

Long-run changes in school leaving rules and outcomes across the UK

**Shruti Khandekar and Luke
Sibieta**

March 2025

About the Education Policy Institute

The Education Policy Institute is an independent, impartial, and evidence-based research institute that promotes high quality education outcomes, regardless of social background. We achieve this through data-led analysis, innovative research and high-profile events.

Acknowledgements

This project is funded by the Nuffield Foundation. The Nuffield Foundation is an independent charitable trust with a mission to advance social well-being. It funds research that informs social policy, primarily in Education, Welfare and Justice. The Nuffield Foundation is the founder and co funder of the Nuffield Council on Bioethics, the Ada Lovelace Institute and the Nuffield Family Justice Observatory. The Foundation has funded this project, but the views expressed are those of the authors and not necessarily the Foundation. Visit www.nuffieldfoundation.org.

The authors would like to thank Robbie Cruikshanks, Mariela Neagu, Natalie Perera, Susan James Relly, David Robinson, James Robson, Emily Tanner, Stephanie Thomson, officials from the Scottish Government and members of our advisory group for their comments and feedback, and to Kerris Cooper for proofreading.

This work contains statistical data from ONS which is Crown Copyright. In particular, the report makes use of the Labour Force Survey (<https://doi.org/10.57906/ns1n-5z24>). The use of the ONS statistical data in this work does not imply the endorsement of the ONS in relation to the interpretation or analysis of the statistical data. This work uses research datasets which may not exactly reproduce National Statistics aggregates. Analysis was carried out in the Secure Research Service, part of the Office for National Statistics.

About the authors

Luke Sibieta is a Research Fellow at the Education Policy Institute

Shruti Khandekar was a Senior Researcher at the Education Policy Institute

Contents

- About the Education Policy Institute 2
- Acknowledgements 2
- About the authors 2
- Executive summary 4
- Introduction 7
- 1. School leaving rules across the UK over time..... 8
- 2. Literature review..... 12
- 3. Long-run changes in education and labour market outcomes across the UK 14
- 4. Analytical approach..... 19
- 5. Regression Results..... 26
- 6. Conclusions and Policy Implications..... 30
- Bibliography 32
- Annex..... 35

Executive summary

Post-16 education and training systems differ across the four nations of the UK. Scotland has long maintained a different education system, with further divergence across the four nations of the UK since devolution in 1999. This offers opportunities to learn about differences in inequalities and the effects of different policies within similar socio-economic settings. Despite this, there is surprisingly little evidence comparing post-16 institutions and outcomes across the UK.

In this report, we analyse how educational and employment outcomes and inequalities have evolved over the long run across the four nations of the UK. This analysis stretches from cohorts born in the late 1940s through to those born in the late 1980s. As such, it covers a period where there have been big changes in society and the economy, as well as education institutions and rules, such as the growth in comprehensive schools, changes to the curriculum, the introduction of GCSEs and many other changes. It is beyond the scope of this report to identify the impact of all the changes over this long period of history, but the trends we document must be seen in this long-run context.

Encouragingly, we find a substantial narrowing of inequalities across nations and by gender over this 50-year period. The main differences that remain include persistently higher rates of educational qualifications in Scotland, particularly at Level 3 (equivalent to A Levels in England and Highers in Scotland), recent evidence of lower qualification rates in Wales and persistently lower employment rates amongst women across all four nations.

We also examine the particular effects of school leaving rules in Scotland, which obligate about half of each school cohort to stay in school until Christmas of the next school year (instead of leaving in the summer). This analysis shows that young people affected by these rules stay in school longer, but see no benefits in terms of higher educational qualifications. Scottish government statistics further show that winter leavers actually have some of the worst outcomes in terms of further employment and education. Partly for this reason, policy has been focused on enabling early entry into colleges to partially correct for some of this disadvantage. However, the general case for winter leaving rules seems weak. It would be better for all children in Scotland to have the same leaving age, no matter when they are born in the school year, so that all children could leave at the end of S4 (Senior 4) or all children are obligated to stay on into S5 (Senior 5).

This analysis forms part of a larger project and complements findings from our interim report from last year (Robson et al, 2024). The interim report examined differences in institutions and policies across the four nations, such as more system coordination in Wales and Scotland, as well as higher rates of sixth form participation in Scotland and Northern Ireland. It also illustrated the lower post-16 outcomes and higher inequalities in Wales in recent years.

Little effect of Winter Leaving Rules in Scotland

- Each school cohort in Scotland is born between March of one year and February of the next year. Those born between March and September can leave school aged 15/16 in the summer after they complete their qualifications in S4 (broadly equivalent to Y11 in England and Wales). Those born between October and February must stay until Christmas of the next school year (S5).
- We find that young people affected by these winter leaving rules do stay in school longer.
- There is little evidence of benefits in terms of higher educational qualifications or labour market outcomes.
- This fits with existing literature on school leaving rules, which finds more positive effects when school leaving rules encourage young people to take more qualifications.
- The vast majority of young people in Scotland chose to stay on beyond their statutory leaving date. However, Scottish government statistics show that the number of children subject to winter leaving rules who actually leave at Christmas of S5 is about 3,000. That equates to about 6 per cent of a school cohort. This group has the worst immediate destination outcomes as compared with other school leavers.
- At present, policy seeks to support these children by allowing for early entry into college on partnership agreements with schools. It is also partially undone if parents chose to defer entry at the start of primary school.
- The current case for winter leaves rules seems weak. It would be better if all young people in Scotland were either able to leave at the end of S4 or S5. This would reduce complexity and provide current winter leavers with clearer options at the start of the academic year.

Large narrowing of Level 2 qualification inequalities by nation and gender

- Amongst men born in the 1940s and 1950s, about 65-70 per cent report having Level 2 qualifications or higher in England and Scotland (equivalent to GCSEs in England and National 5s in Scotland). This was much lower at around 55-60 per cent for men in Wales and Northern Ireland born at the same time. The share of men with Level 2 qualifications or higher then gradually increased over time, up to about 90 per cent for men born in the late 1980s across all four nations.
- We see a much faster rise in qualification levels over time for women across all four nations. For women born in the 1940s, only about 45 per cent reported having Level 2 qualifications or higher in England, Wales and Scotland, and about 35 per cent in Northern Ireland. This equates to differences of about 20 percentage points as compared with men born at the same time.
- In subsequent years, the share of women with Level 2 qualifications or higher increased substantially, such that this difference had disappeared entirely for cohorts born in the mid-1960s. For more recent cohorts, women across all four nations are just as likely to possess Level 2 qualifications or higher than men, if not more likely in some cases.

Narrowing of inequalities in Level 3 qualification rates, but recent concerns for Wales

- Around 55-60 per cent of men born in the 1940s, 1950s and 1960s possess Level 3 qualifications or higher in England, Wales and Northern Ireland (equivalent to A Levels). This was notably higher at about 65-70 per cent in Scotland (where Level 3 is equivalent to Highers). For cohorts born from the 1970s onwards, there was then a gradual rise over time to about 70 per cent for men in England and Northern Ireland, and up to nearly 80 per cent for those in Scotland.
- Perhaps more worryingly, the share of men with Level 3 qualifications or higher in Wales has remained around 60-65 per cent across those born in cohorts in the late 1980s and early 1990s.
- A much lower share of women in the 1940s and 1950s possess Level 3 qualifications or higher. This was about 35-40 per cent across women in England, Wales and Northern Ireland, and about 50 per cent in Scotland. This is about 20 percentage points lower compared with men.
- There was then a steady increase across cohorts for women, such that differences across men and women were closer to zero for cohorts born from the 1980s onwards. As with men, there remains a slightly higher share in Scotland (nearly 80 per cent) as compared with England and Northern Ireland (over 70 per cent) and the lowest levels in Wales (65-70 per cent).

Reduction in employment differences by gender and nation, though lower employment rates for women persist

- For men and women born in the 1940s and 1950s, there were substantial differences in employment rates during working life by nation. Amongst men, employment rates were about 80-85 per cent in England, 75-80 per cent for Wales and Scotland, and then about 70 per cent in Northern Ireland. For women, employment rates were about 70-75 per cent in England and Scotland, 65-70 per cent in Wales and more like 50-60 per cent in Northern Ireland.
- Differences across men and women have since narrowed over time, with faster increases in employment rates for women. However, employment rates haven't changed that much for cohorts born from the late 1970s onwards. For those born in the late 1980s, employment rates for men were about 85-90 per cent across all four nations, and about 75-80 per cent for women.
- Lower employment rates for women will clearly reflect decisions and expectations on child-rearing. The narrowing of the gender gap in employment rates will partly reflect how such decisions and expectations have changed across cohorts.

Introduction

The school leaving age is a critical feature of all education systems. It sets the legal rules for how long young people are expected to remain in the education system. It can also signal societal expectations for the level of education. The school leaving age across has increased over time in the UK, as it has in other countries. It rose from 14 to 15 in 1948, and then from 15 to 16 in 1973. More recently, differences have emerged within the UK after devolution. In England, the leaving age was increased from 16 to 18 from 2013 onwards, with young people expected to remain in full-time or part-education education or training up to age 18.

Elsewhere in the UK, the school leaving age has remained at age 16. There are, however, fine differences in how these rules are applied across the UK, which link to differences in the precise age at which children must start school. In England and Wales, cut-offs are based on whether young people turn 16 or 18 by the end of August of a school year. In Northern Ireland, the key cut-off is the July 1st, which links to when children are expected to start school. In Scotland, the cut-off is the end of February, which is also linked to when children are expected to start school.

There are an additional set of rules in Scotland called ‘winter leaving rules.’ Under these rules, children born between March and September of an academic cohort can leave school in the summer after they have done their exams in year S4 (broadly the equivalent of year 11 in England and Wales). However, those born between October and February must stay in school until Christmas and complete a large part of S5. These winter leaving rules have some similarity to old ‘easter leaving rules’ across the rest of the UK, which defined a cut-off mid-way through year 11 when young people could leave school if they’d turned 16 already. These easter leaving rules were abolished in 1996, but winter leaving rules have remained in Scotland. Given that leaving school at Christmas part-way through the academic can lead to obvious disadvantages, policymakers have created partnership agreements between colleges and schools to allow young people to start college early. The Scottish Government estimate that just over 3,000 young people leave school at Christmas during their S5 year.¹

Alongside changes to the school leaving age, there have been big changes in society and the economy that have led to young people to stay in school longer and gain more qualifications. Income and living standards have risen over the long run. Societal expectations and norms have changed. This includes reduced sexism and gender stereotyping over time. The nature of occupations has also changed, with more occupations asking for graduate-level qualifications.

There have also been big changes in education systems over time, with the move to comprehensive schools during the 1960 and 1970s and the introduction of GCSEs in the 1980s. Paterson (2023) further describes the history of the Scottish education system since 1945, emphasising how the end of selection at age 11-12 and an emphasis on academic breadth opened up new opportunities for many Scottish young people.

This report has two main aims. First, it aims to provide greater long-run context on how school leaving rules and outcomes have changed over time across the four nations of the UK. Second,

¹ [Infographic overview of evidence on school leavers in Scotland - gov.scot](https://www.gov.scot/resources/information/infographic-overview-of-evidence-on-school-leavers-in-scotland)

we investigate whether winter leaving rules in Scotland have affected the education and labour market outcomes of young people.

The rest of this report is structured as follows. Section 1 describes the different institutions and rules across the UK over time. Section 2 reviews the literature on the effects of school leaving rules in the UK. Section 3 document the long-run changes in outcomes across the nations of the UK by cohort and gender. Section 4 describes our analytical approach for estimating the effect of winter leaving rules in Scotland, with section 5 showing the main results. Section 6 concludes and describes the main policy implications.

1. School leaving rules across the UK over time

In this section, we detail how school leaving rules across the UK have changed over time, and the implications for educational and labour market outcomes by cohort and month of birth.

England and Wales

Until very recently, school leaving policies in England and Wales were identical. There have been various changes over time in both nations, with some divergence in the past decade. In particular:

- In 1947, the school leaving age was increased from 14 to 15
- Between 1947 and 1973, the school leaving age was 15 in both nations.
- There were also ‘easter leaving rules.’ Under these rules, children could leave school at Easter if they turned 15 between September and January (inclusive).
- From 1973 to 2013, the school leaving age was 16 in both nations.
- Easter leaving rules continued to exist up to 1996, when they were abolished.
- From 2013 onwards, the education leaving age was increased to 18 in England only.

This set of rules could have affected schooling and educational levels by cohort and particular month of birth. As we discuss in the next section, the increases in the school leaving age in 1947 and 1973 could have led to discontinuous jumps in education and labour market outcomes. Easter leaving rules could also have led to young people born later in the year to accumulate more schooling and gain more educational qualifications, particularly when the leaving age was 16.

From 2013, young people in England have been required to stay in education (full-time or part-time) up to the age of 18. This need not be formal full-time schooling and could encompass an apprenticeship or job with formal training. This created a difference with Wales. However, it is not clear how much this rule is enforced in a meaningful way in England. Furthermore, these young people are still only about 28. It might therefore be too early to find any impact, given available sample sizes in most datasets. At the time of writing, ongoing work for the Nuffield Foundation is investigating the impact of the increase in the participation age to 18 in England.²

Scotland

There are very different rules in Scotland for both starting and leaving school. A school year group consists of children born between March and February the following year. Children start primary school aged 5 (if born between March and August) or aged 4 (if born between September and February).

As in the rest of the UK, children can leave school in Scotland aged 15/16. The formal school leaving age was also increased to 16 in 1973 (like the rest of the UK). The main difference with the rest of the UK is that Scotland has maintained two leaving dates as a result of ‘winter leaving rules.’ In particular, children can leave school in May if they turn 16 between 1 March and 30 September, inclusive. If they turn 16 between 1 October and 28 February, inclusive, they can

² [Revisiting the raising of the participation age to 18 in England - Nuffield Foundation](#)

leave school at the beginning of the winter term (when they are mostly aged 16). This means children born between October and February receive extra amounts of schooling as they are required to attend school at least until winter term.

All children take National 5/4 (or below) qualifications at the end of year S4 when they are aged 15/16. However, about half of the year group may be required to stay until December of S5. This equates to almost half of year of extra schooling and may induce them to take Highers or National 5 exams at the end of S5. As we have shown in a previous report (Robson et al, 2024), young people in Scotland are more likely to be in school at this age and may be more likely to gain academic qualifications as a result of this rule.

These winter leaving rules were formally introduced in the Education (Scotland) Act 1980 (section 33). This act came into force in August 1980, but the original version of the act made reference to these rules being relevant to those turning 16 in 1976.³ Earlier legislation from 1972 also makes reference to local authorities having to set “two leaving dates,” which suggests winter leaving rules could have existed in some locally determined ways beforehand. This all suggests that winter leaving rules will affect all cohorts turning 16 from 1976 onwards and probably earlier in a locally determined way. This creates a number of likely regimes:

- 1947 to 1973 – formal school leaving age of 15, probably with locally determined winter leaving rules
- 1973 – 1976 - formal school leaving age of 16, probably with locally determined winter leaving rules
- 1976 to present day – formal school leaving age of 16, with nationally determined winter leaving rules

Leaving school mid-way through the academic year could create various disadvantages for young people as many courses will already have begun. With this mind, policymakers in Scotland have created partnership agreements between colleges and schools to allow young people to start college early, whilst still being registered in schools until formal leaving date at Christmas. Despite this, the Scottish Government estimate that just over 3,000 young people leave school at Christmas during their S5 year.⁴ With a school leaving cohort consisting of just over 50,000 young people, that equates to about 6 per cent of each cohort of children in Scotland leaving at Christmas due to winter leaving rules.

It is also important to note that since 1980, parents have been able to defer primary school entry if children were due to be aged 4 when they started school (broadly those born between August and February). This could partially undo the effect of winter leaving rules as children are one year older throughout their school career. However, until recently, this was only taken up by children born in January and February, as only these children were entitled to an extra year of early learning and childcare. This has now been applied to all children.⁵ For the cohorts included in our analysis, we should pay most attention to those born between October and December, as compared with those born in September and earlier.

³ [Education \(Scotland\) Act 1980 \(legislation.gov.uk\)](https://legislation.gov.uk)

⁴ [Infographic overview of evidence on school leavers in Scotland - gov.scot](https://gov.scot)

⁵ [Exclusive: Rise in deferred entry to primary school after law change | Tes](#)

It is further important to note that qualifications are different in Scotland to the rest of the UK. Scottish qualifications are organised according to Scottish Credit and Qualifications Framework (SCQF).⁶ Some of the most popular qualifications include National 5s (SCQF Level 5) and Highers (SCQF Level 6) For consistency with analysis, we refer to qualification levels grouped according to Regulated Qualifications Framework.⁷ We particularly focus on Level 2 (equivalent to National 5s in Scotland and GCSEs in the rest of the UK) and Level 3 (equivalent to Highers in Scotland and A level in the rest of the UK).

Northern Ireland

The situation is then more uncertain and complex in Northern Ireland. Presently, a school year group consists of children born between July and June the following year. As a result, children are either aged 5 when they start school (born July and August) or aged 4 (born between September and June). Young people are then required to stay in school until they are 16 and must stay in school until the end of the school year group when they are 16. Therefore, all young people are required to stay until the end of their GCSE year (Year 12 in Northern Ireland, which is the direct equivalent of Year 11 in England and Wales). As with the rest of the UK, the school leaving age was increased from 15 to 16 in 1973.

There is, however, some uncertainty as to when the school cut-off date of July was introduced. Prior to 1989, all the relevant primary and secondary legislation for Northern Ireland looks extremely similar to England and Wales. This includes implicit references to school year groups consisting of children born between September and August, and to easter leaving rules, such as the 1972 order that increased the school leaving age to 16.⁸ The only real difference is that the increase in the school leaving age to 15 was delayed from 1947 to 1957. In the 1989 education order, the legislation then starts to refer to school year groups consisting of children born from July to June and makes no allowance for easter leaving rules. This makes it seem likely that the July cut-off date was introduced in 1989 or shortly afterwards. Of course, it is also possible that the July cut-off date existed in local by-laws prior to 1989.

With this in mind, we include Northern Ireland as a point of comparison in our analysis, but note the greater uncertainty on when school starting ages were based on a July cut-off.

⁶ [Know Your SCQF Level - Scottish Credit and Qualifications Framework](#)

⁷ [What qualification levels mean: Overview - GOV.UK](#)

⁸ [Education and Libraries \(Northern Ireland\) Order 1972 - full text \(education-uk.org\)](#)

2. Literature review

Researchers in the UK have exploited changes in school leaving age (first from 14 to 15, and then 15 to 16) to study the impact of additional schooling on labour market outcomes, and the mechanisms driving any effects. These UK studies are summarised in Table 2.1.

Early studies of the effect of increasing the school leaving age found that an additional year of school increased wage by 15 per cent (Harmon and Walker, 1995). Later studies with cohort controls estimated the effects to be much lower – around 3-7 per cent. Focusing on the increase from age 14 to 15, Devereux and Hart (2010) found effect of 3-4 per cent for men, whilst Clark (2023) finds little evidence of any effect on labour market outcomes. Clark ascribes this to the relatively low quality of school attended by young people affected by the change, and the lack of availability of academic qualifications.

Focusing on the increase in the leaving age from 15 to 16, there has generally been more evidence of positive effects as compared with the increase to age 15. Grenet (2013) finds an additional year of schooling increases hourly earnings by 6-7% in England and Wales. Buscha and Dickson (2018) find similar effects in Scotland (estimates are deemed unreliable for Northern Ireland due low sample sizes). Buscha and Dickson (2012) further show that these effects of an additional year of schooling persist into later ages and are thus highly likely to reflect a permanent increase in hourly wages.

A number of studies have investigated why the increase in the leaving age to 16 seems to have had larger effects than the increase to age 15. Two studies exploit Easter Leaving Rules to show that the increase in the leaving age from 15 to 16 is likely to have induced more young people to achieve academic qualifications, which in turn explains the bigger effect on labour market outcomes. Under Easter Leaving Rules, young people could leave school at Easter if they reached the school leaving age before the end of January. Young people born earlier in the school cohort may thus have been less likely to complete year 10 (when the school leaving age was 15) and less likely to complete year 11 (when the school leaving age was 16). Del Bono & Galindo-Rueda (2006) find that Easter Leaving Rules had a higher impact on rates of academic qualifications and labour market outcomes when the school leaving age was 16, as opposed to 15. Dickson & Smith (2011) use Easter Leaving Rules and the raising of the school leaving age as instruments to disentangle whether additional schooling impacts later labour market outcomes directly, or in fact increases the probability of completing academic qualifications which, in turn, increase labour market outcomes. They find that additional schooling increases the likelihood of remaining in school during essential exams, thereby increasing the chances of attaining qualifications. These, in turn, lead to 40 per cent increased probability of employment.

Table 2.1 Summary of academic evidence on the impact of school leaving age changes in the UK

Paper	Change in school leaving age	Data	Estimated effects
Harmon and Walker (1995)	1947 (14 to 15) and 1973 (15 to 16)	Family Expenditure Survey	15% effect on earnings (upwardly biased as no cohort controls)
Devereux & Hart (2010)	1947 (14 to 15)	New Earnings Survey	Men: 3-4% increase in wages Women: no effect
Clark (2023)	1947 (14 to 15)	Census 1991 (L2)	No effects on earnings or employment; lack of effect ascribed to most affected pupils attending low-quality schools Women: 6% increase in hourly earnings
Grenet (2013)	1972 (15 to 16)	Labour Force Survey	Men: 7% increase in hourly earnings
Buscha & Dickson (2018)	1972 (15 to 16) Scotland and Northern Ireland	Labour Force Survey	6% increase in hourly earnings for Scotland; estimates are not reliable for Northern Ireland
Dickson & Smith (2011)	1972 (15 to 16) Easter Leaving Rules	Labour Force Survey	Find that about 70% of the effect of the school leaving age on employment is down to higher academic qualifications
Del Bono & Galindo-Rueda (2006)	1972 (15 to 16) Easter Leaving Rules	Youth Cohort Study, Labour Force Survey, New Earnings Survey	Larger effect of Easter Leaving Rules when leaving age is 16; larger effects on employment and earnings from gaining academic qualifications for women
Buscha and Dickson (2012)	1972 (15 to 16)	UK Household Longitudinal Study	Wage returns persist for individuals into their 50s

Besides educational and employment outcomes, researchers have exploited reforms to school leaving age changes to estimate the impact of education on a variety of outcomes, such as health outcomes (Davies et al, 2018; Janke et al 2020), crime (Machin et al, 2010) and on public opinion (Cavaille and Marshall, 2019).

The main implication from this literature is that increasing the school leaving age or compelling young people to stay in school longer can have small long-term impacts on labour market outcomes. These positive outcomes are more likely to occur when young people are induced to take more academic qualifications and/or when the schooling available is of high-quality.

3. Long-run changes in education and labour market outcomes across the UK

There have been large changes in the share of individuals with different levels of schooling and qualifications across the four nations of the UK over time. This reflects long-run changes in society, education systems, as well as school leaving rules. In what follows, we examine the long-run changes in education and labour market outcomes across cohorts and nations using the Labour Force Survey. This partly aids our later analysis looking at the effects of school leaving rules.

We define cohorts according to the school year they were born in (i.e. 1980/81 for all children born in England between September 1980 and August 1981, and 1980 for all children born in Scotland between March 1980 and February 1981). We then show the following key statistics by nation, gender and school year of birth:

- Years of schooling
- Level 2 qualifications or higher (equivalent to GCSEs in England, Wales and Northern Ireland, and National 5s in Scotland)
- Level 3 qualifications or higher (equivalent to A levels in England, Wales and Northern Ireland, and Highers in Scotland)
- Employment Rates

For these statistics, we would ideally use nation of birth. Instead, we can only use current nation of residence at the time of the survey. We also restrict analysis to those born in the UK in order to focus on individuals who went through the UK education system. We focus on working-age individuals aged between 25 and 59 to ensure that we are analysing labour market outcomes after most individuals have left full-time education and are more settled into the labour market. We pool all available years between 1995 and 2022, and weight by sampling and no-response weights. We also only include the first wave for each individual (otherwise we'd be counting each individual up to 5 times).

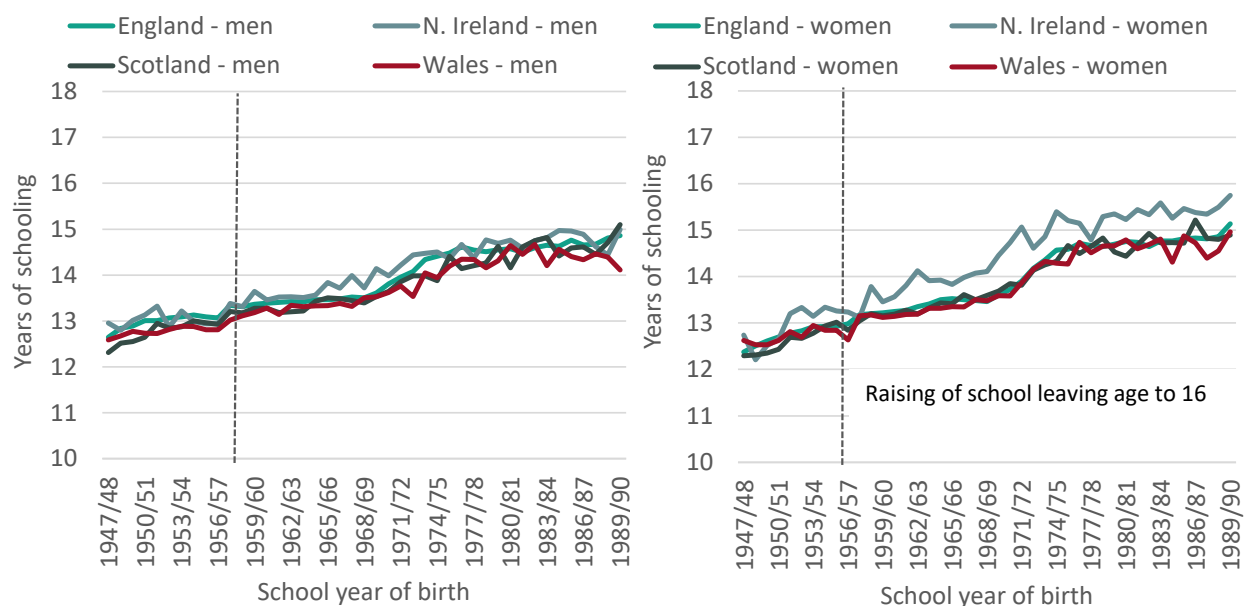
Figure 3.1 shows the average years of schooling for men and women born from the late 1940s through to the end of the 1980s. We stop analysis at this point as sample sizes for individuals aged 25 and over born in the smaller nations become much smaller after this point.

As can be seen, average years of schooling have increased significantly for men and women over time. Individuals born in the late 1940s had about 12.5 years of schooling, on average. This is the equivalent just over 7 years of primary school and 5 years of secondary schooling. This increased steadily over time up to about 15 years for those born at the end of the 1980s. This is the equivalent of about 14 years of schooling, plus about 1 year at university, on average. One can also see a slight jump in years of schooling for the cohort born in 1957/58, who were the first cohort affected by the increase in the school leaving age to 16 in 1973. However, the much more important change is the gradual and steady increase in years of schooling over time.

We also see some evidence of small differences by gender and nation. Amongst men, there were only very small differences by nation for cohorts born between the 1940s and 1970s. However, for men born in Wales from the 1980s onwards, we see lower average years of schooling than the rest of the UK, about one third of a year lower on average.

Differences for women are generally small across most cohorts, as are differences between men and women. However, we do see that women born in Northern Ireland seem to have higher years of schooling across most cohorts than women born in the rest of the UK.

Figure 3.1 – Average years of schooling for working age-adults born in the UK, by nation and gender



Notes: These figures relate to all individuals with valid data aged between 25 and 59 for each cohort. All figures are weighted by standard non-response weights. All underlying cell sizes are above 100.

Figure 3.2 then shows the share of individuals reporting that they have Level 2 qualifications (GCSE-equivalent) or higher by nation and gender. This shows an increasing share of individuals with Level 2 qualifications or higher across cohorts, and a big shrinking of gender disparities over time

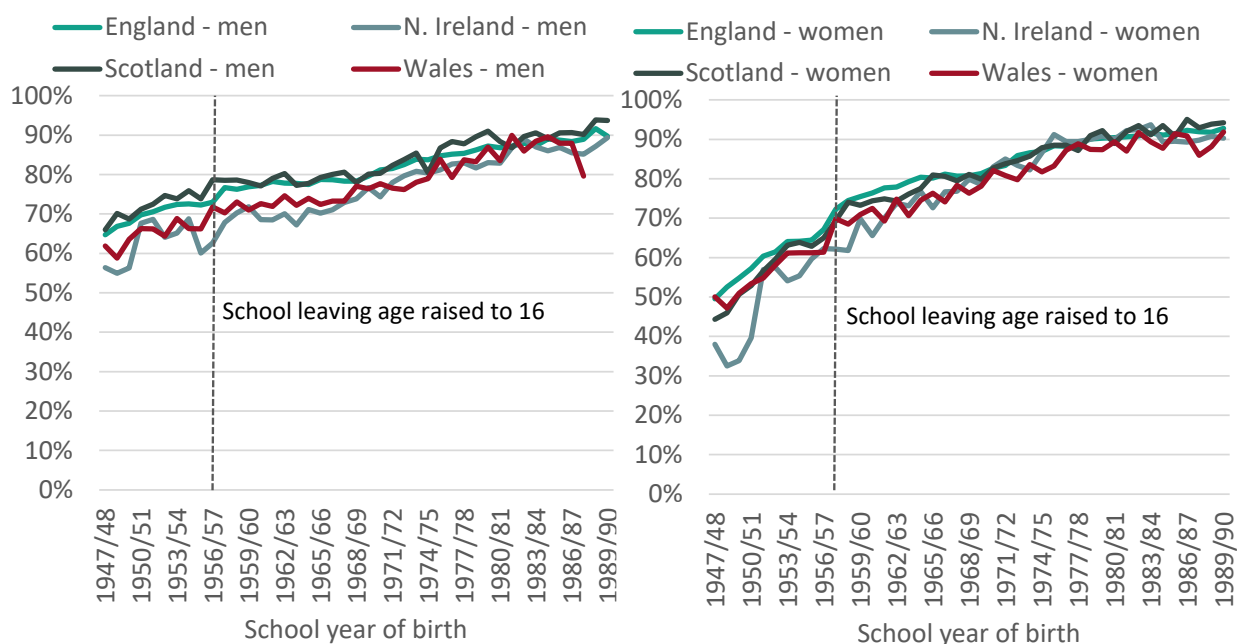
Amongst men born in the 1940s, about 65-70% report having Level 2 qualifications or higher in England and Scotland. This was much lower at around 55-60% for men in Wales and Northern Ireland born at the same time. The share of men with Level 2 qualifications or higher then gradually increased over time, up to about 90% for men born in the early 1990s. We still see slightly lower levels in Wales and Northern Ireland, but the discrepancies are much lower as compared with older cohorts.

We see a much faster rise over time for women across all four nations. For women born in the 1940s, only about 45% report having Level 2 qualifications or higher in England, Wales and Scotland, and only about 35% in Northern Ireland (in spite of the comparable or higher years of schooling for women compared with men). These represent discrepancies of about 20 percentage points as compared with men born at the same time. In subsequent years, the share of women with Level 2 qualifications or higher increased substantially, such that this difference had disappeared entirely for cohorts born in the mid-1960s. For more recent cohorts, women

across all four nations are slightly more likely to possess Level 2 qualifications or higher than men.

With respect to school leaving age changes, we do see a small increase in the share of men and women with Level 2 qualifications in the 1957/58 cohort and afterwards. However, this is dwarfed by the long-run changes across cohorts.

Figure 3.2 – Share of working age-adults born in the UK with Level 2 qualifications or higher, by nation and gender



Notes: These figures relate to all individuals with valid data aged between 25 and 59 for each cohort. All figures are weighted by standard non-response weights. All underlying cell sizes are above 10. The final two figures for men in Wales have been removed due to low cell sizes.

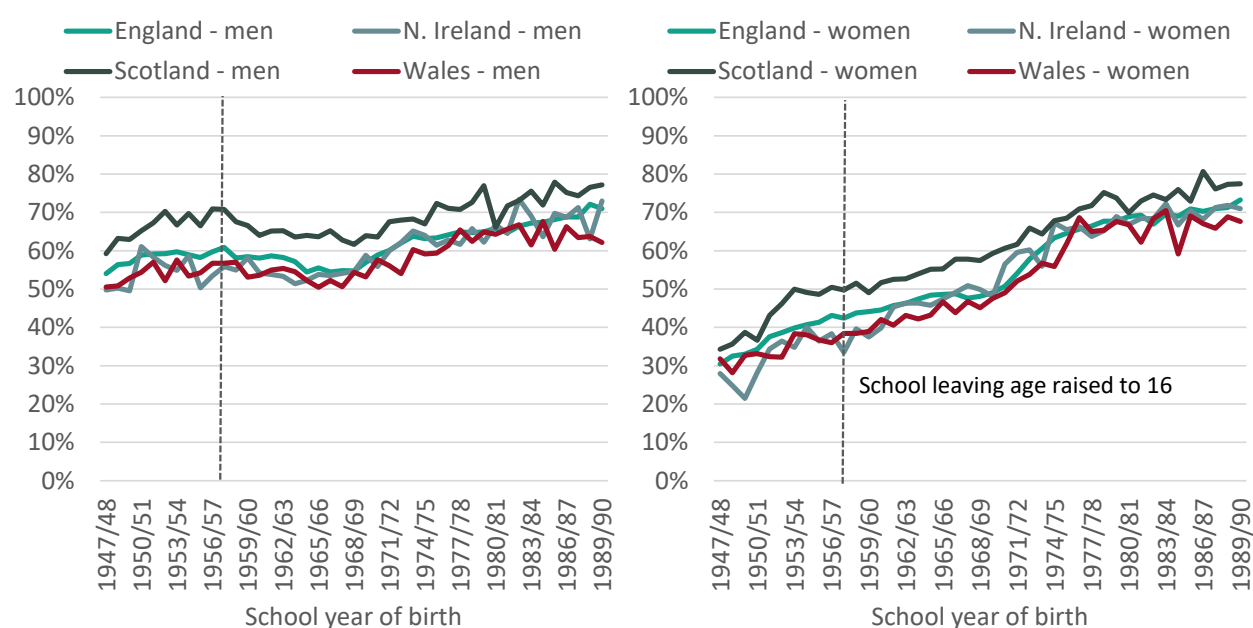
Figure 3.3 then shows trends in the share of men and women with Level 3 qualifications or higher across the four nations. Starting with men, we see that the share of men with Level 3 qualifications or higher was around 55-60% for men born in the 1940s, 1950s and 1960s in England, Wales and Northern Ireland. This was notably higher at about 65-70% in Scotland. For cohorts born from the 1970s onwards, there was then a gradual rise over time to about 70% for men in England and Northern Ireland, and up to nearly 80% for those in Scotland. Perhaps more worryingly, the share of men with Level 3 qualifications or higher in Wales has remained around 60-65% across those born in cohorts in the 1980s and 1990s.

A much lower share of women in the 1940s and 1950s possess Level 3 qualifications or higher. This is about 35-40% across women in England, Wales and Northern Ireland, and about 50% in Scotland. This is about 20 percentage points lower compared with men. There was then a steady increase across cohorts, such that differences across men and women were closer to zero for cohorts born from the 1980s onwards. As with men, there remains a slightly higher share in Scotland (nearly 80%) as compared with England and Northern Ireland (over 70%) and the lowest levels in Wales (65-70%).

Interestingly, we observe an acceleration in the increasing share of women with Level 3 qualifications for those born from about 1970 onwards. We saw a similar, but smaller increase for men for the same cohorts. This is interesting as it coincides with the cohorts who were the first to take GCSEs in England, Wales and Northern Ireland from 1985/1986 onwards. The removal of the previous two-tier age 16 examinations system (of O-levels and CSEs) may have favoured women more.

Paterson (2023) further emphasises the role of curriculum reforms in Scotland over the long run. He describes how a focus on a broad academic curriculum enables more young people to progress through the education system. This may also partly explain the higher share of Level 3 qualifications in Scotland over time.

Figure 3.3 – Share of working age-adults born in the UK with Level 3 qualifications or higher, by nation and gender

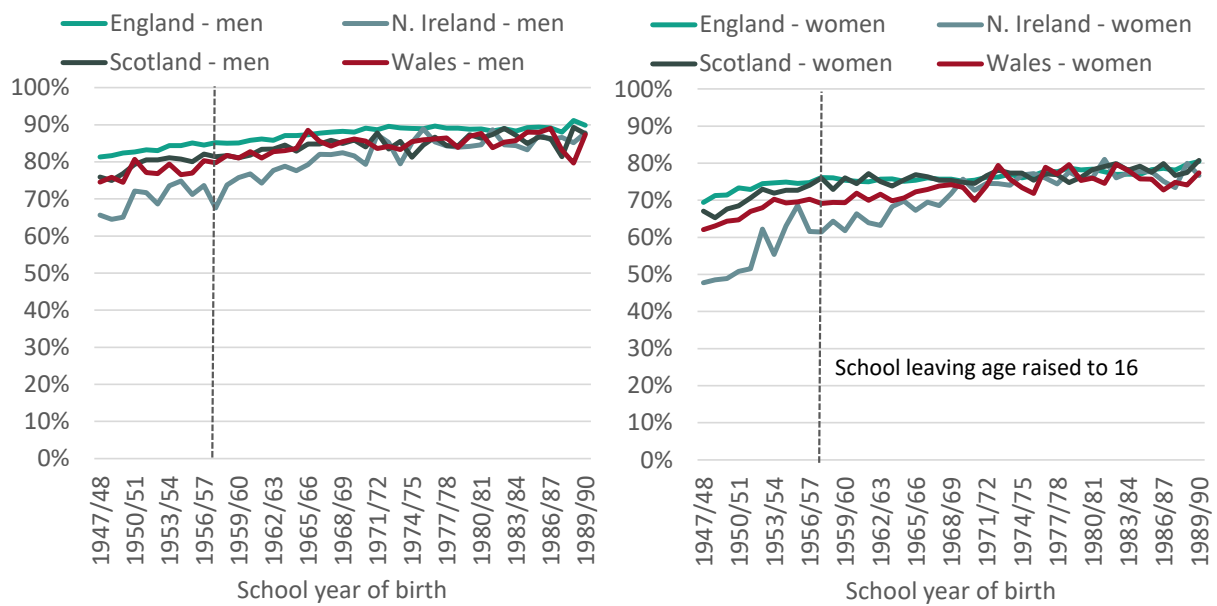


Notes: These figures relate to all individuals with valid data aged between 25 and 59 for each cohort. All figures are weighted by standard non-response weights. All underlying cell sizes are above 30.

In Figure 3.4 then shows employment for men and women across the four nations by cohort. For men and women born in the 1940s and 1950s, there were clear differences in employment rates by nation. Amongst men, employment rates were about 80-85 per cent in England, 75-80 per cent for Wales and Scotland, and then about 70 per cent in Northern Ireland. For women, employment rates were about 70-75 per cent in England and Scotland, 65-70 per cent in Wales and more like 50-60 per cent in Northern Ireland.

Differences across men and women have generally narrowed over time, with faster increases in employment rates for women. However, employment rates haven't changed that much for cohorts born from the late 1970s onwards. For those born in the late 1980s, employment rates for men were about 85-90 per cent across all four nations, and about 75-80 per cent for women. Therefore, differences across nations have generally narrowed over time. Gender differences have narrowed, but remain substantial.

Figure 3.4 – Employment rates for working age-adults born in the UK by nation and gender



Notes: These figures relate to all individuals with valid data aged between 25 and 59 for each cohort. All figures are weighted by standard non-response weights. All underlying cell sizes are above 10.

4. Analytical approach

In this section, we detail our analytical approach for estimating the effect of winter leaving rules in Scotland. In particular, we seek to answer the following research questions:

- 1) What is the effect of winter leaving rules on the years of schooling completed?
- 2) What is the effect of winter leaving rules on the highest education qualification completed?
- 3) What is the effect of winter leaving rules on employment outcomes?

In order to answer our research questions, we estimate regression equations of the following form, where Y_{it} is the outcome of individual i born in year t . Below, we then detail how to interpret the various terms:

$$Y_{it} = \theta.Nation \times Coh_{it} + \alpha.MOB_{it} + \beta.Pre96EW \times MOB_{it} + \gamma.Scot \times MOB_{it} + \mu.NI \times MOB_{it} + \delta.age_{it} + \vartheta.agesq_{it} + \varepsilon_{it}$$

- **Cohort of birth x nation (θ)** – This will capture the increasing levels of education across cohorts over time, which may differ slightly across nations.
- **Month of birth (α)** – This will capture the effects of month birth for the reference case (which we will assume to be those born in England and Wales before after 1980 and unaffected by Easter Leaving Rules, which ended in 1996). Month of birth variables are centred at September in order to capture the precise effect of October relative to September.
- **Month of birth x Pre96EW (β)** – This will capture the effects of month birth for England and Wales for those born before 1980 and therefore potentially affected by Easter Leaving Rules (which ended in 1996). These are estimated relative to the reference case of individuals born after 1980.
- **Month of birth x Scot (γ)** – This is the key set of terms for our research questions, which will capture the effects of month of birth in Scotland, relative to the reference case. If there is a positive effect of months from October through to February, this could be evidence of a positive effect of Winter Leaving Rules
- **Month of birth x NI (μ)** – This will capture the effects of month of birth in Northern Ireland, relative to the reference case.
- **Age effects (δ, ϑ)** – These terms capture a quadratic effect in age at the time of the interview.

In our empirical analysis, we concentrate on illustrating the effect of month of birth in Scotland relative to England and Wales, as these represent the key terms for our research question.

Selecting the sample

For the main analysis, we focus on individuals born in the UK between 1947 and 1990 who left education at age 19 or earlier. The selection of cohorts reflects the maximum available sample sizes of individuals observed in the labour market between ages 25 and 59 across cohorts across the Labour Force Survey. The focus on individuals who left education aged 19 or earlier ensures we are focused on individuals who could be affected by winter leaving rules. It seems

unlikely that individuals who go on to complete university would be affected by rules on whether one can leave school aged 15 or 16. The focus on individuals born in the UK ensures that we are focused individuals exposed to UK school leaving rules. This matches the approach in Dickson and Smith (2011).

Table 4.1 then shows how the available sample and background characteristics of the sample change across various stages of sample selection. All our analysis is split by men and women separately. Focusing on UK-born individuals naturally reduces the sample sizes, which goes from 520,00 to 450,000 for men and from 570,000 to 490,000 for women. As one would expect, focusing on UK born individuals reduces the share of individuals from non-white backgrounds, which falls from 16-17% in the unrestricted sample down to 9-10% in the UK-born sample. Focusing on individuals who left education at age 19 or earlier obviously reduces average years of education (both the raw value and a version trimmed to remove implausible values) and the share of individuals with Level 3 or Level 6 qualifications. In the final step, we focus on individuals with valid earnings data (those in employment and with a valid wave 1 or wave 5 interview). This only reduces the sample a bit as we already focus on individuals in the first wave of data.

All other characteristics are largely unchanged by the sample selection process. The share in England remains at about 82-84%, the share in Wales at around 5-6%, the share in Scotland at around 9-10% and the share in Northern Ireland at around 2%. The average age of our sample is around 41-42 years.

In the appendix, Figure A1 shows the available sample sizes by cohort for men and women in England. This varies from 8,000 to 15,000 by cohort. Figure A2 shows the equivalent for Scotland, Wales and Northern Ireland. For the smaller nations, the sample size varies from 100 to about 1,900.

Table 4.1 – Sample size and characteristics

	Men				Women			
	All	UK-born	UK-born - Low ed.	UK-born - Low ed. (earnings)	All	UK-born	UK-born - Low ed.	UK-born - Low ed. (earnings)
<u>Nation</u>								
England	84.2%	82.8%	82.4%	83.0%	83.9%	82.3%	82.3%	82.7%
Wales	5.2%	5.8%	6.1%	5.7%	5.2%	5.8%	6.0%	5.8%
Scotland	8.5%	9.1%	9.4%	9.4%	8.8%	9.6%	9.6%	9.6%
N. Ireland	2.1%	2.2%	2.1%	1.9%	2.1%	2.3%	2.0%	1.9%
Age	41.19	41.43	41.96	41.50	41.22	41.51	42.22	42.32
<u>Ethnic background</u>								
White	83.8%	90.7%	92.0%	93.2%	83.2%	90.3%	91.8%	92.8%
Indian	2.7%	1.0%	0.5%	0.4%	2.5%	0.9%	0.5%	0.4%
Pakistani	1.6%	0.6%	0.4%	0.2%	1.4%	0.6%	0.4%	0.2%
Bangladeshi	0.6%	0.1%	0.1%	0.1%	0.6%	0.1%	0.1%	<0.1%
Chinese	0.4%	0.1%	<0.1%	<0.1%	0.5%	0.1%	<0.1%	<0.1%
Other Asian	0.8%	0.1%	0.1%	<0.1%	0.9%	0.1%	<0.1%	<0.1%
Black African	1.3%	0.2%	0.1%	0.1%	1.6%	0.2%	0.1%	0.1%
Black Caribbean	0.9%	0.7%	0.7%	0.6%	1.1%	0.9%	0.8%	0.8%
Other Ethnicity	1.7%	0.3%	0.2%	0.2%	1.7%	0.3%	0.2%	0.2%
Mixed Ethnicity	0.6%	0.5%	0.4%	0.3%	0.7%	0.6%	0.5%	0.4%
Not Born in UK	15.5%	n/a	n/a	n/a	16.5%	n/a	n/a	n/a
<u>Education</u>								
Level 2 or higher	77.7%	79.1%	72.3%	79.3%	76.7%	78.3%	71.6%	79.4%
Level 3 or higher	60.8%	60.4%	47.9%	53.2%	53.1%	51.8%	37.4%	43.5%
Level 6 or higher	29.2%	26.6%	11.1%	11.8%	31.2%	28.9%	13.7%	15.8%
Years of education (raw)	14.05	13.70	12.24	12.33	14.01	13.69	12.35	12.46
Years of education (trim)	13.66	13.47	12.20	12.29	13.64	13.47	12.28	12.39
Employed	86.3%	86.3%	84.0%	100.0%	73.7%	75.4%	72.0%	100.0%
Earnings	£31,007	£30,930	£27,048	£25,907	£19,983	£19,508	£16,098	£15,477
Total sample	516,126	448,636	338,464	301,360	571,981	491,262	374,883	342,847

Notes: All characteristics are weighted by standard non-response weight in the LFS, with separate income weights used for the earnings sample. Trimmed education years have been truncated by education level, e.g. those with degrees have been trimmed to ensure a maximum years of education of 18 years, A levels have a maximum of 15 years, GCSEs a maximum of 13 years. All unweighted cell sizes are all above 50.

We separate the analyses by gender to reflect the difference in the female and male labour markets. Amongst other differences, women start full time work later than men and peak in career earnings roughly five years earlier. We choose 25 as the lower bound to capture young peoples' entry into the labour market and restrict our analyses to those aged 59 or older to exclude retirement effects.

As a result, we focus on

- completion of level 2 and level 3 qualifications
- number of years in full time education
- rate of employment
- average annual gross earnings

Birth Month and Outcomes

The school leaving rules across nations create a potential link between month of birth, educational and labour market outcomes. However, there are many other reasons to expect month of birth effects.

Month of birth effects on outcomes are well noted in economics of education literature. Students born later in the school year, i.e. the children who are the youngest when they begin school, are likely to have lower outcomes throughout their academic careers, though this gap shrinks with age. This trend has been observed internationally with older students in Norway outperforming their younger peers in educational and employment outcomes, though the size of the gap varies by socioeconomic status (Solli, 2017).

Sykes et al. (2009) conduct a literature review of the effects of birth month with a focus on outcomes in the United Kingdom (UK). They suggest that students who are younger relative to their peers in the same cohort are likely to be “on average, less mature – cognitively, socially, and emotionally – than their older classmates” (Sykes et al., 2009, p. 4). A review of further evidence suggests that these effects are likely to persist into the students’ latter academic career. Crawford, Dearden, and Meghir (2007) find that summer-born students were slightly less likely to reach A-levels. Further, the Higher Education Funding Council for England (HEFCE) found that students born in September were 20 per cent more likely to access higher education than those born in August., we include age in cohort as a part of our model to account for any variation in outcomes caused by birth of month effects.

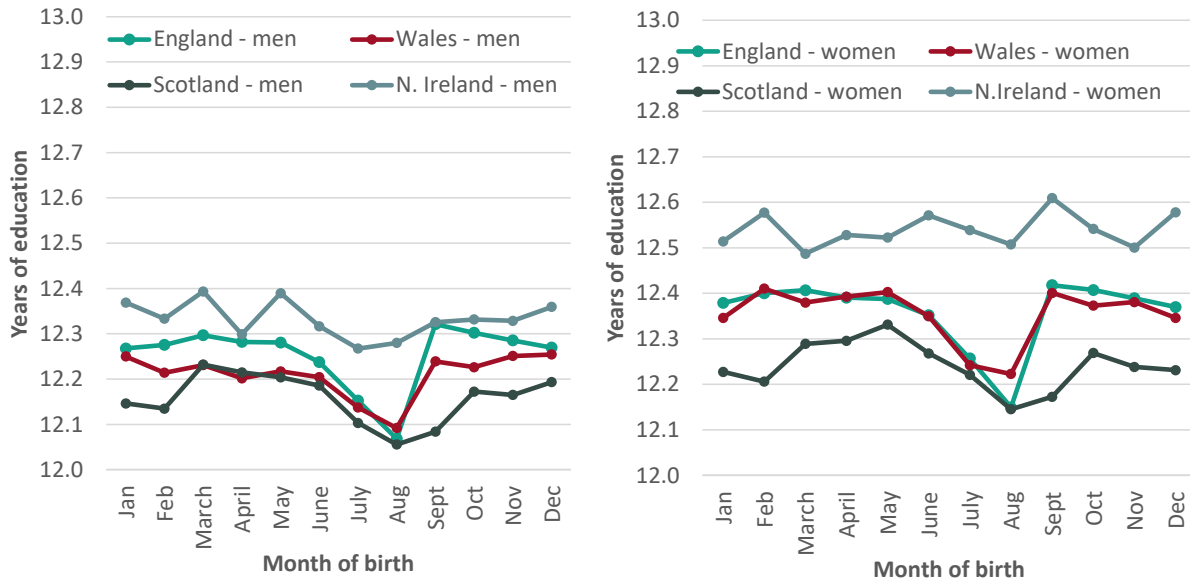
Our analysis of how month of birth affects school leaving decisions and outcomes allows for these wider month of birth effects. With this in mind, Figure 4.1 shows average years of education by month of birth, gender and nation for our preferred sample (those who left education before age 18 and were born in the UK). For England and Wales, we see a declining picture for average years of education from September through to August, with a particular drop off for those born during the summer. This is followed by a jump up between August and September. In Northern Ireland, the picture doesn’t appear to vary much by month of birth.

In our key case of Scotland, there is a decline between March (the oldest in a school cohort in Scotland) and September. There is then a jump in October (the first month to be affected by winter leaving rules). This gives some evidence to suggest that winter leaving rules increase years of education in Scotland, particularly as this jump is not visible in Wales, England or Northern Ireland. These trends in years of education by month of birth are the same for men and women.

Figure 4.2 then shows the equivalent picture for Level 3 qualifications or higher. The differences by month of birth are very small for both men and women in England. For Wales and Northern Ireland, there is variation without a clear trend throughout the school year. For Scotland, we see a higher level of individuals with Level 3 qualifications or higher, in line with earlier descriptive

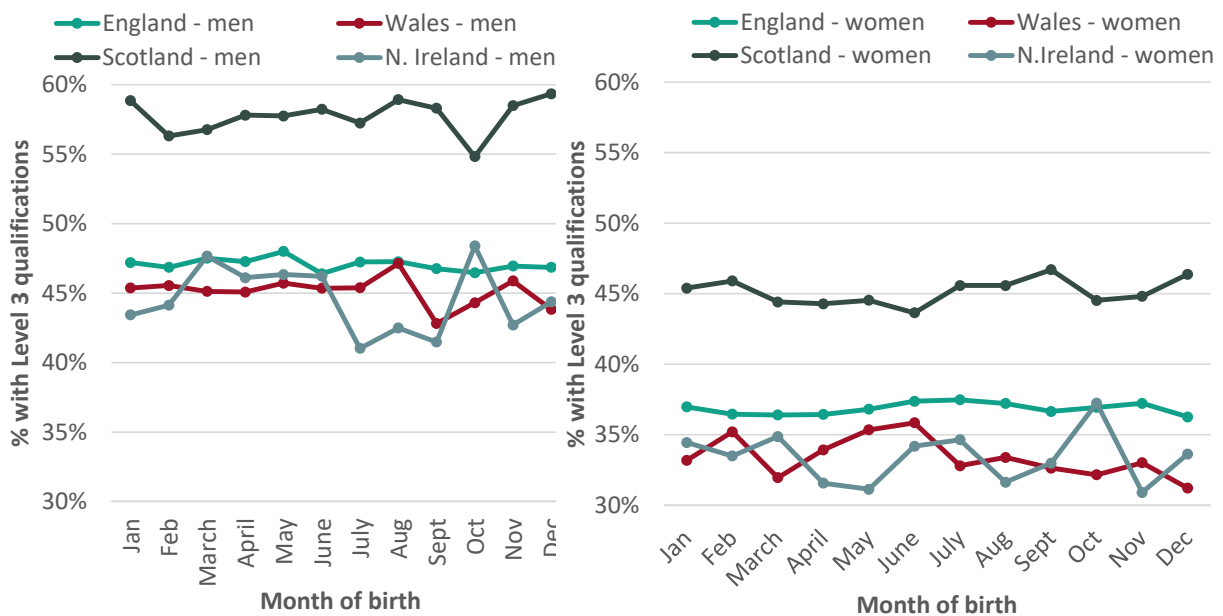
statistics. For men in Scotland, we see some evidence of higher qualifications for those born in November to February as compared with the summer months, but not for October specifically. For women in Scotland, we see no clear evidence of differences by month of birth.

Figure 4.1 – Years of education by nation, gender and month of birth



Notes: These figures relate to all individuals born in the UK, who left education before the age of 19 and with valid data aged between 25 and 59. All figures are weighted by standard non-response weights. All underlying cell sizes are above 500.

Figure 4.2 – Level 3 qualifications or higher by month of birth, nation and gender



Notes: These figures relate to all individuals born in the UK, who left education before the age of 19 and with valid data aged between 25 and 59. All figures are weighted by standard non-response weights. All underlying cell sizes are above 200.

The above differences by month of birth suggest only very weak evidence of an impact of the winter leaving rules in Scotland. There is some evidence of higher years of education for those born in October and later, but weak evidence of much impact on Level 3 qualifications.

Before exploring these differences using our main empirical methodology, it is worth illustrating the degree to which there is heterogeneity by broad cohort of birth. To do this, we split our preferred sample into three groups:

- **Turned 16 before 1973** – cohorts with a school leaving age of 15
- **Turned 16 between 1973 and 1996** – cohorts with a school leaving age of 16, with winter leaving rules definitely in operation in Scotland
- **Turned 16 after 1996** – end of easter leaving rules in England

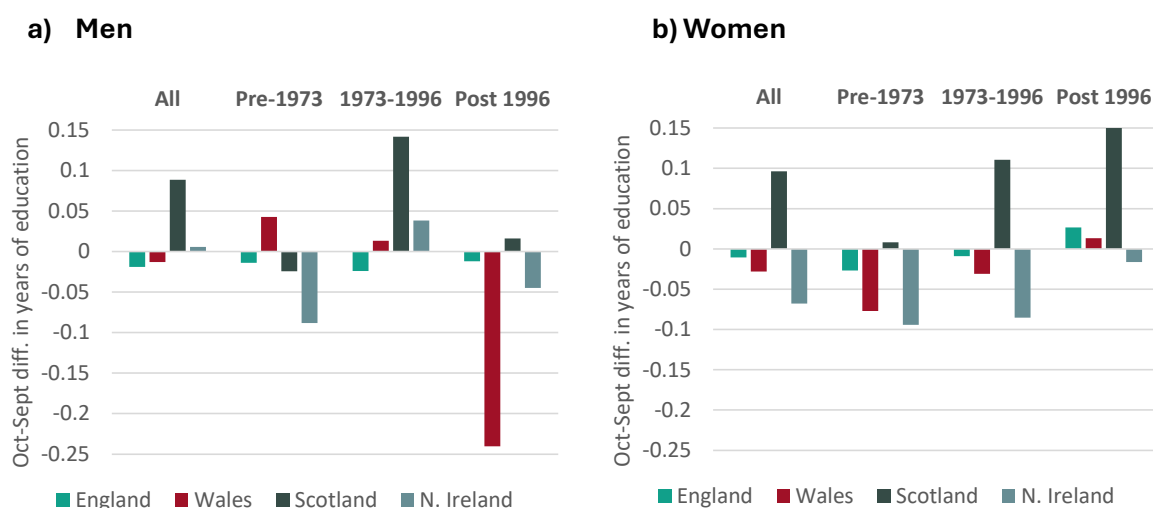
We then estimate the average outcome by month of birth, gender and nation for these three broad cohorts. In Figure 4.3, we show the key difference between those born in October and September. This is where we would expect to see a positive jump in Scotland if there were an effect of winter leaving rules.

In Figure 4.3, we see a positive Oct-Sept difference in years of education for men and women in Scotland, as was shown for the full differences by month of birth. This appears to be unique to Scotland and largely driven by those turning 16 between 1973 and 1996 for men, and those born after 1973 for women.

Figure 4.4 then shows a lack of a positive Oct-Sept in Level 3 qualifications for men and women in Scotland across all three cohorts.

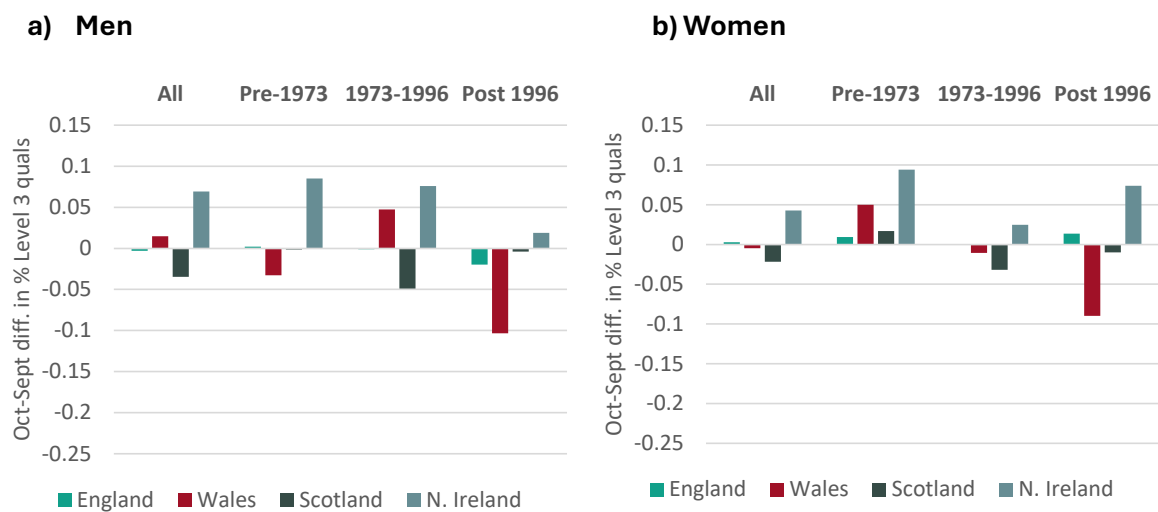
This analysis highlights the importance of allowing for cohort differences, and potentially different month of birth effects for those born after 1973.

Figure 4.3 – October-September difference in years of education by gender, nation and broad cohort



Notes: These figures relate to all individuals born in the UK, who left education before the age of 19 and with valid data aged between 25 and 59. All figures are weighted by standard non-response weights. All underlying cell sizes are above 90.

Figure 4.4 – October-September difference in Level 3 qualifications by gender, nation and broad cohort



Notes: These figures relate to all individuals born in the UK, who left education before the age of 19 and with valid data aged between 25 and 59. All figures are weighted by standard non-response weights. All underlying cell sizes are above 20.

5. Regression Results

In this section, we detail our main estimates of the effects of month of birth by nation and interpret what this means for our key research questions. We estimate the equation in section 4 by gender and outcome for our preferred sample (those born in the UK and who left education before the age of 19). We then graph the coefficients for month of birth by gender.

Figure 5.1 shows the estimated effects of month of birth on years of education for our preferred sample. The green lines show the estimated effects of month of birth for our base or reference case (individuals born in England and Wales after 1980), with all estimates shown relative to the omitted category of September.

For our base case, those born later in the school year have lower years of education, on average, with a particular drop off for those born in the summer. Those born in August have over 0.2 years less schooling than those born in September, on average.

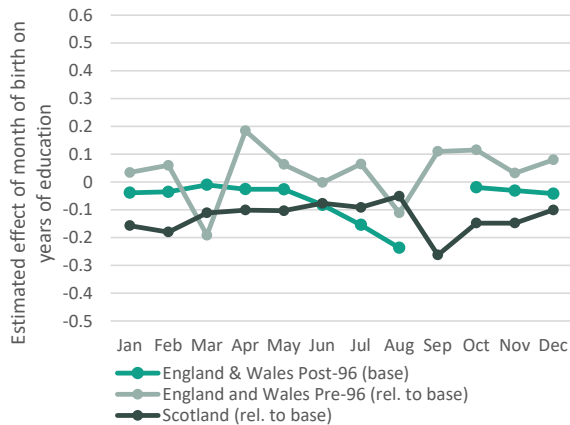
The turquoise line then shows estimates for individuals born before 1980 in England and Wales (and thus potentially affected by easter leaving rules). This shows some weak evidence of those born in the Spring having higher years of schooling, but not substantially so relative to other months. Given the structure of the rules and the data, it might also be hard to discern an impact of easter leaving rules on year of education (most people will have reported 16).

The dark grey line then shows the estimated impact of month of birth in Scotland relative to our base case in England and Wales. What we are seeking to test is whether the effects of being born in October and subsequent months is different in Scotland relative to the effect of other months in Scotland. A positive difference might indicate a positive effect of winter leaving rules.

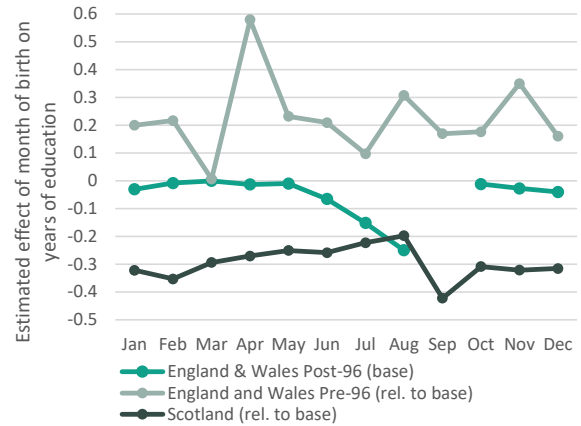
What we see is that those born in Scotland have lower years of education, on average, relative to our base cohort in England and Wales (which might just reflect cohort effects). However, for both men and women, the negative effects in October and subsequent months looks very similar to those seen in other months of the years. Indeed, apart from a dip in September, the effect of month in Scotland relative to England and Wales looks quite constant throughout the year. This provides little evidence for any effect of winter leaving rules in Scotland on years of education.

Figure 5.1 – Estimated effect of month of birth on years of education by gender, nation and broad cohort

a) Men



b) Women



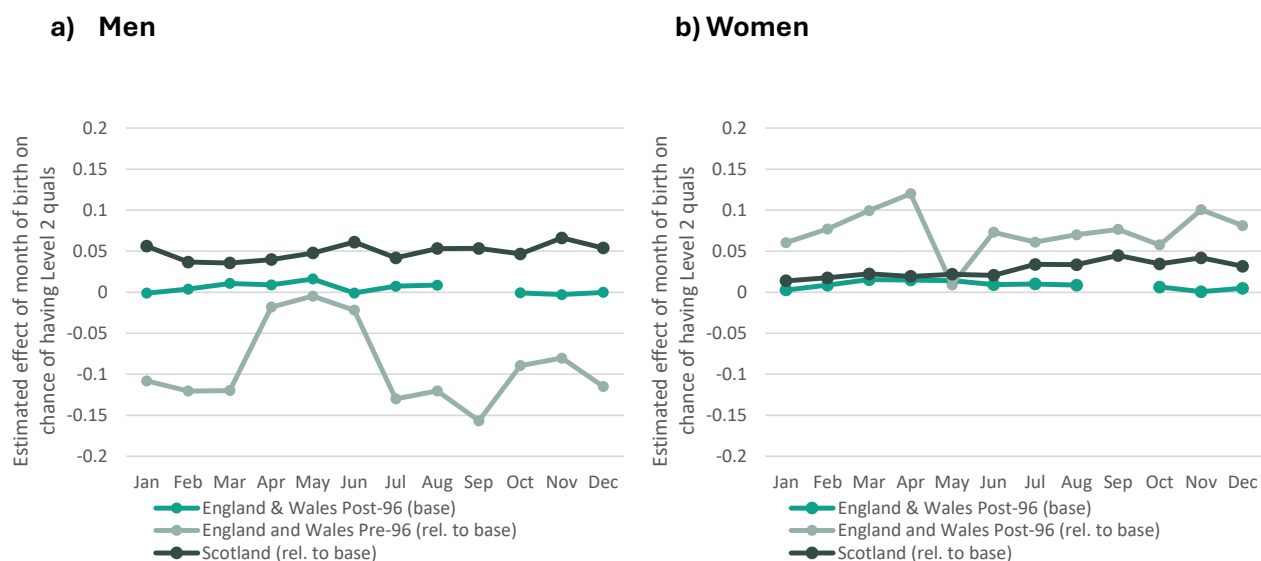
Notes: These estimates are based on an OLS model with further controls for individual cohorts interacted with nation and a quadratic effect of age. Figures are weighted by non-response weights. Underlying unweighted totals are N=338,429 for men and N=374,842 for women. Estimates for the base case in September are missing as this represents the omitted category.

Figures 5.2 and 5.3 then show the equivalent results for Level 2 and Level 3 qualifications. For the reference case in England and Wales, the effect of month of birth appears to be extremely small on both Level 2 and Level 3 qualifications.

For those born in England and Wales before 1980, we see some effect of easter leaving rules on Level 2 qualifications. Those born between February and June appear to have a higher chance of achieving Level 2 qualifications than those born before February, which is what Dickens and Smith (2011) find. However, there appears to be little evidence of any further effects on Level 3 qualifications.

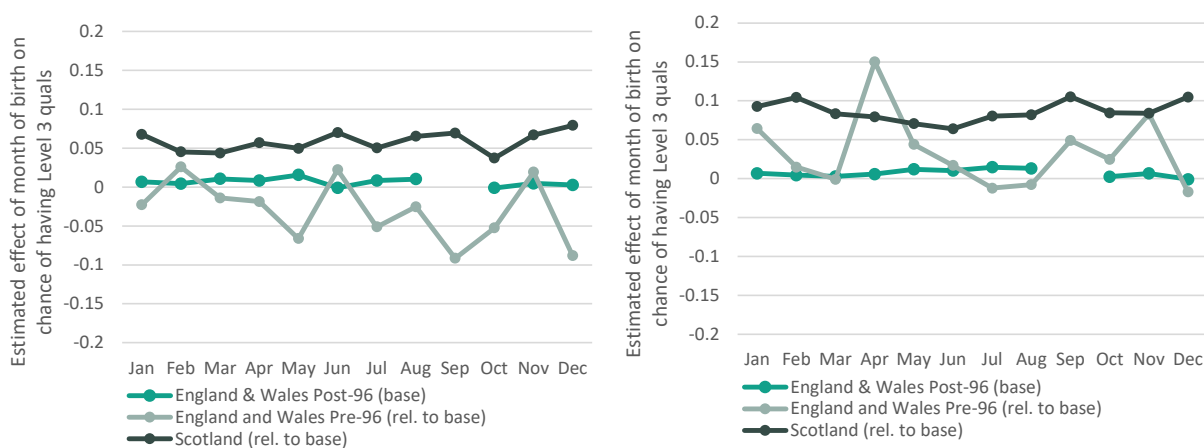
In the case of Scotland, we see higher levels of qualifications for all individuals, which is what would be predicted by our descriptive analysis in section 2. However, the effect of month of birth appears largely constant throughout the year, suggesting little effect of winter leaving rules.

Figure 5.2 – Estimated effect of month of birth on chances of achieving Level 2 qualifications or higher by gender, nation and broad cohort



Notes: These estimates are based on an OLS model with further controls for individual cohorts interacted with nation and a quadratic effect of age. Figures are weighted by non-response weights. Underlying unweighted totals are N=338,429 for men and N=374,842 for women. Estimates for the base case in September are missing as this represents the omitted category.

Figure 5.3 – Estimated effect of month of birth on chances of achieving Level 3 qualifications or higher by gender, nation and broad cohort

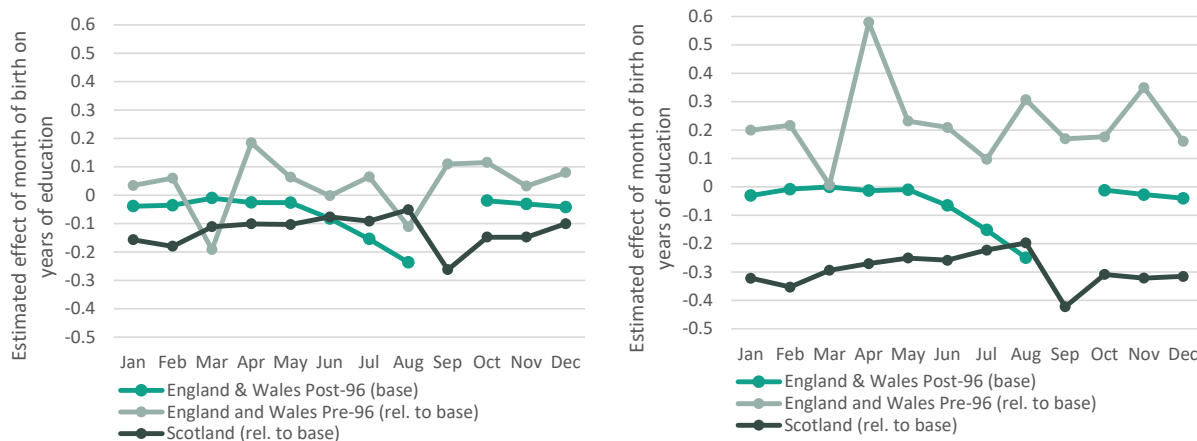


Notes: These estimates are based on an OLS model with further controls for individual cohorts interacted with nation and a quadratic effect of age. Figures are weighted by non-response weights. Underlying unweighted totals are N=338,429 for men and N=374,842 for women. Estimates for the base case in September are missing as this represents the omitted category.

Figure 5.4 shows the equivalent results for employment. For the reference case in England and Wales, the effect of month of birth appears to be extremely small on employment. For those turning 16 before 1996, there appears to be a small boost to employment for those born in the

Spring and Summer, consistent with the effect of winter leaving rules. For Scotland, there is no evidence of any differential effect of being born in October-February.

Figure 5.4 – Estimated effect of month of birth on chances of employment by gender, nation and broad cohort



Notes: These estimates are based on an OLS model with further controls for individual cohorts interacted with nation and a quadratic effect of age. Figures are weighted by non-response weights. Underlying unweighted totals are N=338,429 for men and N=374,842 for women. Estimates for the base case in September are missing as this represents the omitted category.

Our analysis therefore finds little evidence for any effect of winter leaving rules in Scotland on education outcomes. One potential explanation for this is that policy and practice might have responded to undo some of the effects. In particular, colleges and schools have created partnership agreements. This allows young people to be formally registered with schools until their statutory leaving date, but start college courses at the start of the academic year, rather than trying to start mid-way through the year at Christmas. There is evidence of successful partnerships between schools and colleges (Canduela et al, 2010), but this research also finds that the most disadvantaged young people remain least likely to progress.

Indeed, Scottish Government statistics show that young people who leave at their statutory leaving age in the Winter of S5 are the least likely to have a positive education or employment destination (88.5 per cent), which compares with 93 per cent for those who leave at the end of S4, 97 per cent for those who leave at the end of S6 and 90 per cent or more for others who leave during or at the end of S5.⁹ Analysis from Skills Development Scotland also shows that statutory winter leavers are the least likely to be participating in education, employment or training after their leaving date (as compared with summer leavers and those who left after their statutory leaving date).¹⁰ These statistics only related to initial destinations, but our above analysis of employment rates show no evidence of any benefits into longer term measures of employment either.

⁹ [Infographic overview of evidence on school leavers in Scotland - gov.scot](https://www.gov.scot/resources/infographic-overview-of-evidence-on-school-leavers-in-scotland)

¹⁰ [1. School Attainment - 15 to 24 Learner Journey Review phase one: analysis - gov.scot](https://www.gov.scot/resources/1-school-attainment-15-to-24-learner-journey-review-phase-one-analysis)

6. Conclusions and Policy Implications

In this report, we have examined long-run changes in education and labour market outcomes across the four nations of the UK, as well as the effects of differences in school leaving ages, particularly the case of winter leaving rules in Scotland.

Under winter leaving rules in Scotland, young people born between October and February must stay in school until Christmas, rather than leaving in the summer with their older peers born between March and September. As a result, they are obliged to spend an extra 4-5 months in school. Our analysis of these rules shows that young people affected by these rules do stay in school or education longer (as one would expect). However, there is no evidence that they benefit in terms of higher educational or labour market outcomes. This fits with the existing literature on the effects of school leaving ages. In particular, higher school leaving ages seem to have most effect when they oblige young people to stay on to a point when they can complete educational qualifications. They have less economic benefit if young people aren't completing qualifications. It is possible there are wider benefits to being in school or education, which is beyond the scope of this report.

Winter leaving rules might even be harmful if they force young people to stay in school until part-way through the academic year, after the start date of many academic and vocational courses. Responding to this concern, policy and practice in Scotland have effectively sought to undo some of the effect of winter leaving rules by allowing exceptional early entry into colleges under partnership agreements between schools and colleges. However, evidence still shows that winter leavers are the least likely to be in positive employment or education destinations.

Therefore, there seems to be little value in maintaining these winter leaving rules. It would be preferable for all young people in Scotland in the same school cohort to be able to leave school at the same time. This would either be the summer after the end of S4 (broadly equivalent to Y11 England), as is currently the case, or the end of S5, which would represent a higher leaving age than currently exists in Scotland.

More encouragingly, our descriptive analysis of long-run changes in educational and employment rates shows a substantial narrowing of inequalities by nation and gender over time. Having been less likely to possess Level 2 and Level 3 qualifications, women are now just as likely as men to possess these qualifications, if not more likely in some cases. Differences by nation have also shrunk over time, with a particularly large rise in education qualifications amongst women in Northern Ireland.

Some differences and concerns do persist, however. Men and women in Scotland remain more likely to possess Level 3 qualifications than in the rest of the UK. This links to our previous report showing higher educational qualifications in recent years (Robson et al, 2024). Our analysis in this report shows that this higher qualification rate in Scotland stretches all the way back to those born in the 1940s and 1950s, at least.

We also see some concerning signs in Wales, with men and women in Wales less likely to possess Level 3 qualifications than in the rest of the UK. This appears to be a more recent concern, with men and women in Wales born in the 1960s and 1970s seeming just as likely to gain education qualifications as those in England and Northern Ireland. This also links to our previous report, which raised concern about qualifications rates amongst young people in Wales (Robson et al, 2024).

Differences in employment rates by nation and gender have also shrunk dramatically across cohort. Women born in the 1950s were much less likely to be employed during their working lives, particularly in Wales and Northern Ireland. Women born in the late 1980s remain less likely to be employed (75-80 per cent) than men (85-90 per cent), but the differences are now much smaller and differences by nation are extremely small.

These long-run changes by cohort provide a salutary reminder of the narrowing in education and labour market inequalities over the long-run, which have dwarfed some of the documented effects of changes in school leaving rules. Despite this general positive picture over the long run, there remain some areas of concern. In particular, we observe lower employment rates amongst women across all four nations, despite equal or higher education qualification levels. We also see that men and women in Wales are less likely to possess Level 3 qualifications than men and women across the rest of the UK. This appears to be a more recent phenomenon and an area of concern.

Bibliography

Dickson, M & Buscha, F. 2018, 'A Note on the Wage Effects of the 1972 Raising of the School Leaving Age in Scotland and Northern Ireland', *Scottish Journal of Political Economy*, vol. 65, no. 5, pp. 572-582. <https://doi.org/10.1111/sjpe.12187>

Canduela, Jesus, Rachel Chandler, Ian Elliott, Colin Lindsay, Suzi Macpherson, Ronald W. McQuaid, and Robert Raeside. 2010. "Partnerships to Support Early School Leavers: School-College Transitions and 'Winter Leavers' in Scotland." *Journal of Education and Work* 23 (4): 339-62. doi:10.1080/13639080.2010.490550.

Clark, D. 2023. School quality and the return to schooling in Britain: New evidence from a large-scale compulsory schooling reform. *Journal of Public Economics*, Vol 223, 104902, <https://www.sciencedirect.com/science/article/pii/S0047272723000841>

Davies, N., Dickson, M., Davey Smith, G., van den Berg, G., and Windmeijer, F. (2018). The Causal Effects of Education on Health, Mortality, Cognition, Well Being, and Income: Evidence from the UK Biobank. *Nature Human Behaviour*, 2, 117-125.

Del Bono, Emilia and Fernando Galindo-Rueda. 2006. The Long Term Impacts of Compulsory Schooling: Evidence from a Natural Experiment in School Leaving Dates. Institute for Social and Economic Research Working Paper no. 2006-44.

Devereux, Paul J. and Robert A. Hart. 2010. Forced to be rich? Returns to compulsory schooling in Britain. *Economic Journal* 120, no. 549:1345-1364.

Dickson, M., & Smith, S. (2011). What determines the return to education: an extra year or a hurdle cleared? *Economics of Education Review*, 30(6), 1167-1176. <https://doi.org/10.1016/j.econedurev.2011.05.004>

Grenet, Julien, 2013. Extending Compulsory Schooling Alone Enough to Raise Earnings? Evidence from French and British Compulsory Schooling Laws, *Scandinavian Journal of Economics*, 115(1), pp. 176-210, January 2013.

Harmon, Colm and Ian Walker. 1995. Estimates of the economic return to schooling for the UK. *American Economic Review* 85, no. 5:1278-1286.

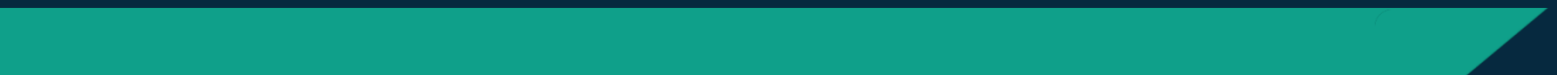
Janke, K., Johnston, D., Propper, C., and Shields, M. (2020). The Causal Effect of Education on Chronic Health Conditions in the UK. *Journal of Health Economics*. 70, 102252. Retrieved from: <https://doi.org/10.1016/j.jhealeco.2019.102252>

Machin, S., Marie, O., and Vujić. (2011). The Crime Reducing Effect of Education. *Economic Journal*. 121(552), 463-484.

Paterson, Lindsay. *Scottish Education and Society since 1945: Democracy and Intellect*. Edinburgh University Press, 2023. <http://www.jstor.org/stable/10.3366/jj.1011779>.

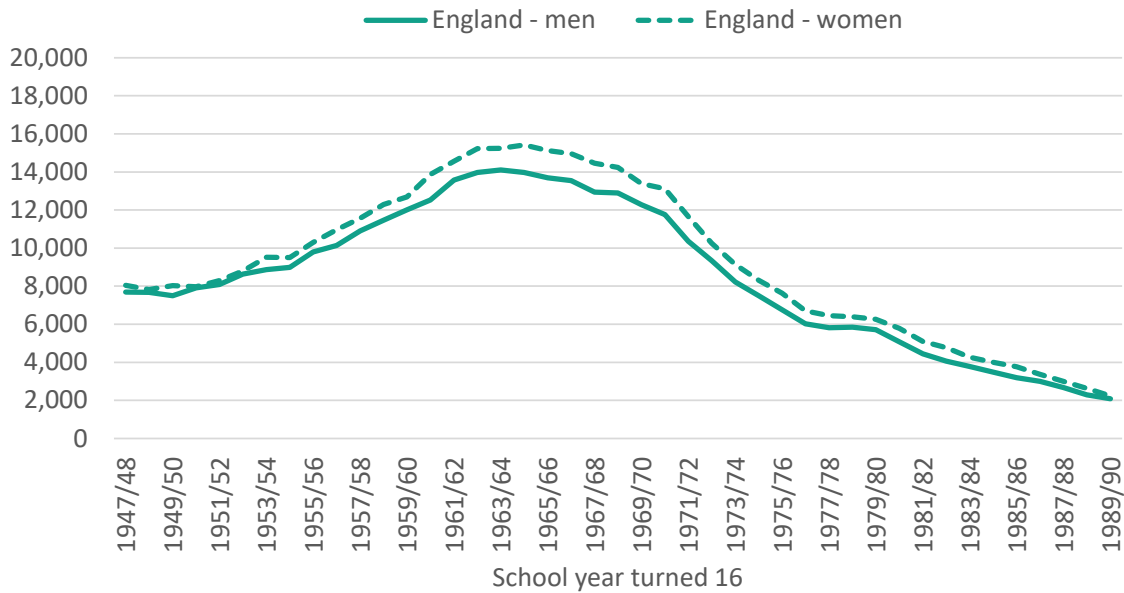
Robson, J., Sibieta, L., Khandekar, S., Neagu, M., Robinson, D. and James Relly, S. (2024). Comparing policies, participation and inequalities across UK post-16 Education and Training landscapes, Education Policy Institute, <https://epi.org.uk/publications-and-research/uk-nations-education-and-training/>

Annex



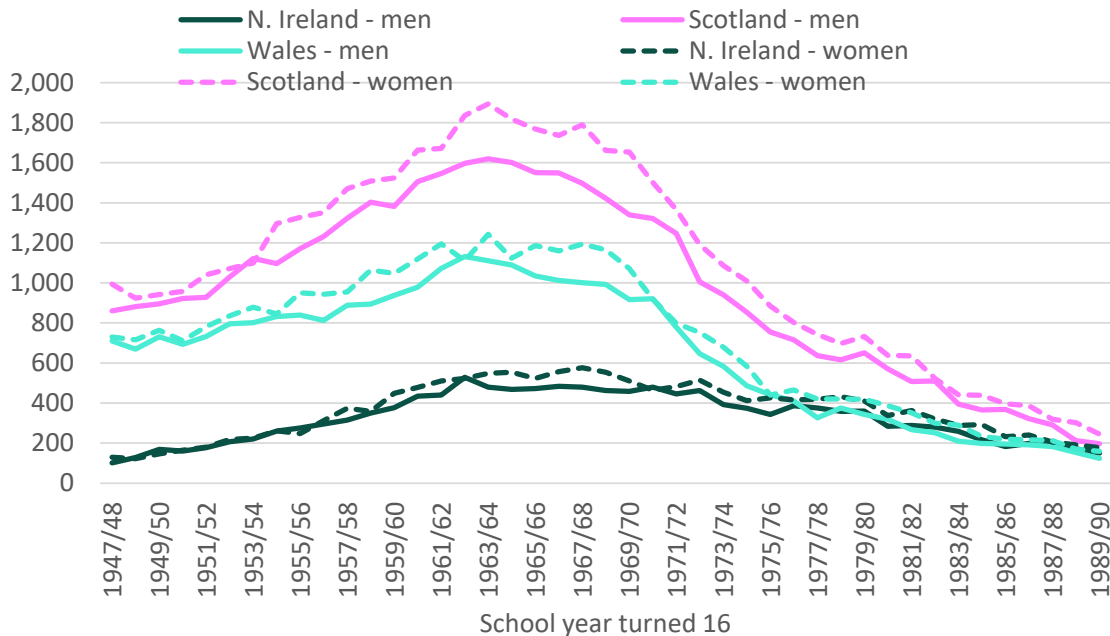
Annex

Figure A1 – Cell sizes by birth cohort across England



Notes: These figures relate to all individuals born in the UK, who left education before the age of 19 and aged between 25 and 59. All figures are unweighted underlying cell sizes.

Figure A2 – Cell sizes by birth cohort across Wales, Scotland and Northern Ireland



Notes: These figures relate to all individuals born in the UK, who left education before the age of 19 and aged between 25 and 59.