What can data tell us about Higher Education (HE) participation?

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Outline of talk

How data held at the UKDS are used to examine

- Inequality in Higher Education (HE) participation
- Monetary returns to HE participation
- How HE finance policy can affect participation in higher education
UK higher education finance policy and HE participation over time

1970s: Post-Robbins Expansion of HE Sector
1992 HE Act: 44 "new" universities in England
1990: First student loans
1998: First tuition fees
1999: grants abolished
2004: grants restored
2006: £3,000 top up fees introduced
2007: grants increased
2012: fees increased to £9,000

Source: UCAS
Using data to understand HE participation
Inequality in HE participation

To look at inequality in HE participation – how participation varies by parental income/background - the key data issue that arises is the requirement to match up data on children’s education with the income/background of their parents.

2 main types of sources that one can draw upon:
- household level data - contain information on all household members
- longitudinal data - enable one to match up children with parents over different time periods

To study HE the household level surveys are, unfortunately, of little use as the majority of HE students do not live in the family home. The longitudinal data are very useful.
Inequality in HE participation

Blanden and Machin (2004) explore changes over time in HE participation and attainment between people from richer and poorer family backgrounds during 1970s-1990s, when the UK higher education system expanded at a rapid rate.

Use two of the main British cohort studies, the National Child Development Study 1958 (NCDS) and the British Cohort Study 1970 (BCS); and British Household Panel Survey.

Show that HE expansion has not been equally distributed across people from richer and poorer backgrounds. Rather, it has disproportionally benefited children from relatively rich families.
Inequality in HE participation

Conclude that socioeconomic gap in degree achievement in UK worsened during 1980s and early 1990s

→ This finding emerges from the analysis of longitudinal data from three time periods that enables the authors to study temporal shifts in HE by parental income for children going to university in the 1970s, 1980s and 1990s
Monetary returns to HE participation

In deciding whether to participate in Higher Education: people face a trade-off between costs and expected returns

What are the monetary returns to a degree, i.e. how much more does one earn with a degree than without?

Estimating this requires detailed data…
Monetary returns to HE participation

Earnings ($Y$) are a function of education ($E$); earnings are also a function of lots of other things ($X$), so it's important to control for all of these other factors to estimate the effect of education on earnings

$$Y = f(E, X, u)$$

To estimate this type of model, need rich datasets containing individual-level earnings ($Y$), educational attainment ($E$), and other relevant factors such as marital status, fertility, ethnicity ($X$)

What is “$u$”? Some factors affecting earnings are hard to measure and therefore to observe in data sets

For instance, individuals of higher ability are, on average, likely to earn more. This is hard to observe ($u$) – but we can proxy it, if we have the right data…
Monetary returns to HE participation

Blundell et al (2005) show that a birth cohort study is “ideally suited for evaluating the impact of education on earnings”

Birth cohort studies contain:
- extensive and commonly administered ability tests at early ages (proxy for “u”)
- accurately measured family background and school type variables; prior educational attainment e.g. throughout school years, often through linked admin data (“X”)

So can control for all of these factors, which is really important to make sure we estimate the return to education accurately,
  i.e. the effect of education on earnings, net of the effect of family background, ability and prior educational attainment

They also contain accurate measures of
- educational qualifications (“E”)
- earnings and how they are changing over time (“Y”)
Using data to understand effects of UK HE policies
Example 1 – Distributional effects of HE funding reforms

Political Landscape

Major debate in UK about how to finance HE

Funding/resources per student has been steadily declining since 1973

Until recently, taxpayers almost completely funded HE in the UK

Upfront fees of £1,200 per year introduced in 1998; from 2006/07 deferred fees of to £3,000 introduced; raised to £9,000 in 2012…
Example 1 – Distributional effects of HE funding reforms

Students to leave university with debt of ~£20,000 for a three-year course (under 06/07 system)

Repayment of debt is “income-contingent”, i.e. a function of graduate earnings

So how much will graduates be expected to pay back each year?

To answer this, would ideally like to observe lifetime future earnings of graduates – clearly impossible!
Example 1 – Distributional effects of HE funding reforms

Simulate how much graduates earn over a lifetime, Dearden et al (2008)

- Estimate age-earnings profiles using LFS panel
- Predict annual change in wage, conditional on age; separately for males and females
- Combine with average starting pay to obtain predicted future earnings

Use these simulated graduate earnings profiles to understand likely effects of fees on debt repayment
Age earnings profiles

graduates

non-graduates
Example 1 - Distributional effects of reforms

Also important to know full *distribution* of graduate earnings in order to see impact of policies, as loan repayments are income contingent

→ For a given level of debt on graduation, graduates who end up earning less over their lifetime will eventually repay less of the debt than higher earners

<table>
<thead>
<tr>
<th>Decile of lifetime graduate earnings distribution</th>
<th>Net present value of debt repayments</th>
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<tr>
<td>Richest</td>
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Example 2 - Impact of maintenance grants on HE participation

Student aid – also referred to as grants or subsidies – is widely used as a tool to encourage students from the least represented groups to enrol in HE.

Maintenance grants continue to play an important role in the UK HE finance package.

Grant reform: Grants abolished in UK in 1998, and then reintroduced from 2004.

Dearden et al (2014) estimate the effect of this change in grants on HE participation.
Example 2 - Impact of maintenance grants on HE participation

To do this, need to know how much grant an individual is eligible for: no data source reports this

However, grant level is a function of parental income:

So to calculate person’s grant eligibility, need to observe parental income; Also need to observe which year they are eligible to enter HE
Example 2 - Impact of maintenance grants on HE participation

Also need to observe
- whether person goes to HE or not
- different people over time, so can compare people’s HE decisions before and after grant reform introduced

Labour Force Survey ideally suited because
(a) It allows one to work out grant level student would be entitled to
   – Can link students to parents, and therefore to parental earnings
   – Can use date of birth (restricted access) to determine when an individual is eligible for entry to HE
(b) Time series: quarterly data, starting 1992
(c) Observe HE participation
(d) 1,800 18 year-olds per year: big sample sizes

This is the only UK data source to combine all of these pieces of information

Find that the grant reform led to an increase in participation of around 3.95 percentage points
Looking ahead

UK Millennium Cohort Study, follows cohort born in 2000/01

Next sweep planned for age 17 (age 14 currently in the field)

Will be extremely valuable in considering transition into HE in a few years’ time; a unique opportunity to measure factors that underlie different types of transition into adult life, which may affect future well-being in unprecedented ways

In addition, MCS is the first of the birth cohorts that will be exposed to new HE funding regime
References


