

A series of background briefings on the policy
issues in the December 2019 UK General Election

Education and Skills

Jo Blanden
Sandra McNally
Gill Wyness

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Education and Skills

CEP ELECTION ANALYSIS

Jo Blanden, Sandra McNally, Gill Wyness

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Summary

- A major weakness in the UK is the long tail of poorly performing schools and pupils, where the UK does not perform well relative to other countries, especially on basic skills.
- Austerity has caused school expenditure to fall dramatically and this is likely to have had big detrimental effects on the learning of young people, especially those from disadvantaged backgrounds.
- Large-scale structural reform – converting schools into academies – has not been successful for the most part. The focus needs to be on recruitment and retention of high quality teachers.
- The few people who attend private schools have a significant advantage in school examinations, in the probability of attending university and in the labour market.
- A third of young people do not get good GCSEs and often languish in the education system and the labour market. They are in danger of being forgotten in the election debate.
- Whether apprenticeships are a good investment depends on the type of apprenticeship on offer and whether they are directed at younger or older people. The debate on employer investment in skills needs to be widened beyond use of the apprenticeship levy.
- To date, expansions of early years provision has not been very successful in improving child development. As this policy also has fairly small effects on labour supply, this policy is primarily a financial transfer to working families.
- The increase in university tuition fees does not appear to have discouraged full-time enrolments. The recent Augar review has much to say about the financing of higher education. Whether political parties will engage with the detail remains to be seen.

Introduction

Debates about how to improve education and skills are likely to be an important theme in the run-up to the general election. This briefing summarises evidence on education and skills from the Centre for Economic Performance (CEP). It covers key issues across all educational phases, summarising what we know and considering some of the policy changes that might help to improve outcomes.¹

Education plays many important roles in society, but this briefing focuses on economic objectives. Education and skills improve the productivity of individuals, helping them to advance in the labour market and increasing national productivity. Improving education and skills for the disadvantaged is key to helping to reduce inequality and improve social mobility across generations.

The UK is mid-table overall in most international rankings of schools (LSE Growth Commission, 2013). A major weakness is the long tail of poorly performing schools and pupils, where the UK does not perform well relative to other countries. Austerity has caused school expenditure to fall dramatically and this is likely to have had big detrimental effects on the learning of young people, especially those from disadvantaged backgrounds.

Unfortunately, the flagship academies policy has for the most part made little difference to overall pupil outcomes. At the same time, private schools continue to offer a substantial advantage to pupils in terms of examination results and the probability of attending university. Individuals who are educated in private schools earn more and this pay premium has increased significantly over time.

In early years education, efforts to improve access to good quality provision, have not (so far) made much difference to the educational attainment of children. The number of apprenticeship starts have reduced. One area in which the UK has done well is in the increased enrolment at universities. Despite major changes to university financing, there has been no decline in enrolments, but there has been a dramatic reduction in part-time students.

Early years

Early years policy touches on two politically hot topics: social mobility and gender equality. Children from disadvantaged backgrounds are already behind when they start school and achievement gaps continue to grow throughout school, making a substantial contribution to the low intergenerational mobility in the UK (Goodman and Gregg, 2010).²

Early education has the potential to change this by helping to improve child development and enabling children to start school on a more level playing field. The provision of childcare, which goes hand in hand with this education, can enable mothers to work, raising family income and preventing women from experiencing gender pay gaps, which have been shown to increase strongly when women become mothers.

¹ Education is a devolved area of policy in the UK. Most of the research cited in this briefing has been undertaken for England specifically.

² See also the CEP Election Briefing on Social Mobility by Lee Elliot Major and Steve Machin. <http://cep.lse.ac.uk/pubs/download/ea045.pdf>

Childcare

Our research on childcare has focused on the impact on child development.

Unfortunately, the blanket expansion of free childcare appears to have had limited effect. Blanden et al (2016) show that the initial roll-out of 12.5 hours of free part-time education and care for three year olds in the early 2000s (which subsequently was expanded to 15 hours) had a minimal effect on children's educational achievement. This is in large part because most children were attending similar provision before it became government funded, so their ability to access early education did not change much.

Even if policy is able to increase attendance, Blanden et al (2019) suggest that only high quality provision has a measurable effect on outcomes: spending more months receiving early education substantially improves child development only when the child attends an Ofsted rated 'Outstanding' setting. This clearly has implications for social mobility if disadvantage families struggle to access high quality provision.

Unfortunately, Blanden et al (2019) show that achieving high quality in this sector is not easy. For example, putting more graduate-trained workers into nursery has very little effect on children's outcomes.

Policies on early years education and care have multiple objectives: improving children's outcomes, supporting maternal employment and easing family finances for working parents. Any policy pledges in this area need to be carefully considered in light of these objectives. In the past, expansions of early years provision have not been very successful in improving children's development, but they have had more impact in the other two domains.³

Based on available evidence to date, policies to expand provision of free childcare are effectively a transfer to 'working families'. To have effects on child development, there would need to be a focus on the quality of provision, which would require substantial investment. There needs to be a debate on whether universal coverage or targeted spending on quality provision is a better use of public funds. Much depends on the primary objective of the policy.

Schools

School expenditure

In the sustained climate of austerity since the global financial crisis in 2008, school education budgets have suffered (despite being relatively protected compared with other public services). Britton et al (2019) show that total school spending per pupil in England has fallen by 8% in real terms between 2009/10 and 2019/20. The bulk of these funding cuts were driven by a 57% reduction in spending per pupil on services provided by local authorities and a more than 20% cut in sixth form funding per pupil.

³ Brewer et al (2018) find that providing childcare for 30 hours per week does improve maternal employment, by a few percentage points, but it is not transformative. Since September 2018, 'working families' have been able to access 30 hours of free childcare, and the positive impact of this on family finances was highlighted by the government as an important motivation for this extension.

Such substantial cuts are likely to have significant negative effects on pupil outcomes. Gibbons et al (2018) exploit a quirk in the national funding formula to examine the impact of funding on educational outcomes for pupils age 11.⁴

Changes in school expenditure have a substantial impact on pupil achievement, especially for those from disadvantaged backgrounds. A 30% increase in average expenditure per pupil (over four years) would reduce the gap between the UK and the top performer in the PISA (2015) international rankings by over a third.⁵ If this increase were all spent on disadvantaged pupils, our estimates suggest that it would almost eliminate the (very large) attainment gap between pupils eligible to receive free school meals and other pupils.

Academies

At the same time as responding to the overall level of funding, schools are also adapting to continuing changes to the amount of autonomy that they can exercise.

Up until the early 2000s, most state schools in England operated in close collaboration with their local authority. ‘Academy’ schools were initially seen as a remedial policy targeted at a small number of secondary schools. The idea was that private sector ‘sponsors’ would take control of struggling state schools and be given the freedom to innovate.

The initial programme was small scale with just over 200 (about 3%) secondary schools having gained academy status before 2010. Eyles and Machin (2019) and Eyles et al (2016) find that the short- and long-term effects of attending these schools were positive and substantial. Key changes included a change of leadership and a change in the curriculum offered.

The academies programme has changed in nature and scale since 2010 when the coalition government created a radical new programme. Currently, over 70% of secondary schools are academies and just over a quarter of primary schools (which were permitted to convert by the 2010 Academies Act). Over time, many of the original requirements to become an academy have been removed (such as the requirement to have a sponsor: most academies do not).

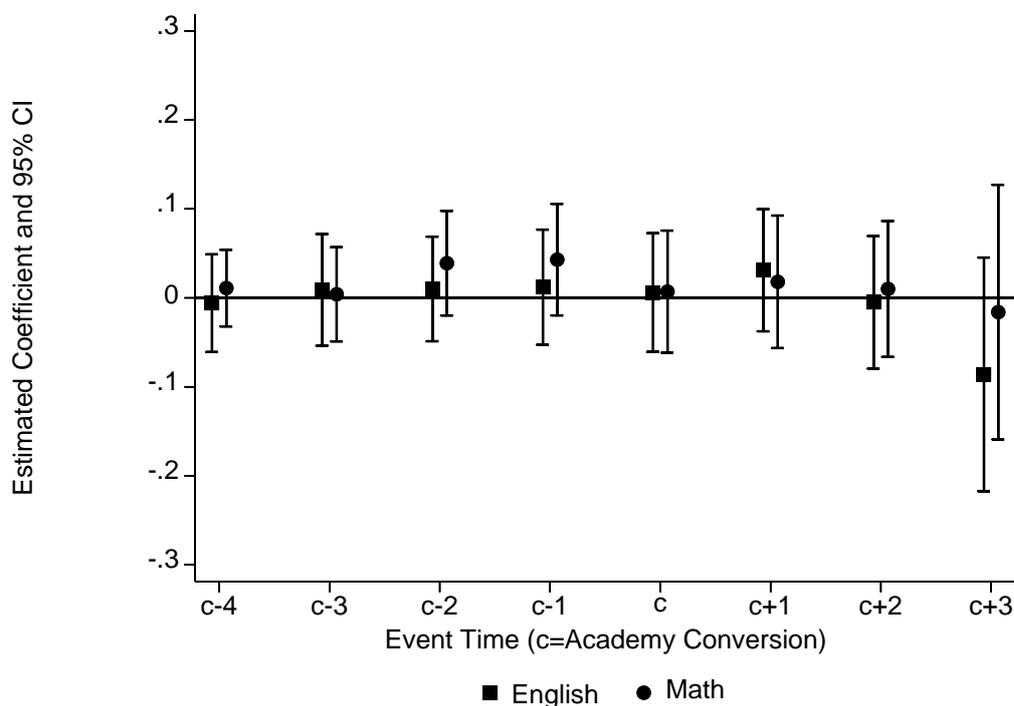
The characteristics of schools that converted to academy status from 2010 onwards differ markedly from the characteristics of the small number of schools that converted to academies in the early 2000s. The latter had a high percentage of pupils with low prior attainment and from disadvantaged backgrounds. The opposite is true for schools that became academies after 2010. This means that it is not possible to extrapolate from the early results on the effects of academies, to schools that converted following the major expansion in 2010.

Unfortunately, for the most part, the expanded programme has not improved outcomes for pupils attending these schools (Andrews et al, 2017). This is the case for both primary and secondary schools. For example, Figure 1, taken from Eyles et al (2017) shows that converting to academies had zero effect on the educational attainment of pupils attending primary schools (key stage 2 performance). The bars in the figure show the causal effect of attending a primary school that converted to an academy at the time of conversion (C) and several years before and after conversion: conversion to a new status did precisely nothing for pupils attending these schools.

⁴ This quirk leads to schools on either side of a local authority boundary getting very different levels of funding

⁵ In the PISA 2015 results, Singapore was the top OECD performer in mathematics with a score of 564. The UK was ranked as number 27 with a score of 492.

Figure 1: The effect of academy conversion on pupil outcomes at key stage 2



Note: From Eyles et al (2017): this shows instrumental variable (IV) estimates from an event study for pupils attending academies four years prior to academy conversion (c-4) to three years after (c+3). The effects of being in an academy post-conversion are numerically small and insignificant (as the c to c+3 coefficients all overlap with the zero line on the figure). Moreover, there is no sign of pre-policy trends, nor any gradual improvement in results post-conversion.

Politicians of all parties have put too much faith in changing school structures. Unfortunately, the evidence suggests that such changes can be costly and do not always work. It is more important to address the reasons why schools underperform in the first place, such as lack of funding and, in particular, difficulty in recruiting and retaining good teachers. The economic research evidence has an unusual level of agreement that improving teacher quality is particularly efficacious for student outcomes.⁶

Private schools

Private schools offer high quality education, but at a price that is out of reach for most parents. The issue of private schools and their status is again on the agenda, in the debates on social mobility, on the private schools' charitable status and on inequality. This is not surprising given that the evidence on the advantages conferred by private schools is clear. While 6% attend private schools, they do much better in GCSEs and A-levels. In 2018, the proportion of private school students achieving A*s and As at A-level was 48%, compared with a national average

⁶ Hanushek (2011) estimates that replacing the bottom 5-8% of teachers with average teachers could move the United States near the top of international mathematics and science rankings with a present value of \$100 trillion. Of course, there are plenty of other school-level policies that are also effective for improving educational outcomes (see, for example, Cassen et al, 2015).

of 26%; while for GCSEs, in terms of achieving an A (or grade seven or above), the respective figures were 63% and 23% (Green and Kynaston, 2019).

As a consequence, university attendance and graduation by students educated at private schools are also disproportionately high. But conditional on prior attainment, private school students are outperformed at university (Naylor et al, 2004).

But on entry to the labour market, the advantage switches back on again. Figure 2 shows a significant wage premium of private school over state school for the 1958 and 1970 birth cohorts. Moreover, this has been rising over time. In 1991, at age 33-34, the average private/state advantage was 25%; by 2004, the pay premium had significantly increased to 41%, with similar magnitude increases for men and women.

Figure 2: The private/state school wage differential



Source: Elliot Major, L, and S Machin (2018)

Further and higher education

Post-16 education: the forgotten third

New T-level qualifications and reforms to higher education (free or otherwise) will not touch the bottom third of students who each year fail to achieve a grade 4 in GCSE English and mathematics. These pupils have been dubbed the ‘forgotten third’.⁷ These pupils will usually go to colleges of further education to enrol in low-level qualifications (level 2 or below).

Nowhere is the education system more confusing. There are many different qualifications and no clear pathways. Hupkau et al (2016) show that many such pupils come from disadvantaged backgrounds and that fewer than half will progress to education at level 3 or above (that is, A-level or equivalent).

⁷ <https://www.ascl.org.uk/Our-view/Campaigns/The-Forgotten-Third>

One major barrier to progressing to further education comes from poor English language results at GCSE. Machin et al (2018) show that even narrowly missing a grade 4/C in GCSEs can have major consequences for pupils. The administrative data that we use follows the cohort that took the GCSE examination in 2013 over the next three years of their lives.

The results show that narrowly missing the threshold in English language decreases the probability of enrolling in a higher level qualification by at least 9 percentage points (illustrated in Figure 3).⁸ There is a similarly large effect on the probability of achieving a higher (‘full level 3’) academic or vocational qualification by age 19. There is also an effect on the probability of entering tertiary or higher education.

Perhaps most surprisingly, narrowly missing the threshold increases the probability of dropping out of education at age 18 by about 4 percentage points (in a context where the national average is 12%) – illustrated in Figure 4. It increases the probability of becoming ‘not in education, training or employment’ (NEET) by about 2 percentage points.

The effect of grade C/4 on the marginal student

Figure 3: Enrolling in level 3

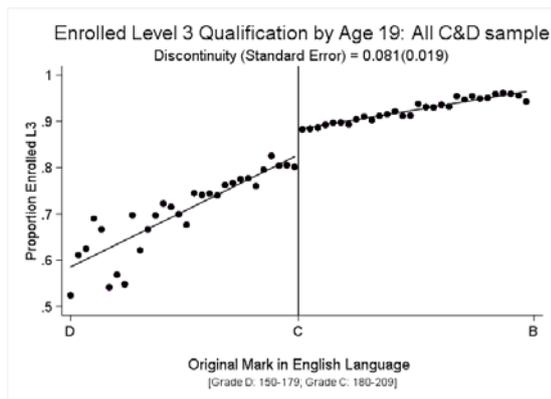
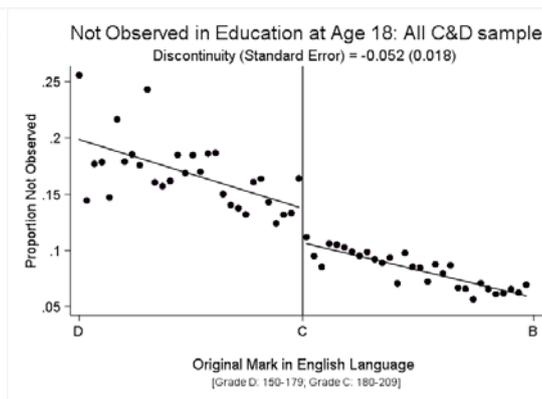


Figure 4: NEET



Note: From Machin et al (2018): the figures show how outcomes for pupils ‘jump’ at the threshold for grade C in English language (‘grade 4’ in the new system). The ‘original marks’ are before any appeals are made (AQA data). See the paper for full analysis.

We show some evidence on the mechanisms through which failing to reach this threshold in English leads to poor outcomes. These involve a narrowing of opportunities that arise within the educational system in the choice of post-16 institution and course; pupils end up in institutions with less well performing peers.

In a well-functioning education system, there would be ladders for the marginal pupil – or at least alternative educational options with good prospects. Machin et al (2018) suggest that the marginal pupil who is unlucky pays a high price.

⁸ Comparing pupils on the threshold of success and failure makes it possible to explore whether just passing or just failing has consequences for them in relation to their probability of early drop-out from education (and employment) and their probability of accessing higher level courses, which are known to have a positive wage return in the labour market.

Politicians who are serious about addressing social mobility and the shortage of people progressing within vocational education need to do more for the third of young people who are not able to access level 3 qualifications and get forgotten. The policies put forward by parties to date do not address this group of people.

Apprenticeships

Although the vocational system has many problems, apprenticeships have a good reputation and are frequently put forward as a way of addressing the UK's skill problems. The purpose of apprenticeships is to address two important problems in the UK: poor productivity; and a significant fall in employers' investment in training over recent decades (NAO, 2019).

Apprenticeships have been a focus of policy in the last few years with a government commitment to increase the number of apprenticeships to three million over five years (2015-2020) and the introduction of the apprenticeship levy (which is payable by large firms but can be clawed back to cover the direct costs of apprenticeship training).

Cavaglia et al (2018) investigate whether there is a payoff to starting an apprenticeship for young people in England. We use administrative data on school leavers to estimate whether those who undertake an apprenticeship earn more compared with if they had undertaken equivalent vocational education in the classroom.

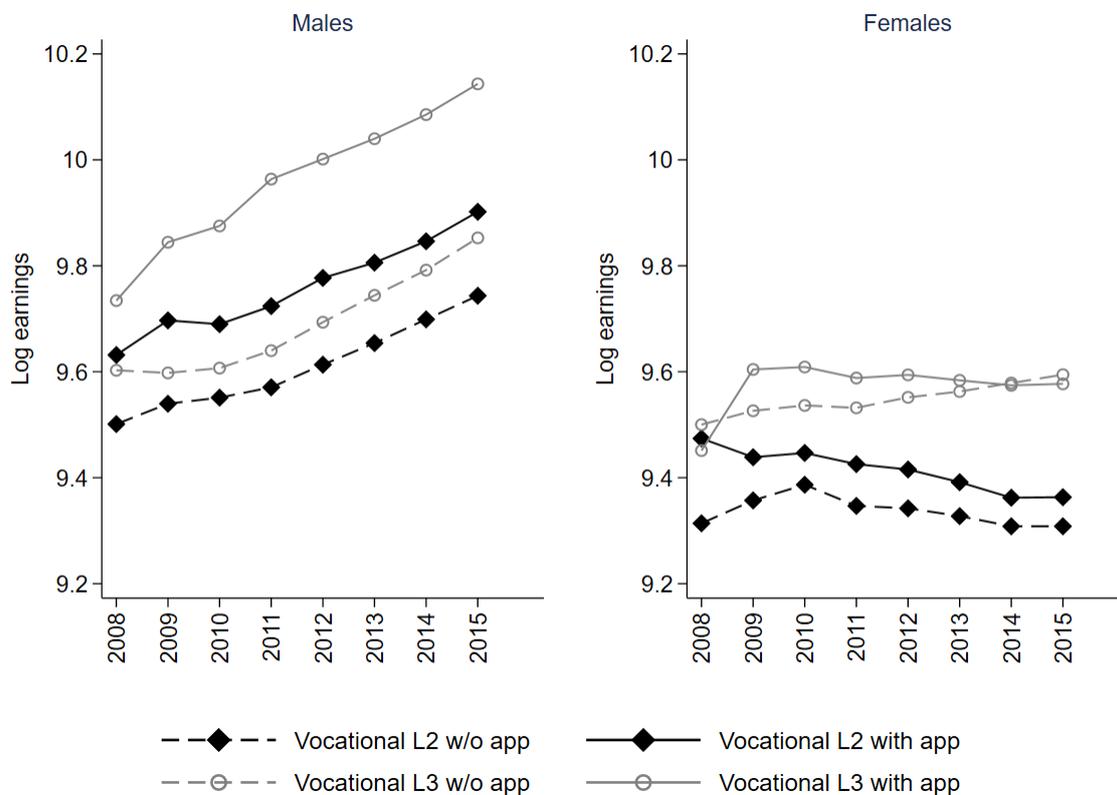
There is a sizeable average earnings return, although it varies strongly for different types of apprenticeship. We look at people who finished their GCSEs in the early to mid-2000s, so that we can observe their earnings in the labour market a few years later.⁹

Figure 5 illustrates the median earnings over time for men and women who completed their GCSEs in 2003 (that is, in the labour market between 2008 and 2015). The figure shows much stronger earnings growth for men than women. It also shows that those who undertook an apprenticeship have higher earnings than similar people who did not (that is, people with the same highest level of educational achievement). Third, the difference in earnings between those with and without an apprenticeship is much higher for men than for women.

These results are borne out in detailed analysis where we include many controls (such as prior attainment and demographics) and where we try to deal with the causality issue. The difference in average returns of an apprenticeship between men and women is largely explained by different sectors of specialisation. For example, engineering and construction are very popular with men, and child development and health and social care are very popular with women. These sectors have vastly different returns to undertaking an apprenticeship. The wider message is that apprenticeships are not all created equal. The individual returns (and likely consequences for productivity) vary according to the type of apprenticeship.

⁹ The types of apprenticeships undertaken then are similar to those currently on offer, although very recent reforms (from frameworks to standards) are too recent to evaluate.

Figure 5: Median earnings over time for those educated up to level 2 or 3 (with or without an apprenticeship)



Note. From Cavaglia et al (2018). Median earnings are shown for four groups: those who achieved a maximum education of level 2 (equivalent to GCSEs) – one group undertook an apprenticeship and the other did not; those who achieved a maximum education of level 3 (equivalent to A-levels) – one group undertook an apprenticeship and the other did not.

Since the introduction of funding and regulatory changes in 2017, there has been a large fall in the number of apprenticeship starts in most sectors. While the quality of apprenticeships has probably increased as a result of reforms,¹⁰ concerns include the fact that young people (those under 25 years old) account for less than 60% of all starts. Morris and McIntosh (2018) show that the wage return (and likely contribution to productivity) is much higher for younger workers.

The policy debate includes whether regulations should change how the apprenticeship levy is spent and indeed whether it should continue to be used only to fund the training of apprentices (as opposed to other forms of training). Given that different types of apprenticeship produce very different returns, there is a good case for a combination of incentives and regulation to influence how employers can spend levy funding.

As apprenticeships are not the most suitable form of training for many purposes (for example, for ‘upskilling’ of older workers), there is also a good argument for enabling employers to

¹⁰ The requirement that 20% of an apprentice’s time is spent off the job is now written into funding rules. The ongoing change from apprenticeship frameworks to standards is also likely to increase quality.

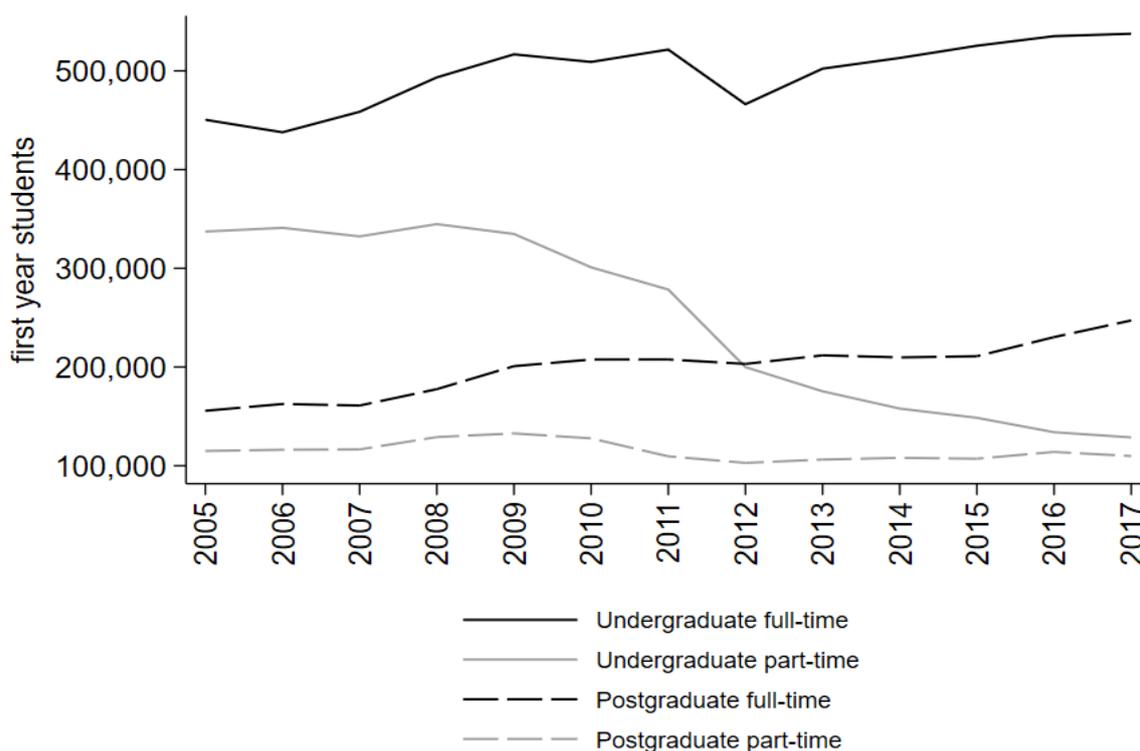
spend the levy on other forms of accredited training. But this will not be sufficient on its own because 98% of employers do not pay the levy. There needs to be a wider discussion of how employers may be given incentives to invest in their workforce. For example, Costa et al (2018) make the case for human capital tax credits.

Higher education

Despite the £9,000 annual undergraduate fee cap having been in place since 2012 (increased to £9,250 per year in 2017) higher education enrolments have not been dramatically affected. The trend in enrolments has been somewhat flat, although this cannot be tied directly to the fee hike.

Of potentially greater concern is the severe downturn in part-time enrolments (see Figure 6). This is likely to have arisen as a direct result of the 2012 reforms, which led to increases in part-time fees, but with restrictions on income contingent loans, very much highlighting the importance of this feature (Callender and Thompson, 2018).

Figure 6: Enrolments of first year students



Source: Higher Education Statistics Agency, 2019

The Labour Party declared in their 2017 manifesto that they would abolish fees and have maintained this pledge entering the 2019 election. Abolishing fees would do little to help poor students since fees are not paid upfront, but instead on graduation, once the graduate is earning over £25,000 per year (at 9% of earnings above this threshold). It would also do little to help low earning graduates, many of whom will never have to repay their fees in full (Belfield et al, 2018).

The broader context is that individuals from lower socio-economic backgrounds are less likely to enter university at all, and in particular are less likely to attend Russell Group universities.¹¹ This is mainly explained by prior attainment at GCSE and A-levels (Chowdry et al, 2013). The level of tuition fees is immaterial for these individuals.

A policy of low (or zero) tuition fees would benefit those who go on to do well in the labour market disproportionately and it would be paid for by the majority who do not go to university (in the form of higher taxation). Murphy et al (2019) highlight many other issues with free tuition systems, showing that the UK's increase in fees dramatically improved investment in the sector, coinciding with university expansion (which typically benefits more disadvantaged students), and increased money for student support.

The other political parties are less clear in their stance on tuition fees. The recent Augar review of higher education finance in the UK highlighted many problems with the current fee system. One key issue is that the average fee charged by universities is higher than was anticipated by the government and, because of the income contingent repayment system, a large proportion of students never repay their fees, leaving government to cover the cost. There is huge variation in the returns to a degree by subject and institution (Britton et al. 2019) and thus some types of student have far greater ability to repay their loans in full than others.

Moreover, universities have a greater incentive to offer lower cost courses (such as creative arts and humanities) than higher cost subjects such as STEM courses (which the government typically sees as higher value), given the fee cap is the same for each. Augar recommended that the fee be reduced to £7,500 per year. Theresa May backed this drop in fees, but it is less clear that Boris Johnson is in favour of a fee reduction.

The Augar review recommended that the total reduction in resources from the fee cut (to £7,500 per year) be matched with an equivalent increase in average per student grant funding from government, so that the average per student resource to the sector stays level in cash terms.

There remain other issues with the current arrangements for financing higher education. Most notably, a recent change in government accounting rules means that the amount of student loans not expected to be repaid must now be counted towards the government deficit. This increases the incentive for government to cut fees, and it also strengthens the case for re-introducing maintenance grants (which were abolished in 2016 in favour of loans). Dearden et al (2014) highlight the importance of student grants for participation.

The proposals in the Augar review were informed by research evidence as well as the views of key stakeholders. It remains to be seen whether political parties will engage with the arguments put forward in the review or whether the debate remains at a superficial level.

Final words

Increasing productivity and improving social mobility requires investing in the education and skills of individuals from the early years onwards. But resources are not infinite and some of the education policies proposed by the political parties are unlikely to produce any beneficial effect on educational outcomes - these include further structural change (for example, more

¹¹ This raises another issue of whether admissions to university should be contextual (i.e. take account of a person's circumstances in some way).

‘academisation’ or more free schools); roll-out of early years provision with no change in quality; and the abolition of tuition fees.

These policies may be desirable (at least for some groups) for other reasons, but if funding was instead put into general school expenditure and improving teacher quality we would be likely to see positive effects on student outcomes.

Also relevant is who gets good quality education and the barriers that arise because of the admissions policies of schools and universities. Those attending private schools have high returns for their education and therefore equity issues are a cause for concern. The bottom third of the cohort languish within the education system and later on. Attention needs to be given to their acquisition of basic skills and their future trajectories in education and the labour market.

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Authors

Jo Blanden is a Reader in Economics at the University of Surrey and a Research Associate of the Centre for Economic Performance at the London School of Economics.

Sandra McNally is a Professor of Economics at University of Surrey and Director of the Education and Skills Group at the Centre for Economic Performance at the London School of Economics. She is director of the Centre for Vocational Education Research as LSE.

Gill Wyness is a Senior Lecturer at the UCL Institute of Education, and a Research Associate at the Centre for Economic Performance at the London School of Economics.

For further information, contact:

Jo Blanden (on early years): j.blanden@surrey.ac.uk

Sandra McNally (on schools and post-16 further education): s.mcnally1@lse.ac.uk

Gill Wyness (on higher education): g.wyness@lse.ac.uk

or Helen Ward: 07970 254872, h.ward1@lse.ac.uk

or Romesh Vaitilingam: romesh@vaitilingam.com

