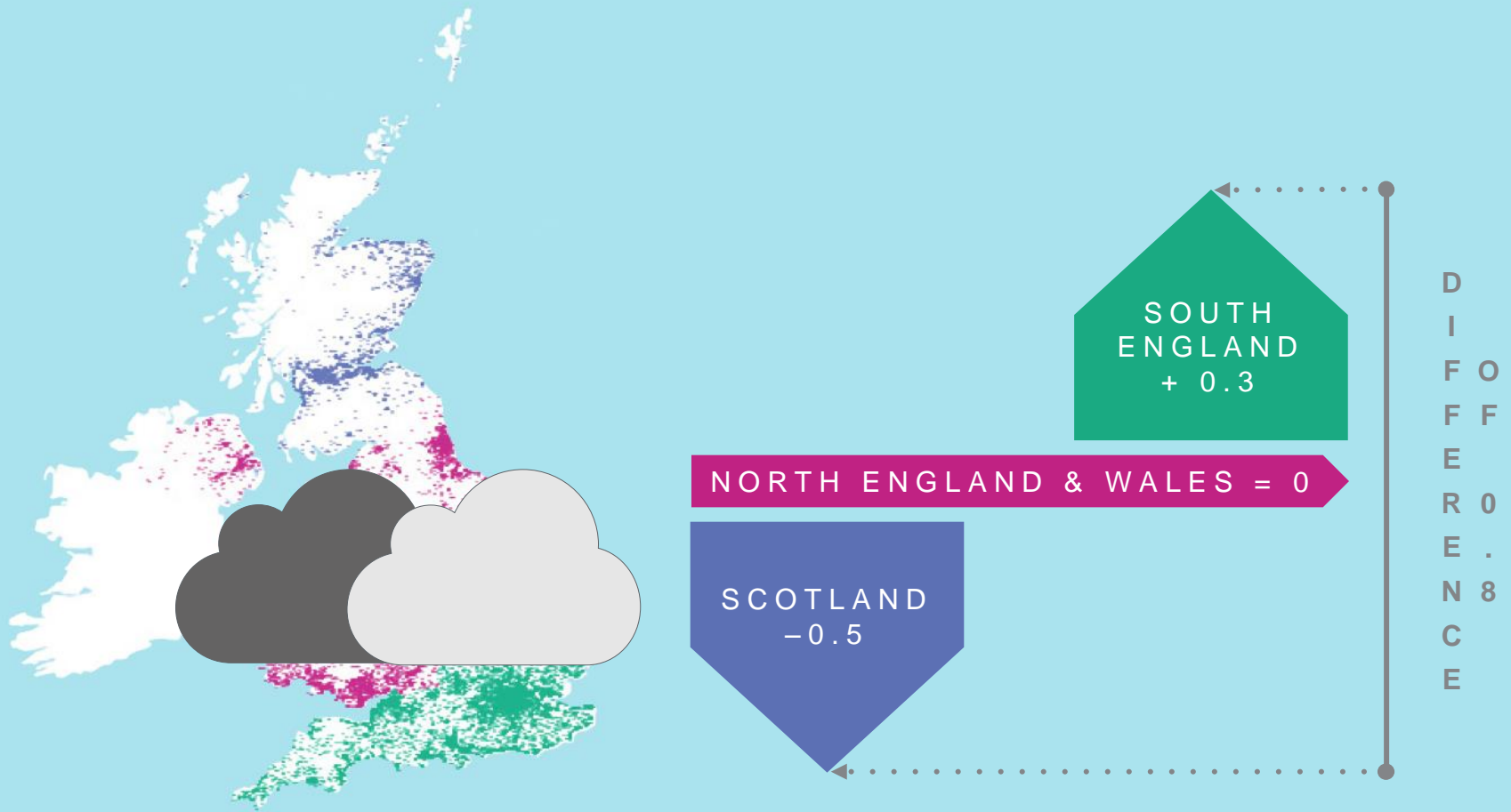
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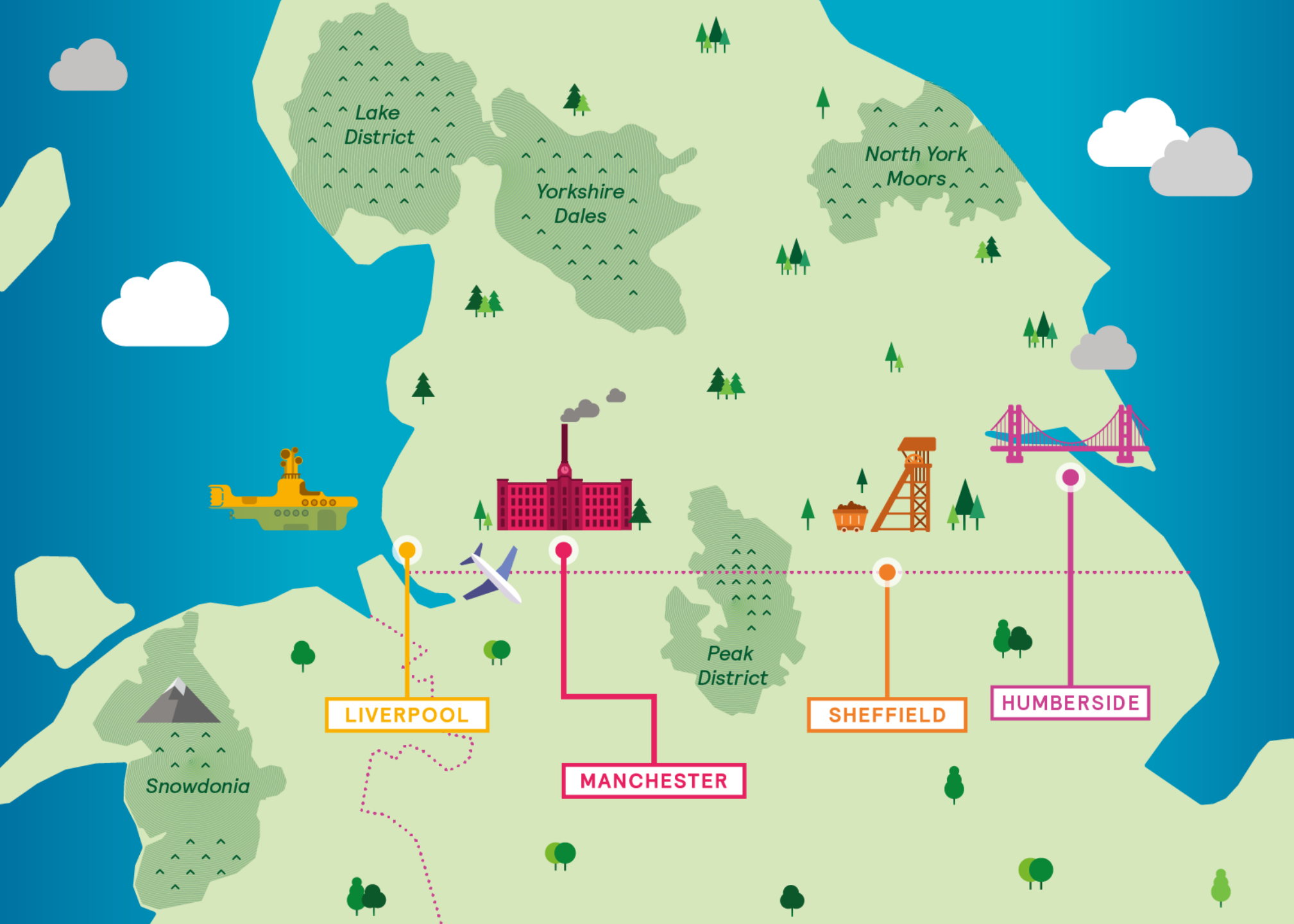
IS THERE ONE? MERCER MORTALITY MODEL



THE SCOTLAND EFFECT

IS THERE ONE? MERCER MORTALITY MODEL





Lake District

Yorkshire Dales

North York Moors

Peak District

Snowdonia

LIVERPOOL

MANCHESTER

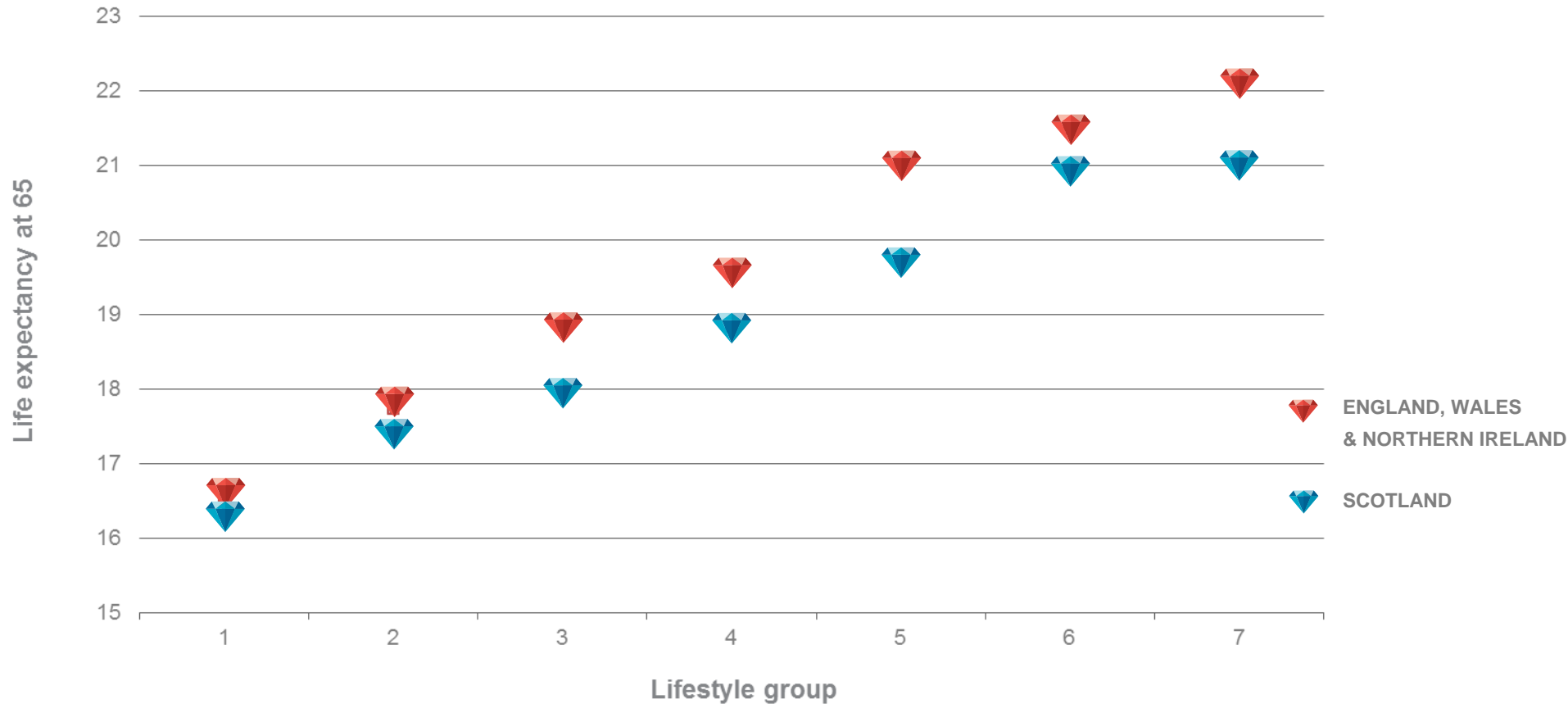
SHEFFIELD

HUMBERSIDE

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IS THERE ONE? MERCER MORTALITY MODEL

COMPARATIVE LIFE EXPECTANCIES AT 65 FOR SCOTLAND AND THE REST OF THE UK



THE SCOTLAND EFFECT

WHAT ARE THE CAUSES? DIET



THE SCOTLAND EFFECT

WHAT ARE THE CAUSES? ALCOHOL



THE SCOTLAND EFFECT

WHAT ARE THE CAUSES? SMOKING



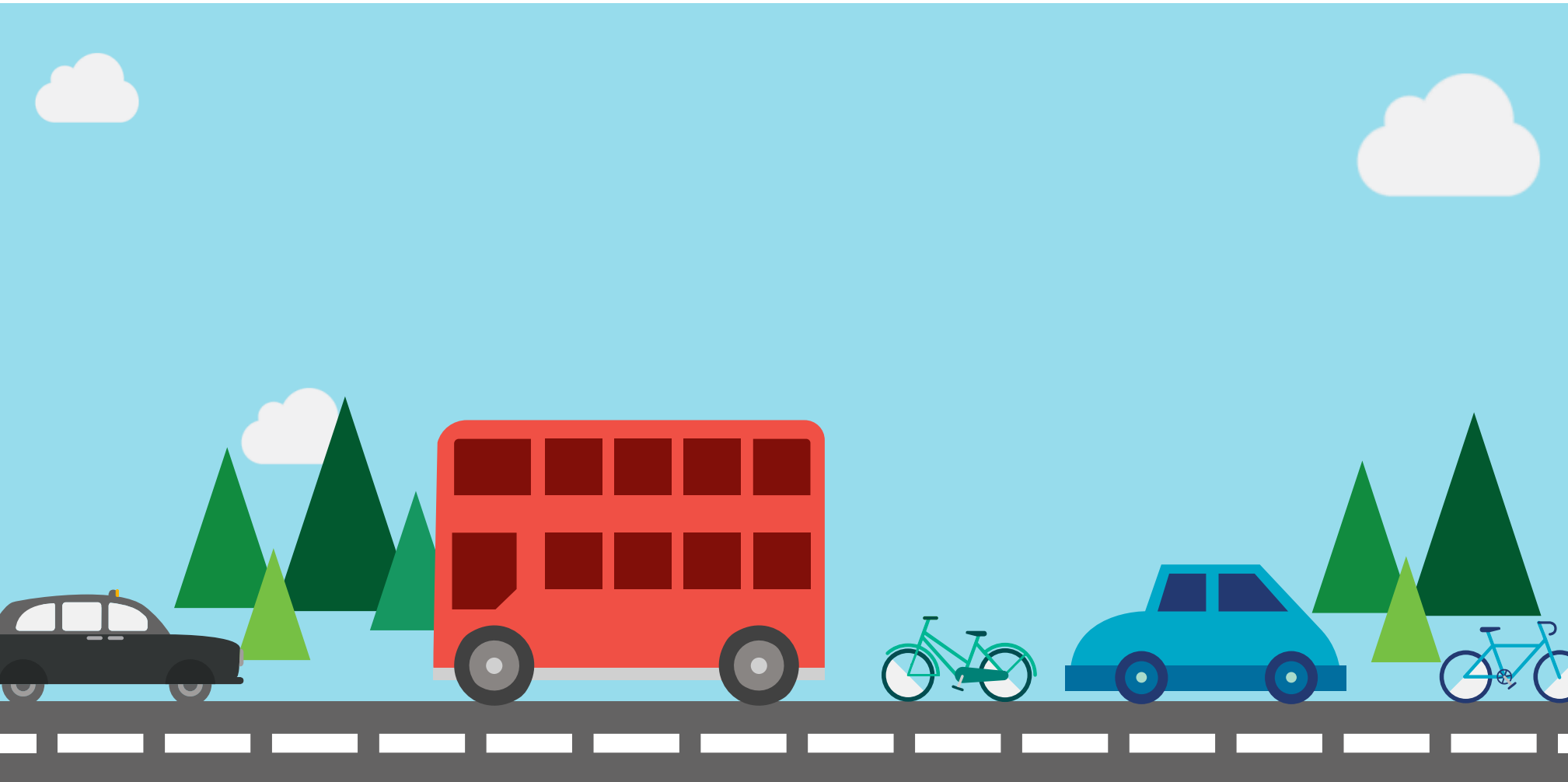
THE SCOTLAND EFFECT

WHAT ARE THE CAUSES? WEATHER



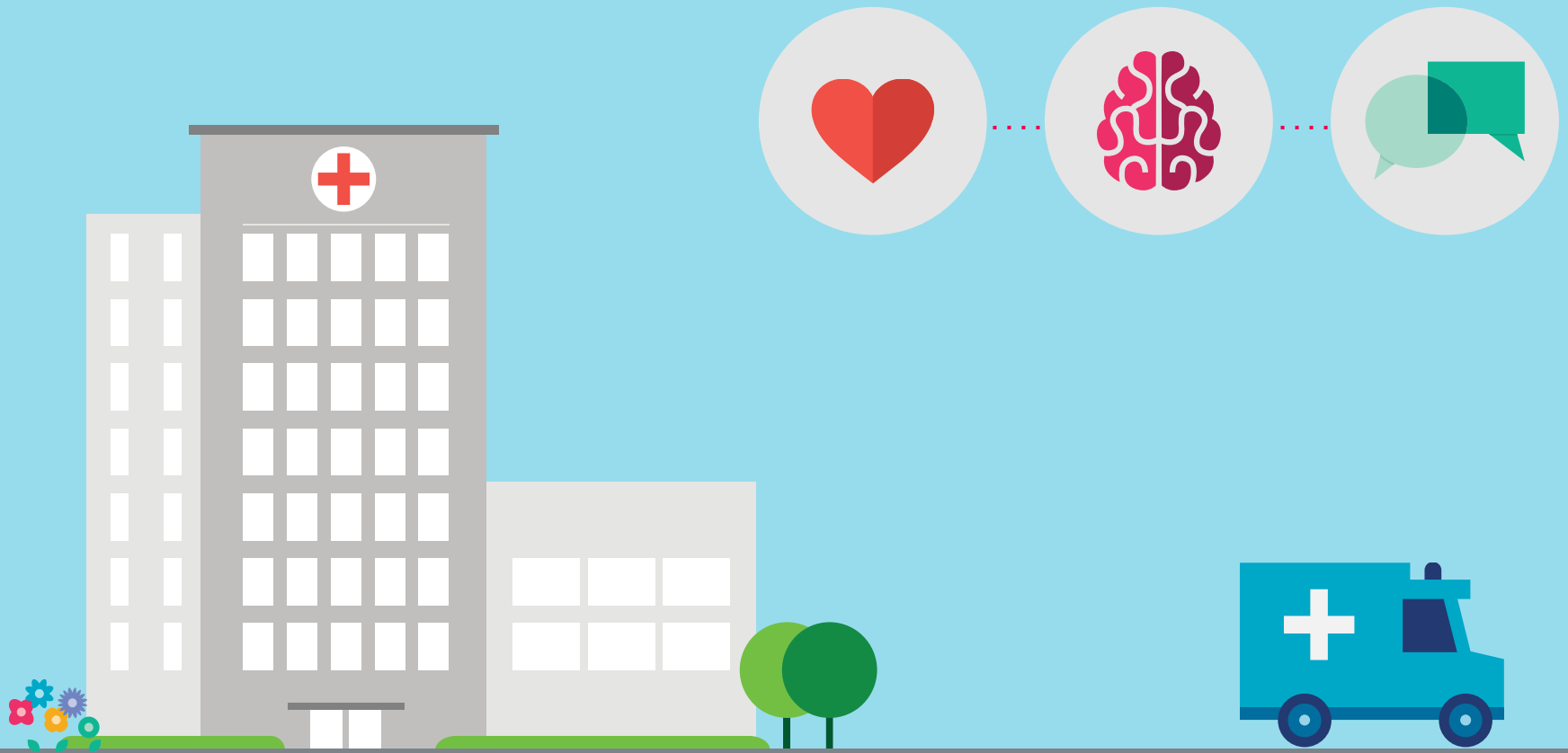
THE SCOTLAND EFFECT

WHAT ARE THE CAUSES? TRAFFIC ACCIDENTS



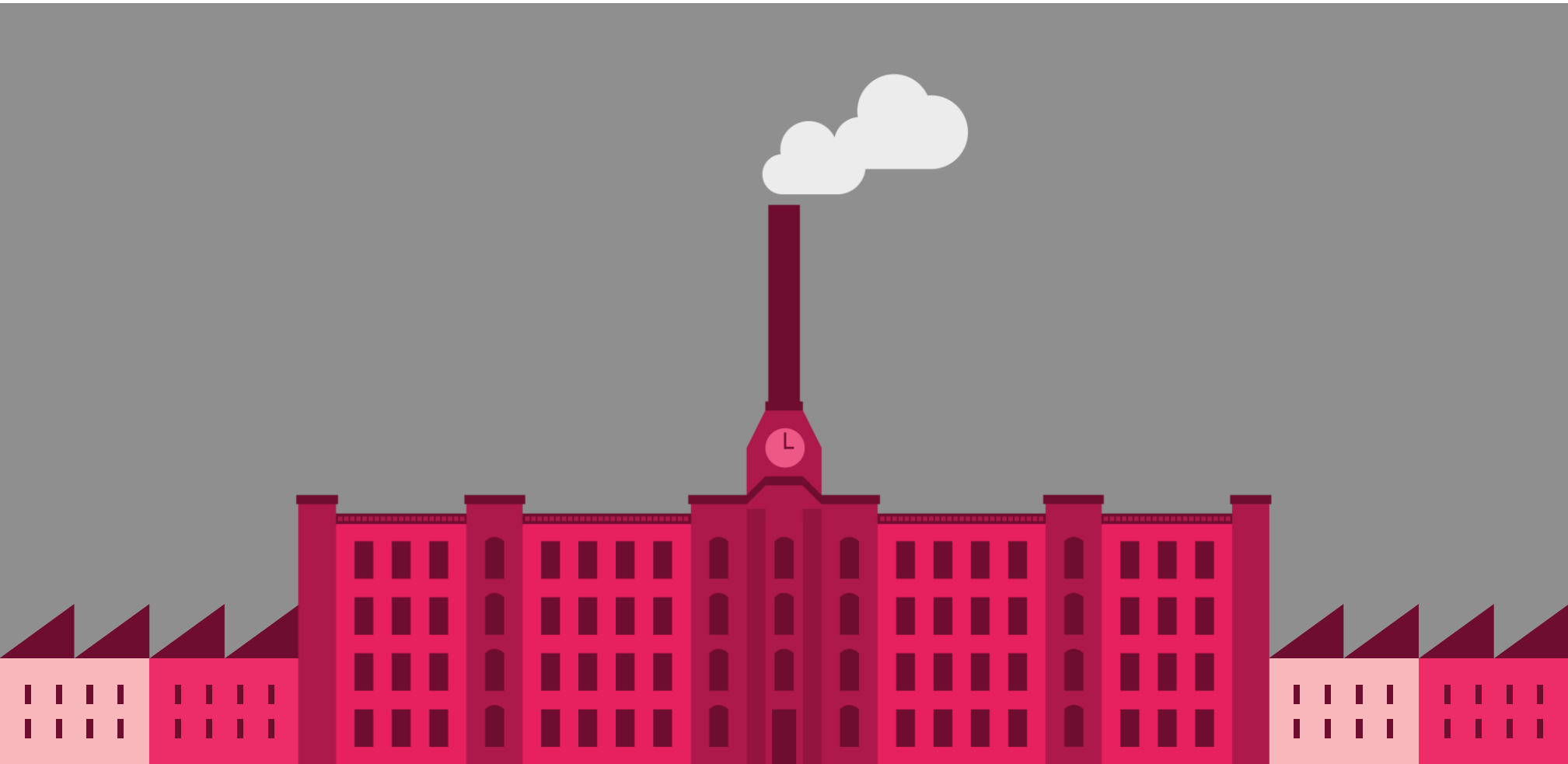
THE SCOTLAND EFFECT

WHAT ARE THE CAUSES? MENTAL HEALTH



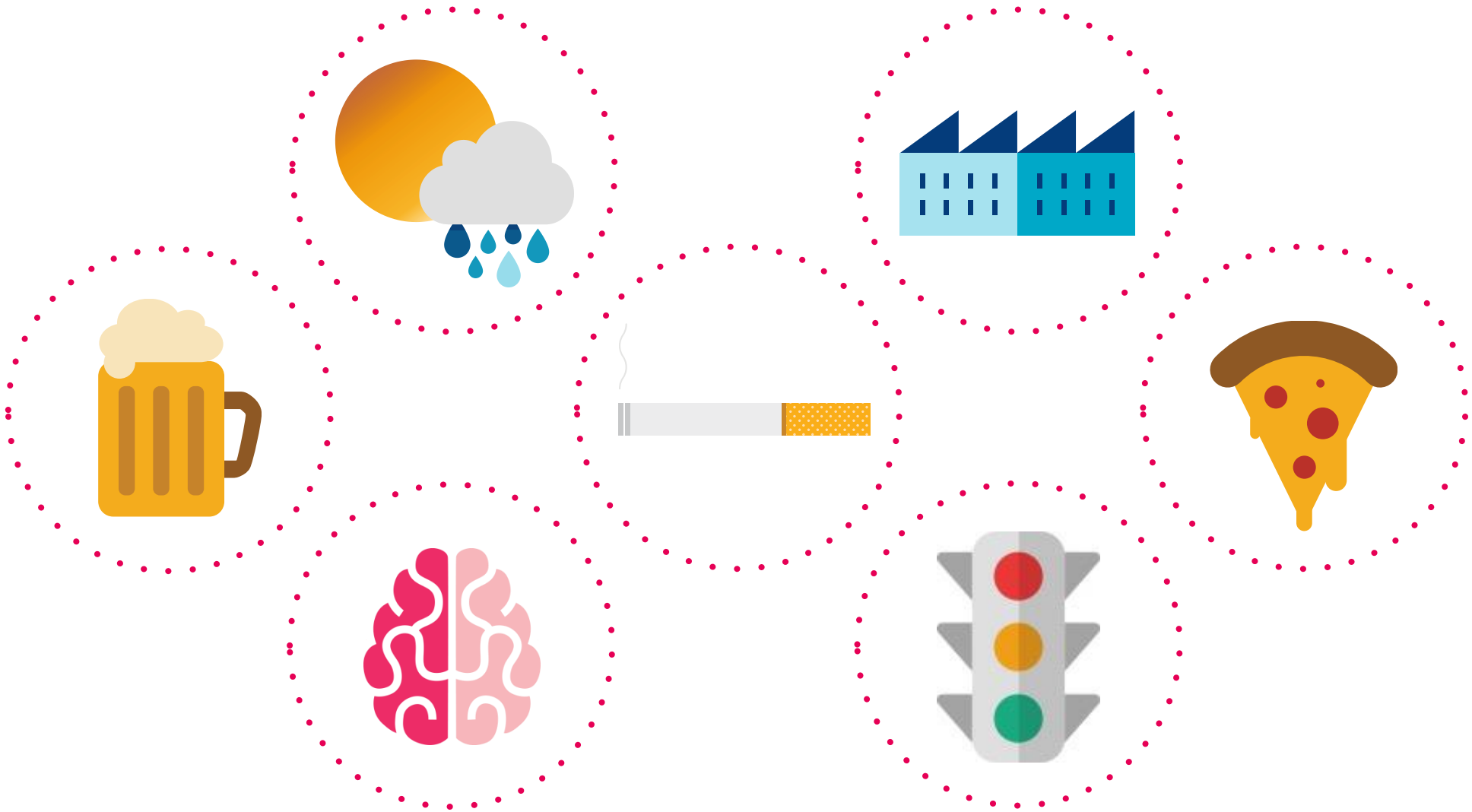
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WHAT ARE THE CAUSES? DEINDUSTRIALISATION



THE SCOTLAND EFFECT

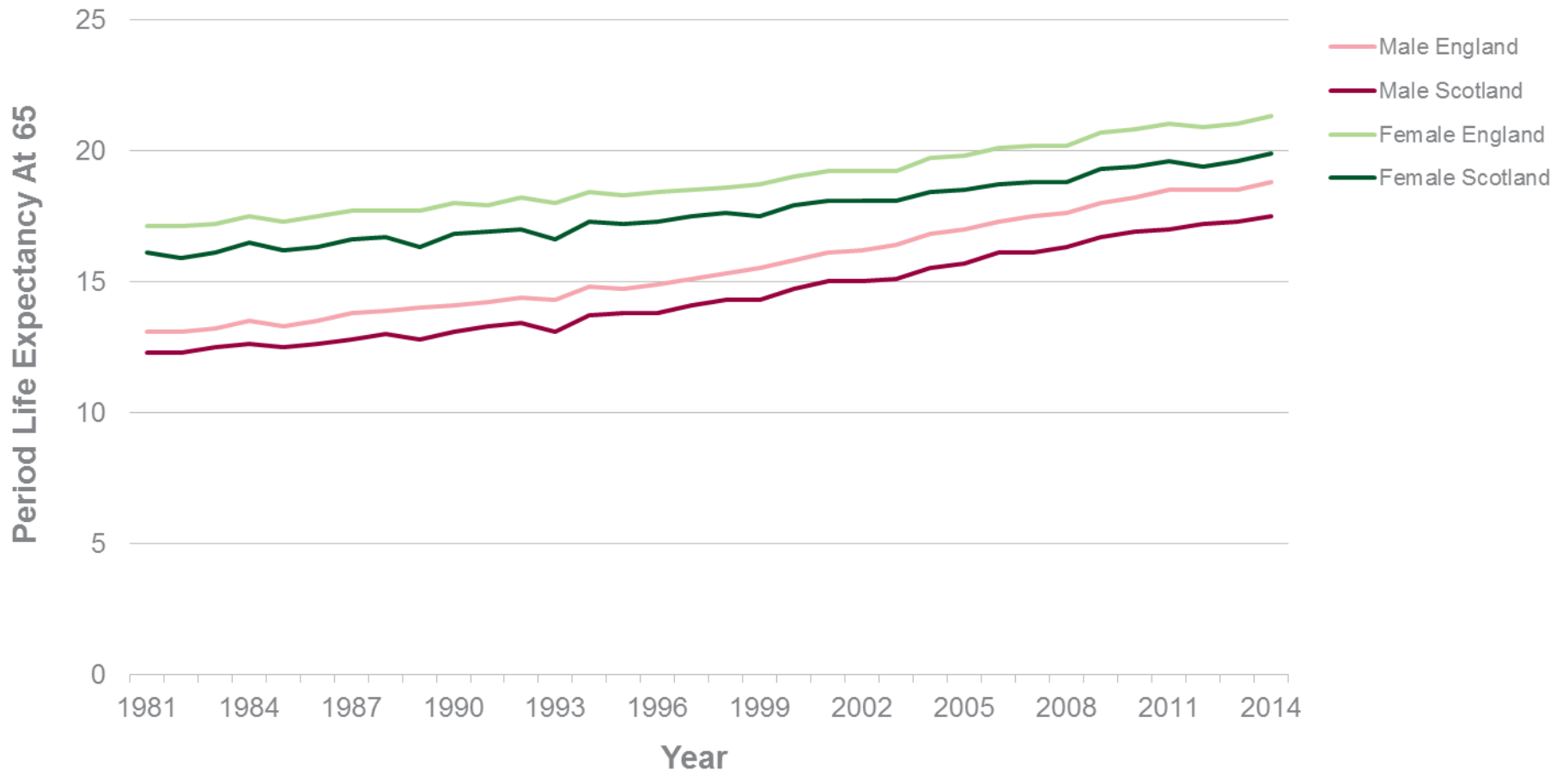
WHAT ARE THE CAUSES?



THE SCOTLAND EFFECT

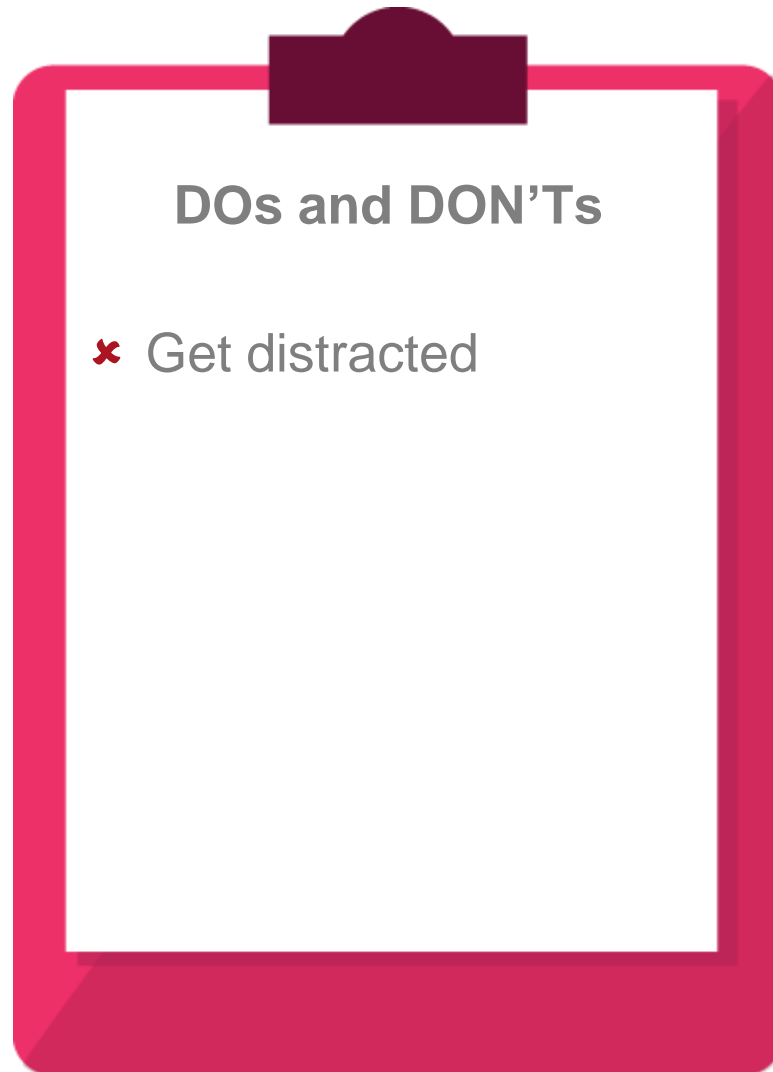
WILL IT PERSIST?

LIFE EXPECTANCY AT 65



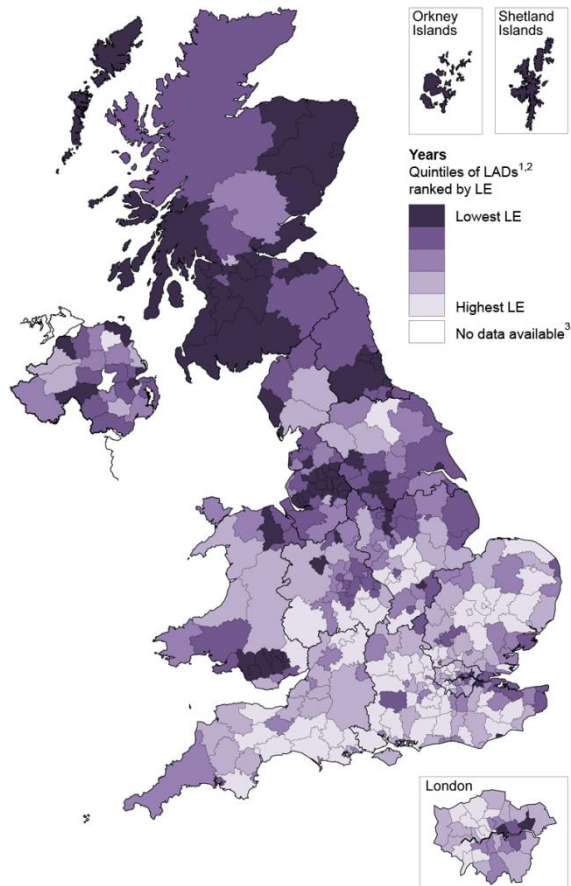
THE SCOTLAND EFFECT

SO WHAT?



THE SCOTLAND EFFECT SO WHAT?

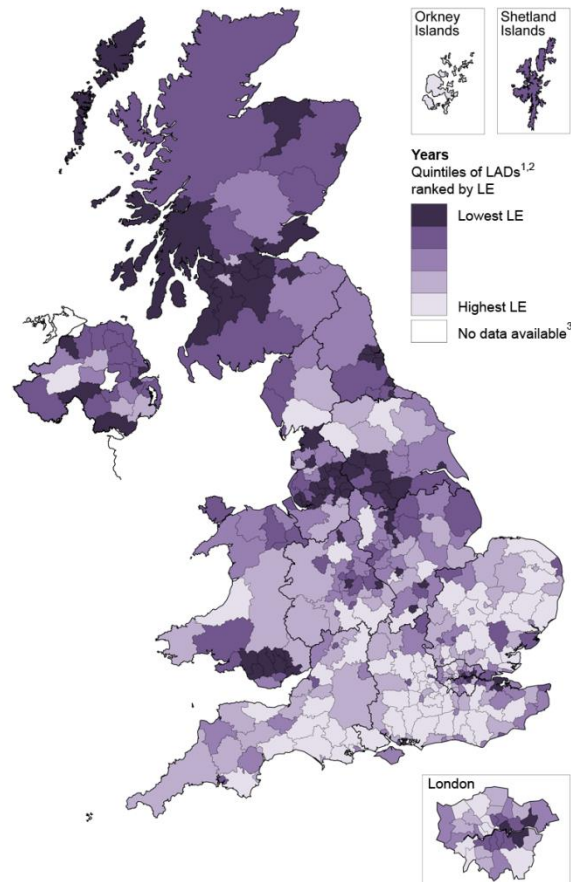
MALES



1 Local authority districts (LADs) include unitary authorities, London boroughs, metropolitan districts and non-metropolitan districts in England and Wales, council areas in Scotland and district council areas in Northern Ireland.
2 Each quintile comprises 81 LADs with the exception of the quintile with the lowest life expectancy, which has 80.
3 Life expectancy figures are not available for City of London or Isles of Scilly because of small numbers of deaths and populations.

Source: Office for National Statistics
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Contains Ordnance Survey data © Crown copyright and database right 2014

FEMALES



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Source:



Independent Review of the State Pension Age

**Smoothing
the Transition**

Final Report
March 2017

THE SCOTLAND EFFECT

SO WHAT?



DOs and DON'Ts

- ✗ Get distracted
- ✓ Consider other factors
- ✗ Ignore it
- ✓ Assess the impact

Questions

Comments

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