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# Education in a devolved Scotland: A quantitative analysis of attainment and inequality

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# The project: A comparative analysis of education in the UK

- Quantitative analysis of official statistics on educational performance in 4 countries
  - From age 7 – compulsory schooling, post compulsory, further and higher education (1995-2011)
- Many difficulties in comparing official statistics
- Data from TIMSS, PIRLS, PISA studies
  - Age 10-15 (2000-2009)
- Data from Millennium Cohort Study, Labour Force Survey
- Educational outcomes and inequality
- Review of policies and evaluation

# Education and Scottish independence

- Scotland's devolved education system fares well in comparison to the rest of the UK
- There are more similarities than differences in how pupils in the UK perform, despite increasing divergence in the sector
- But there are still many young people leaving school with low level qualifications – and there are significant inequalities in our system
- What can independence do to tackle these issues?

# Education in Scotland versus the UK

## – more questions than answers!

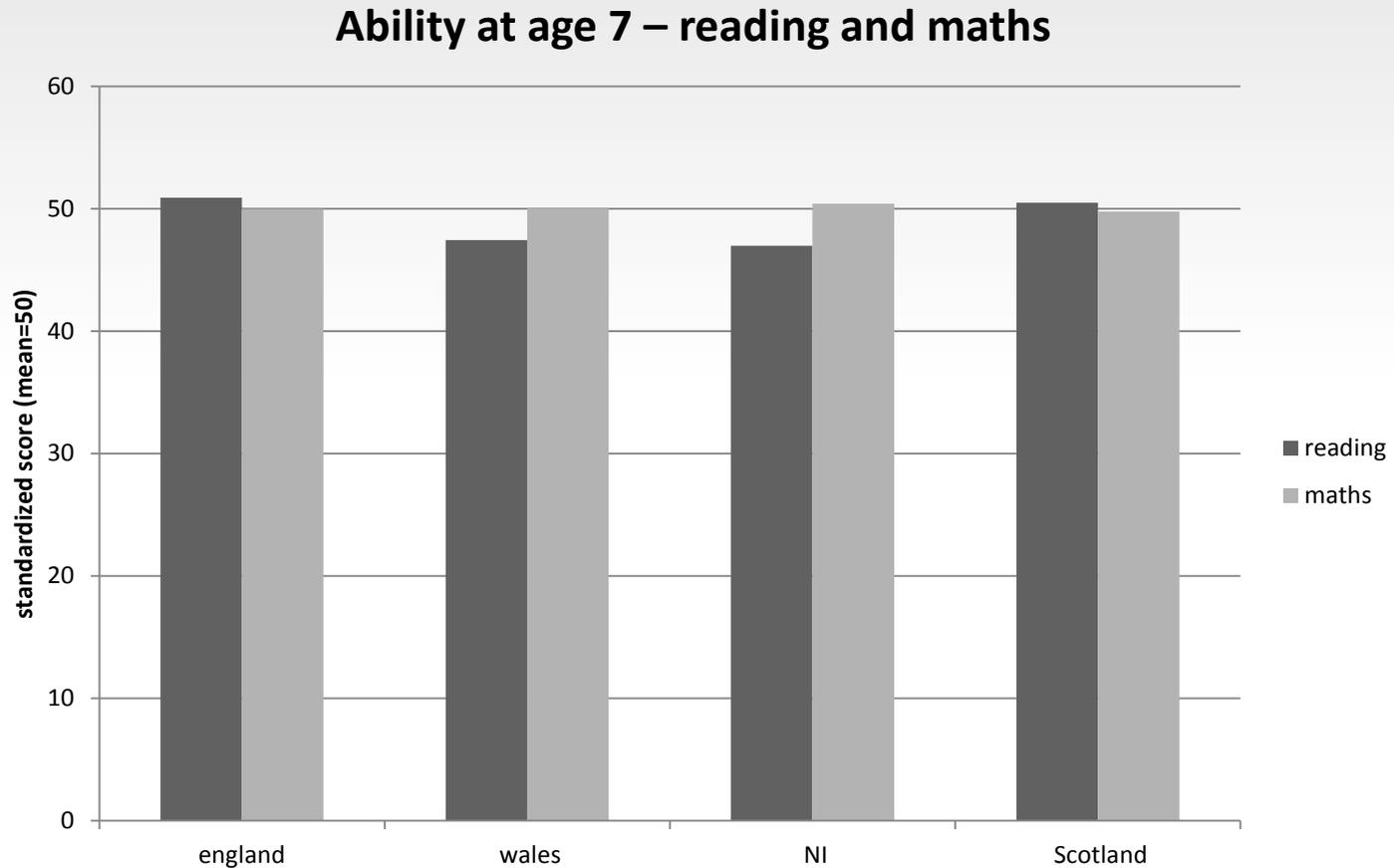
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# Age 7 – a level playing field?



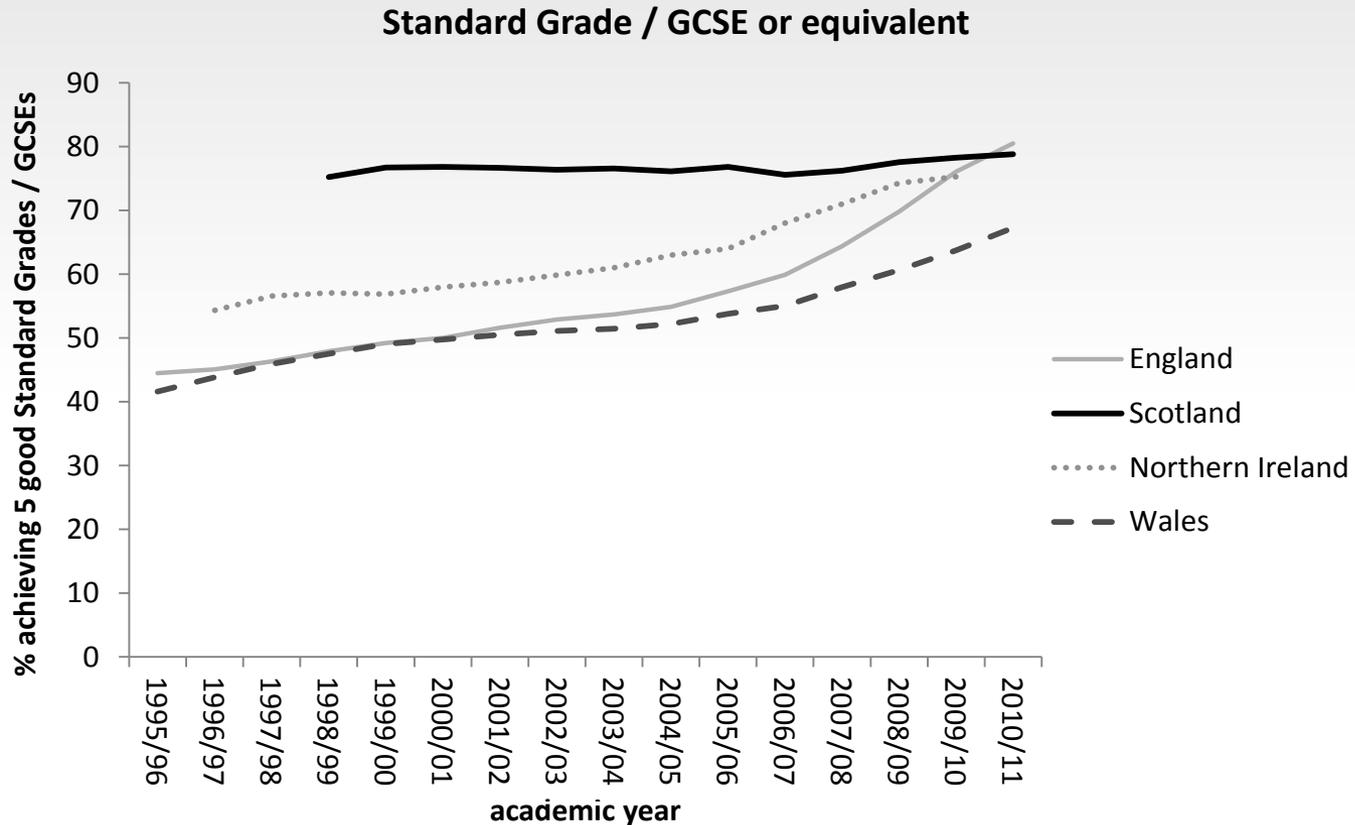
Source: Millennium Cohort Study, 2008

# Age 7 – a level playing field?

|                                 | (1) Raw scores in test | (2) Raw coefficient in each regression (compared with England) | (3) + control for demographics and parental education |
|---------------------------------|------------------------|--|---|
| <b>Reading age 7, MCS, 2008</b> |                        |  |   |
| England                         | 50.9                   | -  | -   |
|                                 | (9.76)                 | -  | -   |
| Scotland                        | 50.5                   | -0.435   | -0.900***   |
|                                 | (9.43)                 | (0.267)  | (0.300)   |
| Wales                           | 47.3                   | -3.473***  | -2.514***   |
|                                 | (10.53)                | (0.255)  | (0.293)   |
| Northern Ireland                | 47.0                   | -3.946***  | -3.814***   |
|                                 | (46.92)                |  |   |
| <b>Maths age 7, MCS, 2008</b>   |                        |  |   |
| England                         | 50                     |  |   |
|                                 | (10.12)                |  |   |
| Scotland                        | 49.8                   | -0.226   | -1.440***   |
|                                 | (9.42)                 | (0.271)  | (0.310)   |
| Wales                           | 50                     | 0.036  | -0.308  |
|                                 | (9.92)                 | (0.249)  | (0.291)   |
| Northern Ireland                | 50.4                   | 0.421  | 0.032   |
|                                 | (9.94)                 | (0.292)  | (0.340)   |

Source: Millennium Cohort Study, 2008  
 Controls: gender, ethnicity, FSM, parental education

# Age 15/16 results – solid without improvement?



**Notes:**

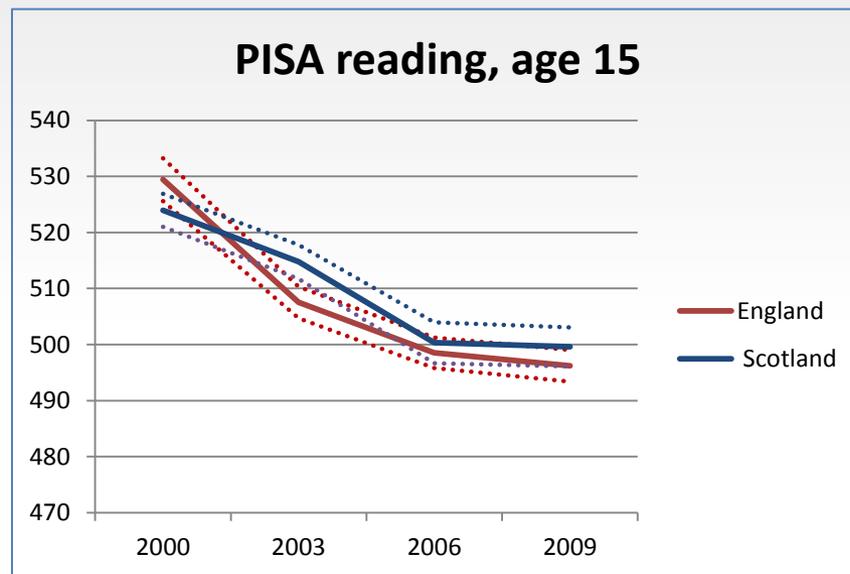
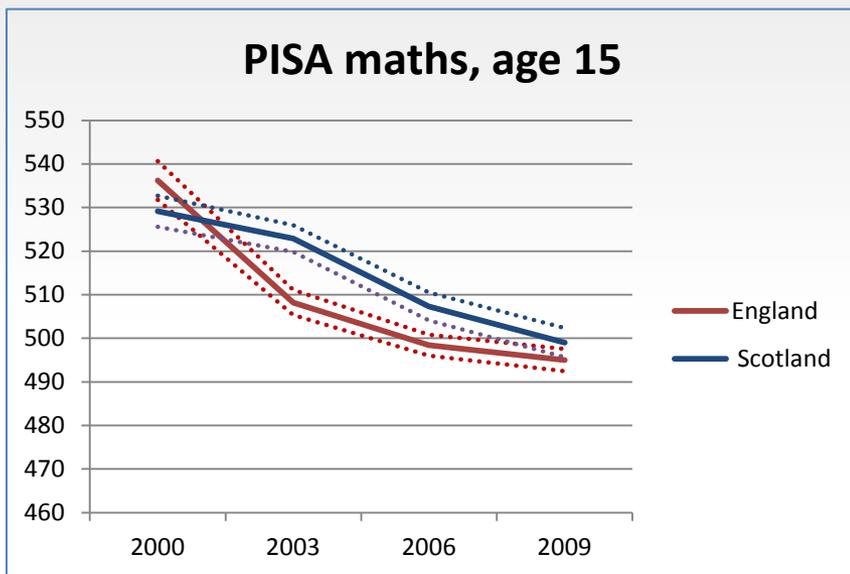
**England :** pre-2004/05 - % of 15 year olds achieving 5 GCSEs or equiv at A\*-C; 2004/05 onwards - pupils at the end of KS4 achieving 5+ GCSES/equivalent at A\*-C (maintained schools only)

**Scotland:** % of S4 roll achieving 5+ Awards at SCQF level 4 or better (publicly funded secondary schools)

**Wales:** % of pupils aged 15 who achieved the Level 2 threshold (figures include attainment at independent schools)

**NI :** pre-2004/05 - % of school-leavers achieving 5 GCSEs/equivalent at A\*-C; 2004/05 onwards - % of year 12s achieving 5+ GCSES/equivalent at A\*-C (from all grant aided post primary schools in Northern Ireland)

# Age 15/16 comparable results



Source: PISA, OECD 2000-2008

Notes: OECD all country average=500

Indicative of grade inflation or subject choice in England?

# Age 15/16 results – Scotland performs very well

|                           | (1) Raw coefficient in each regression | (2) + control for demographics and parental education | (3) + additional controls for resources and socio-economic status |
|---------------------------|--|---|---|
| <b>Maths, PISA 2009</b>   |  |   |   |
| <b>Scotland</b>           | 6.151**                                | 2.691   | 9.070***  |
|                           | (2.772)                                | (2.683)   | (2.359)   |
| <b>Wales</b>              | -21.99***                              | -23.65***   | -17.94***   |
|                           | (3.672)                                | (3.525)   | (3.105)   |
| <b>Northern Ireland</b>   | 0.566                                  | -2.009  | 3.745   |
|                           | (0.428)                                | (2.13)  | (3.42)  |
| <b>Reading, PISA 2009</b> |  |   |   |
| <b>Scotland</b>           | 5.732*                                 | 1.498   | 8.271***  |
|                           | (3.088)                                | (2.995)   | (2.645)   |
| <b>Wales</b>              | -19.12***                              | -19.81***   | -13.79***   |
|                           | (4.090)                                | (3.935)   | (3.481)   |
| <b>Northern Ireland</b>   | 5.748                                  | 3.265   | 9.210**   |
|                           | (4.698)                                | (4.494)   | (3.972)   |

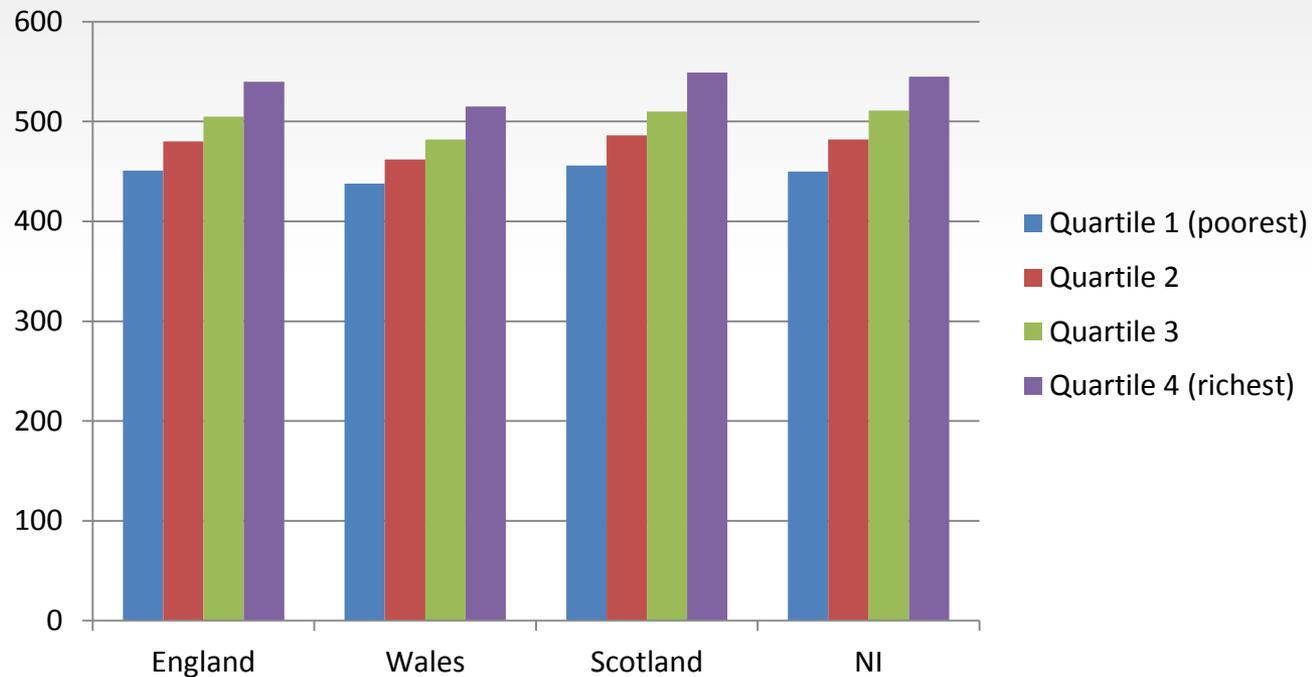
Source: PISA, OECD 2000-2008

Notes: OECD all country average=500

Controls: gender, immigrant, books in household, socio-economic status

# Compulsory schooling: inequality is apparent at age 15

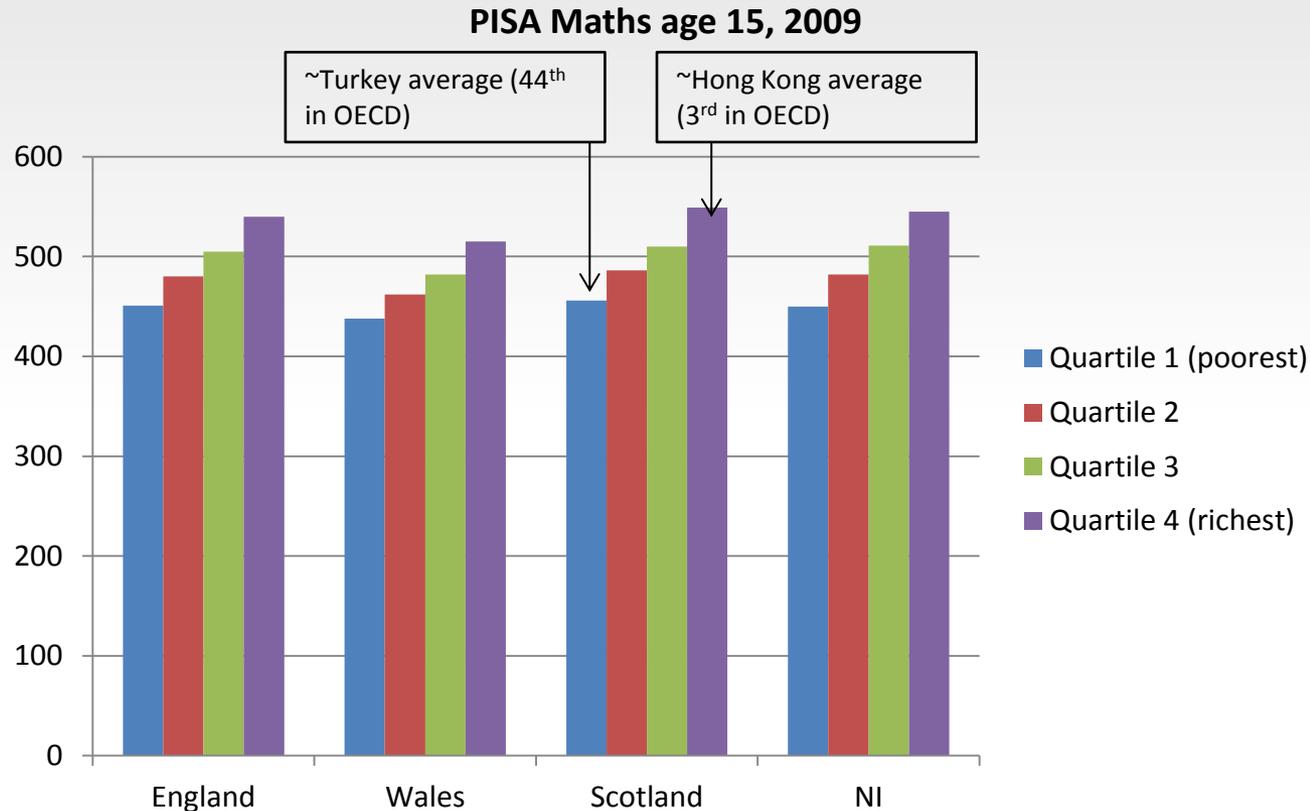
PISA Maths age 15, 2009



Source: PISA, OECD 2000-2008

Notes: OECD all country average=500

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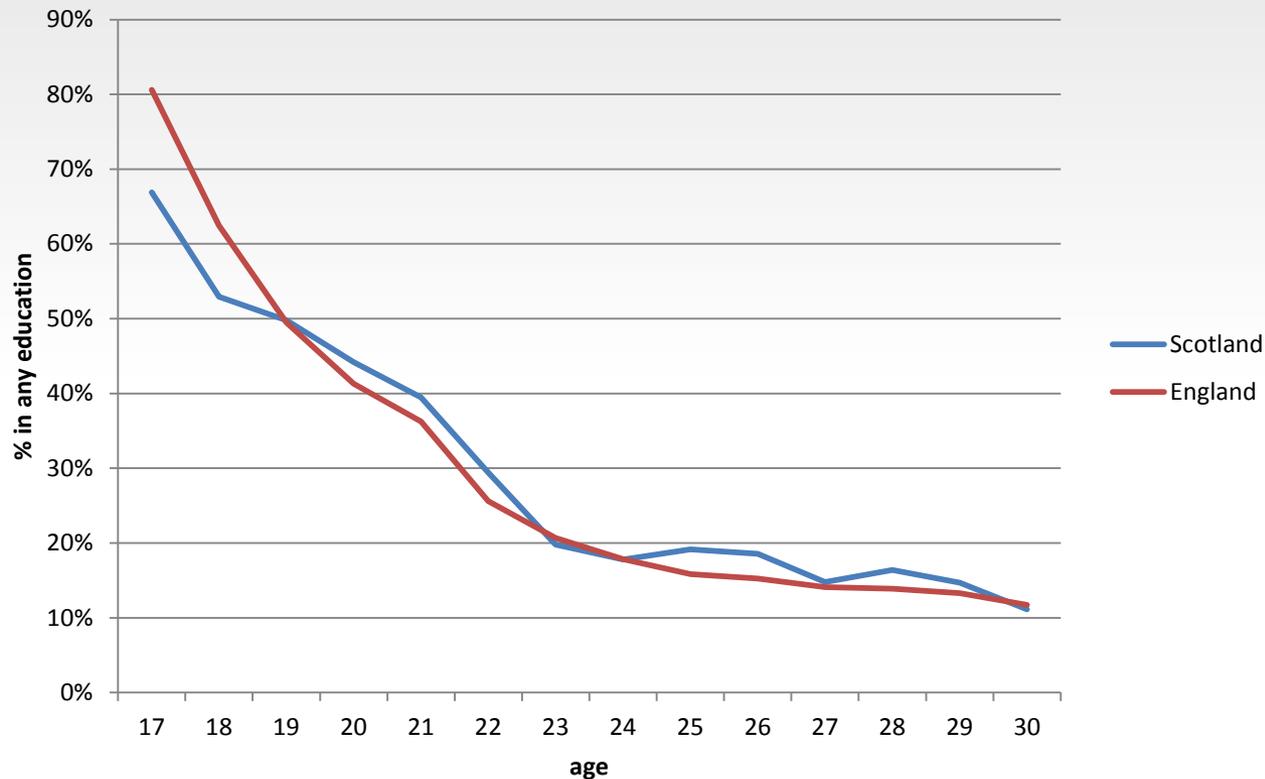
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# LFS data: Scottish staying on rates lower than England's: but is this a problem?

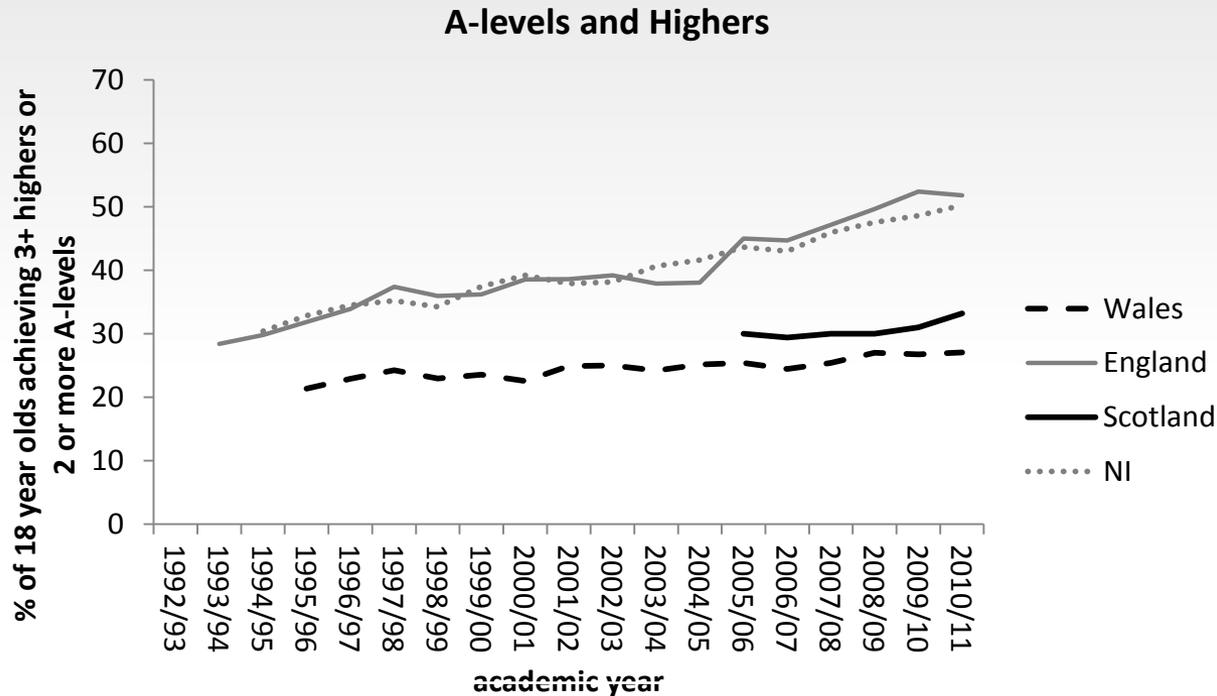


Source: Labour Force Survey, 2011

Notes: includes school, FE college, Higher Education Institution; all qualification types

Sample sizes: N=4,350 (Scotland); N=42,865 (England)

# Higher Attainment: more difficulty with comparisons



**Notes:**

**England :** pre 2005 - % 18 year olds with 2 or more GCE/VCE A level or equivalent; 2005/06 onwards % 18 year olds achieving 2 or more passes of A Level equivalent size (all schools and FE colleges)

**Scotland :** % of the S4 year group achieving 5+ Awards (Higher or better) at SCQF level 6 (publicly funded secondary schools)

**Wales :** % of 18 year olds achieving Level 3 or more (equivalent to 2 or more A-levels) (maintained secondary schools, special schools and Pupil Referral Units)

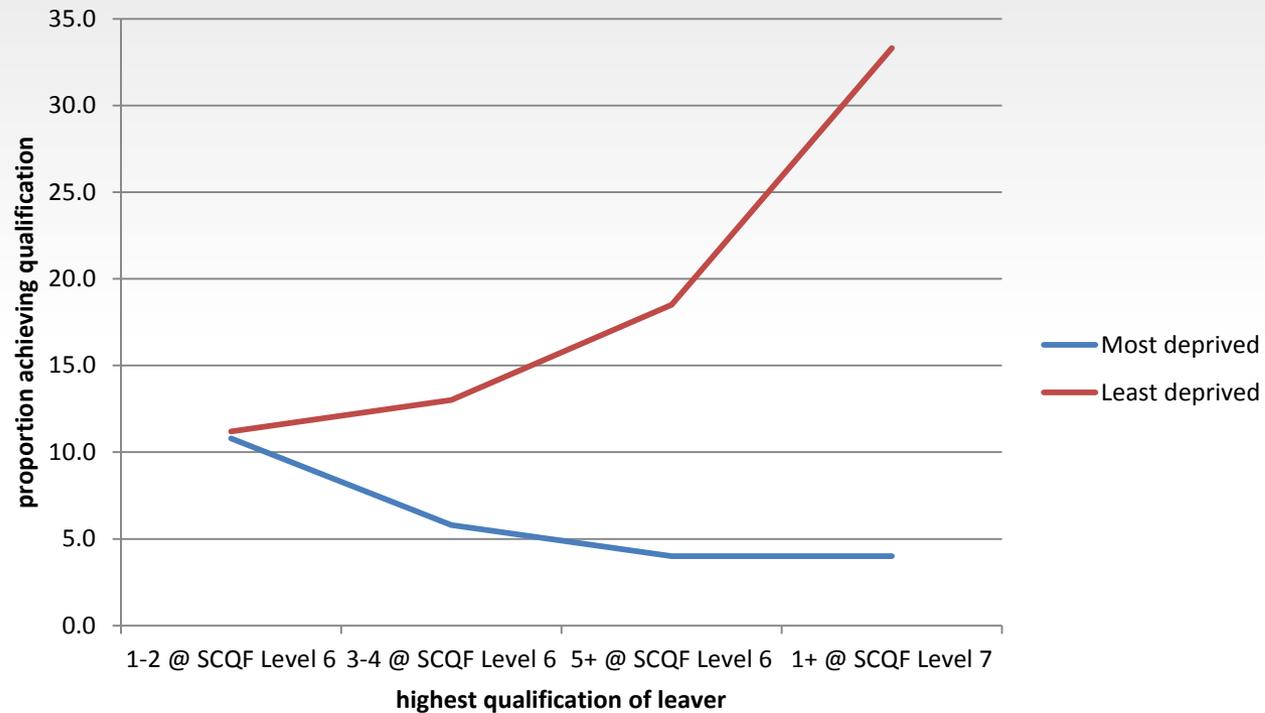
**NI:** % of 18 year olds achieving 2 or more A-levels (including equivalents)

# Higher Attainment: Low relative to England – but could be grade inflation?

| Attainment of the pupils who were in S4 in 2009/10 by the end of each stage (%) |                                     |                                     | England (% of 18 year-olds) |
|---|-------------------------------------|-------------------------------------|-----------------------------|
| By end of Stage   | 3+ Awards at SCQF level 6 or better | 5+ Awards at SCQF level 6 or better | 2+ A-levels                 |
| S4  | 0.0                                 | 0.0                                 |                             |
| S5  | 26.3                                | 12.1                                |                             |
| S6  | 36.8                                | 25.7                                | 52.1                        |

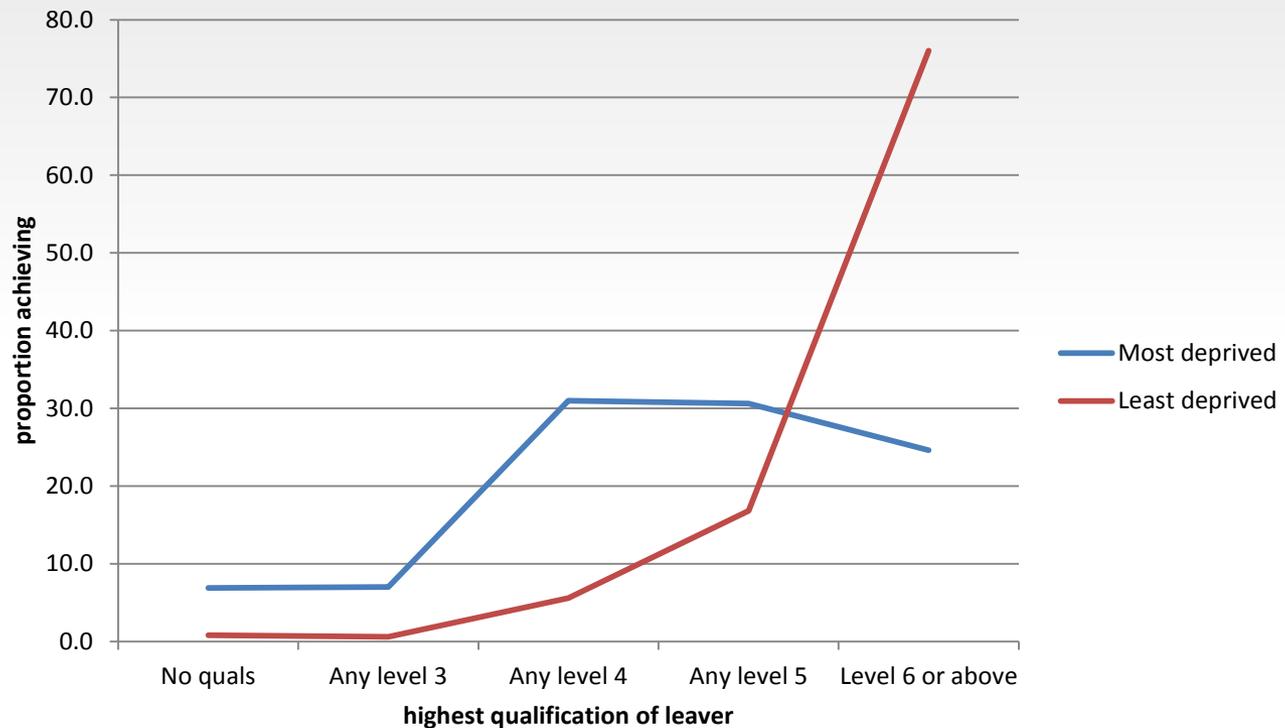
Source: Scottish Government, 2011; DfE, 2011

# Inequality: school leavers in Scotland



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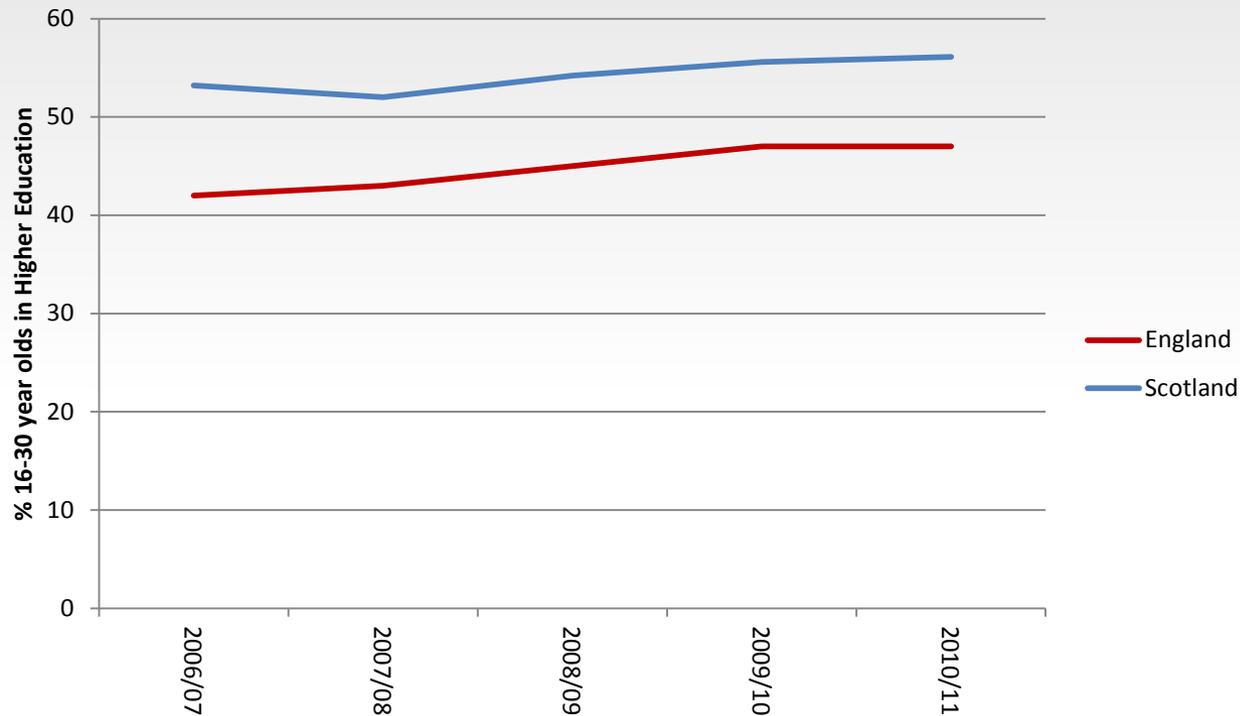
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# Higher Education: Traditionally Scotland does better

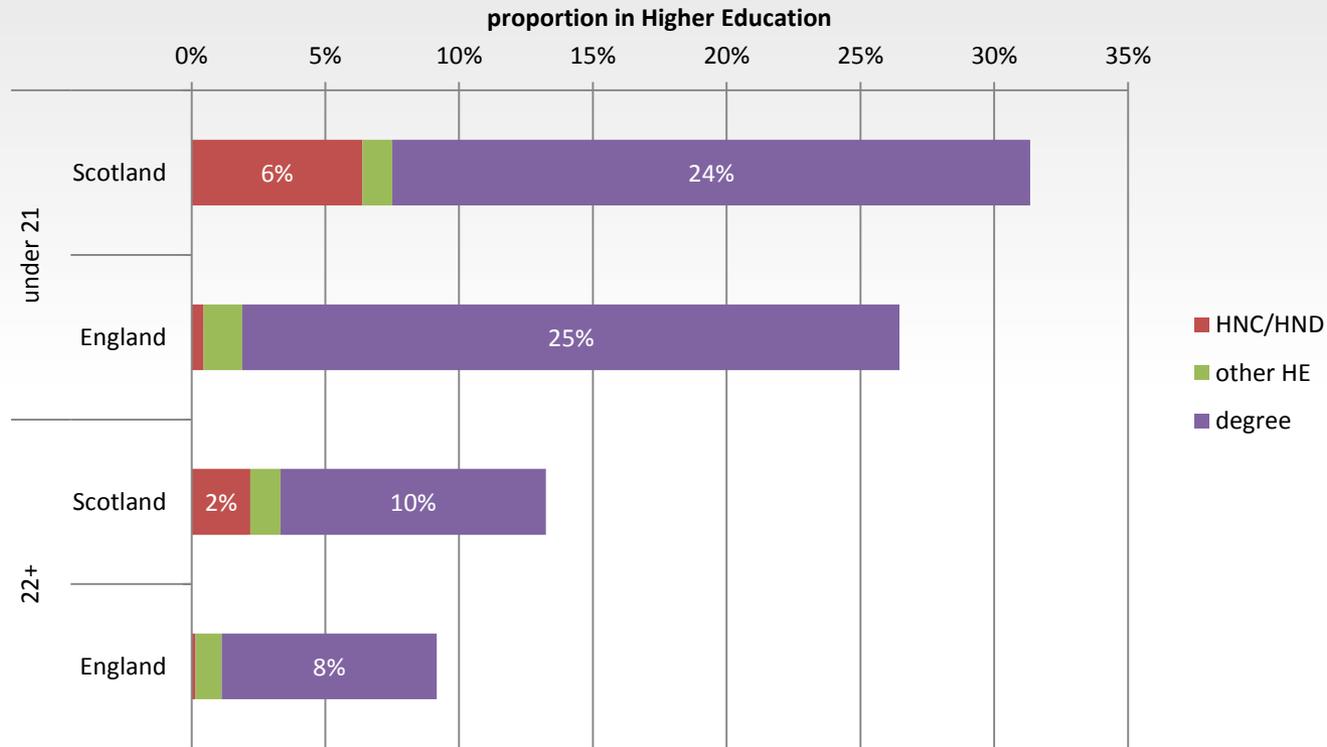


Source: Sources: Higher Education Statistics Agency (HESA), Scottish Funding Council (SFC), Skills Funding Agency (SFA), Welsh Assembly Government, Office for National Statistics (ONS), Department for Education (DfE) and the National Records of Scotland (NRS).

Note: HEIPR includes degrees, HND, HNC, other HE quals

England HEIPR is defined as % 17-30 year olds in HE; Scotland HEIPR is calculated as % 18-30 year olds in HE

# Higher Education: degree participation similar, but Scotland has more non-degree HE students



Source: Labour Force Survey, 2011

# Inequality is stark in Higher Education

| Pupils in S5 in each SIMD achieving 3 or more As at Higher in one sitting by local authority and SIMD, 2011 |        |                 |               |               |               |                |
|---|--------|-----------------|---------------|---------------|---------------|----------------|
|   |        | Poorest<br>20 % | 20% to<br>40% | 40% to<br>60% | 60% to<br>80% | Richest<br>20% |
| Scotland  | Number | 220             | 415           | 784           | 1220          | 1771           |
|   | %      | 2.5             | 4.8           | 8.2           | 12.2          | 17.4           |
| Dundee City   | Number | 5               | *             | *             | 17            | 41             |
|   | %      | 1.4             | *             | 17            | 8.1           | 21.7           |

Source: Guardian Data Blog, 2011

# Conclusions

- Despite divergence in policy, Scotland's young people perform well in comparison to the rest of the UK
- Comparison generates more questions than answers
  - Staying on rates
  - Post-compulsory attainment
- Better data could help us understand this
- Scotland (like the rest of the UK, and OECD) is still an unequal country
- How has devolution /will independence help