Better than guessing.

Using data to be successful in higher education

**Dr Mark Corver, Founder, dataHE.
@markcorver
www.dataHE.uk**

**Professor Nora Ann Colton, Director of UCL Global Business School for Health.
@NoraAnnColton**

WONKHE

MAKING SENSE OF HIGHER EDUCATION

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Centre, London

Data and success in HE

Image: Copyright and by kind permission Nottingham Trent University
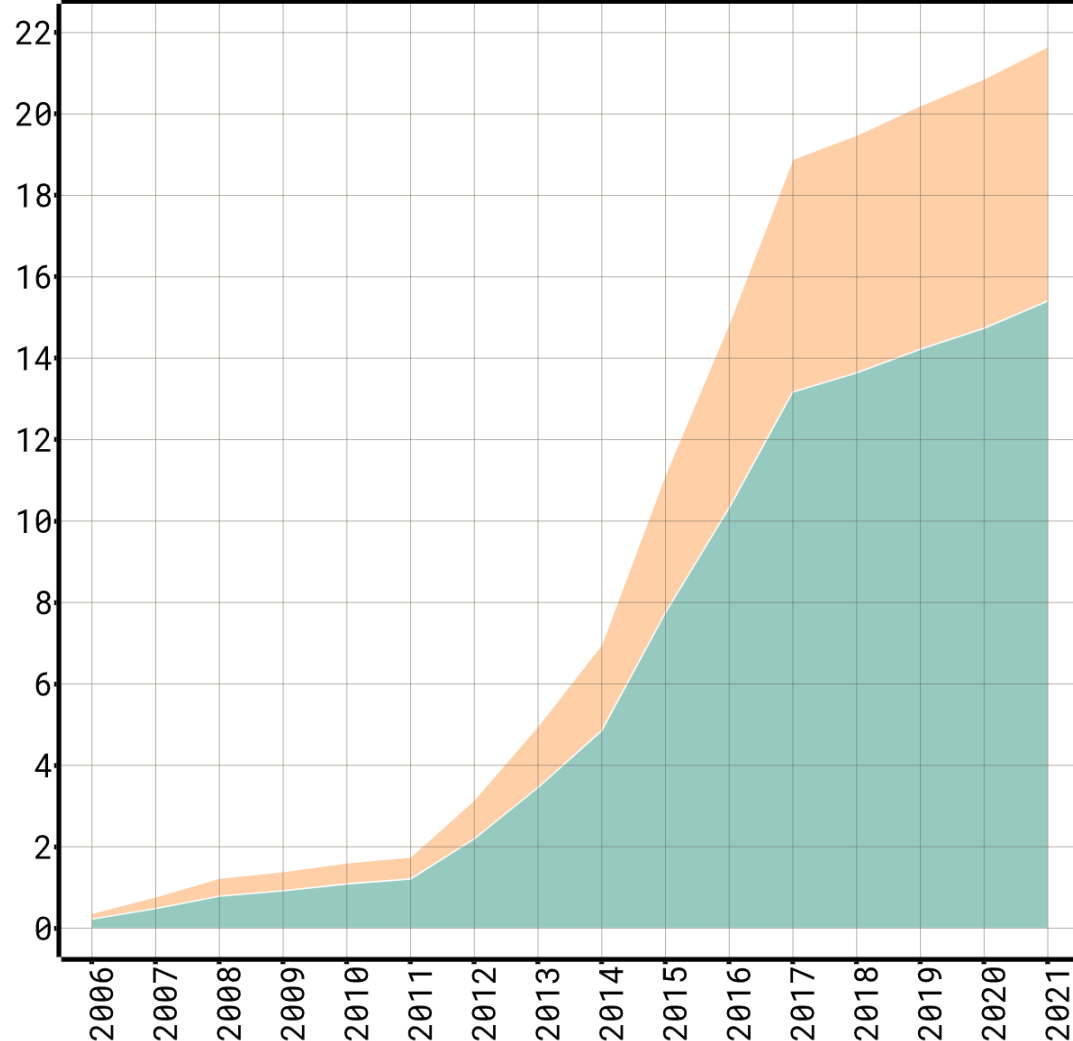
Welcome to HE.

You have made a good choice.

You will want to be successful.

We think data can be part of that.

And by data we mean "how things really are".

Why "how things really are" now matters

Competitive revenue (£Bn) by source
Provider=All,domicile=All

Student accom.
FT UG Tuition

Sector disposition: responsive to reason, but reluctant to see 'how things really are'?

Belief-led sometimes.

But now in a £20+ billion competitive market for UG FT alone. Reality matters here.

A high stakes environment, like FTSE 100

Distribution of index members [Y] by competitive income, millions, log scale [X]

dataHE_cincdist
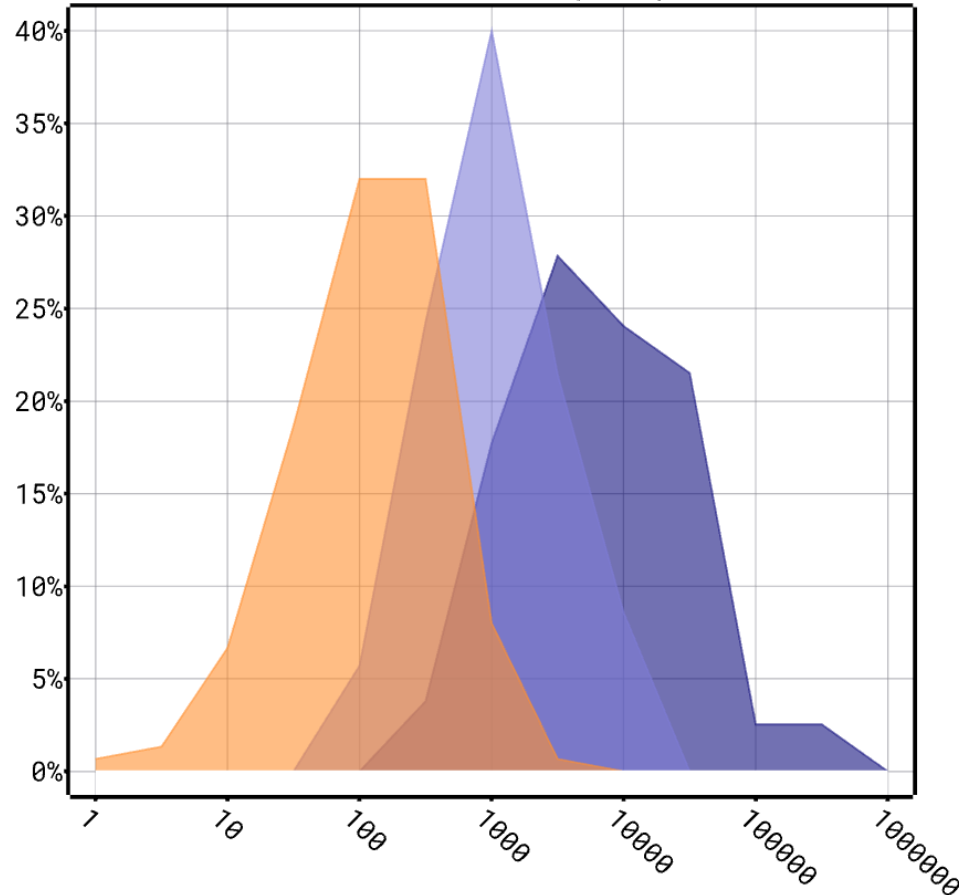
Add in PG, etc and competitive revenue of many universities now

- c. FTSE100
- b. FTSE250
- a. DHSE150

comparable to UK's largest listed companies.

The 'competitive revenue' at individual universities now overlap with the turnover at many FTSE100 and FTSE250 companies.

Using data to be successful

1. What does data do in HE?
   Mark

2. What goes on with data inside universities?
   Nora

3. How to be successful with data. Top tips.
   Mark and **Nora**
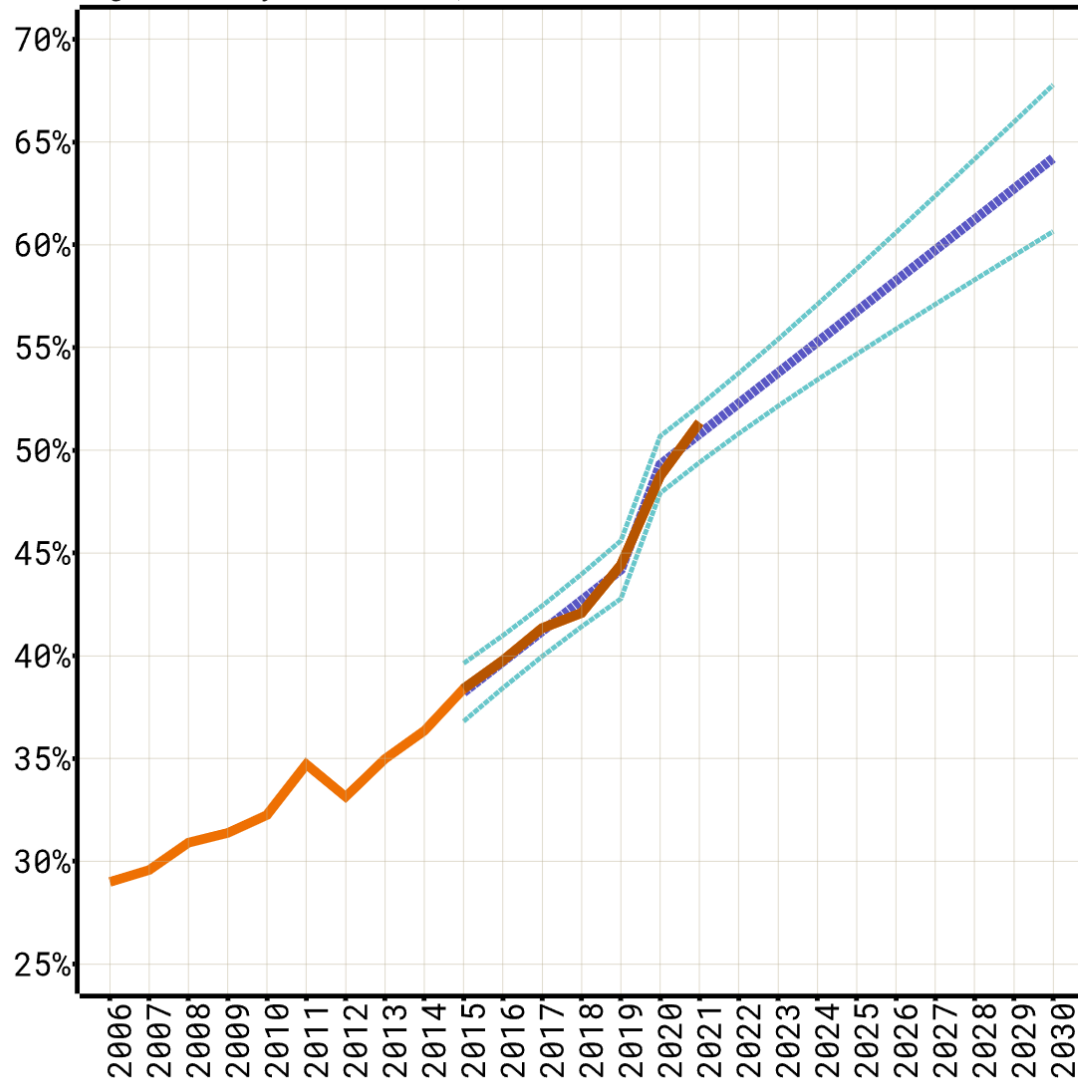
4. Comments or questions on using data.

1.What does data do in HE?

Image: Copyright and by kind permission University of Glasgow

Using data for big trends

UK region 18 year olds , UK ER_MLX_ COD:London

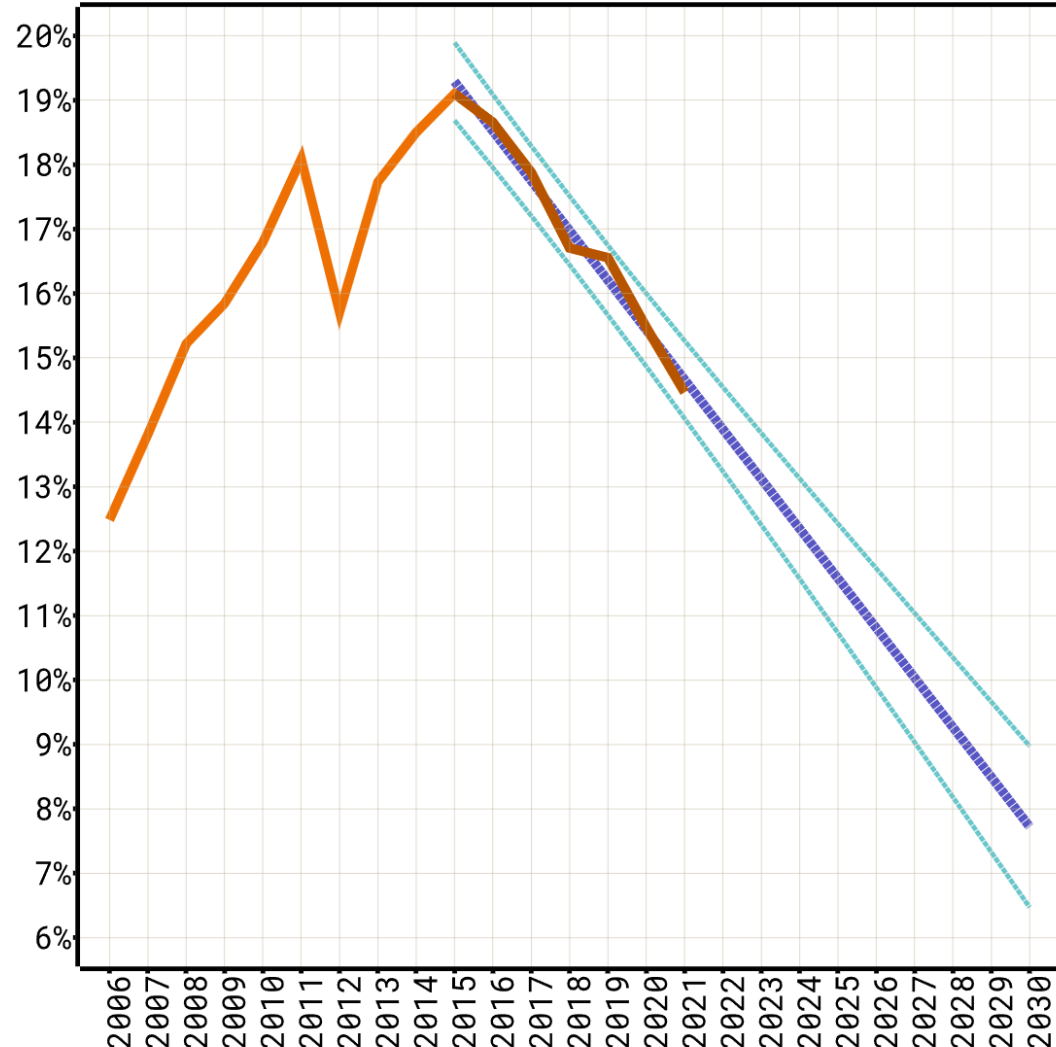The proportion of young people going to university in London is high.

And it keeps getting higher.

- ◼ Model UCL
- ◼ Model LCL
- ◼ Model
- ◼ Actual
- ◼ Actual (used)

From the *data* why would you not expect this to continue?

TEST NATPOOL*UKR18F3

Another key co-ordinate

UK region 19 year olds , UK ER_MLX_ COD:London

Legend:
- Model UCL
- Model LCL
- Model
- Actual
- Actual (used)

TEST NATPOOL*UKR19F3

But in London 19 year olds are becoming less likely to go to university.

Again, from the *data* why would this not continue?

Different places different patterns

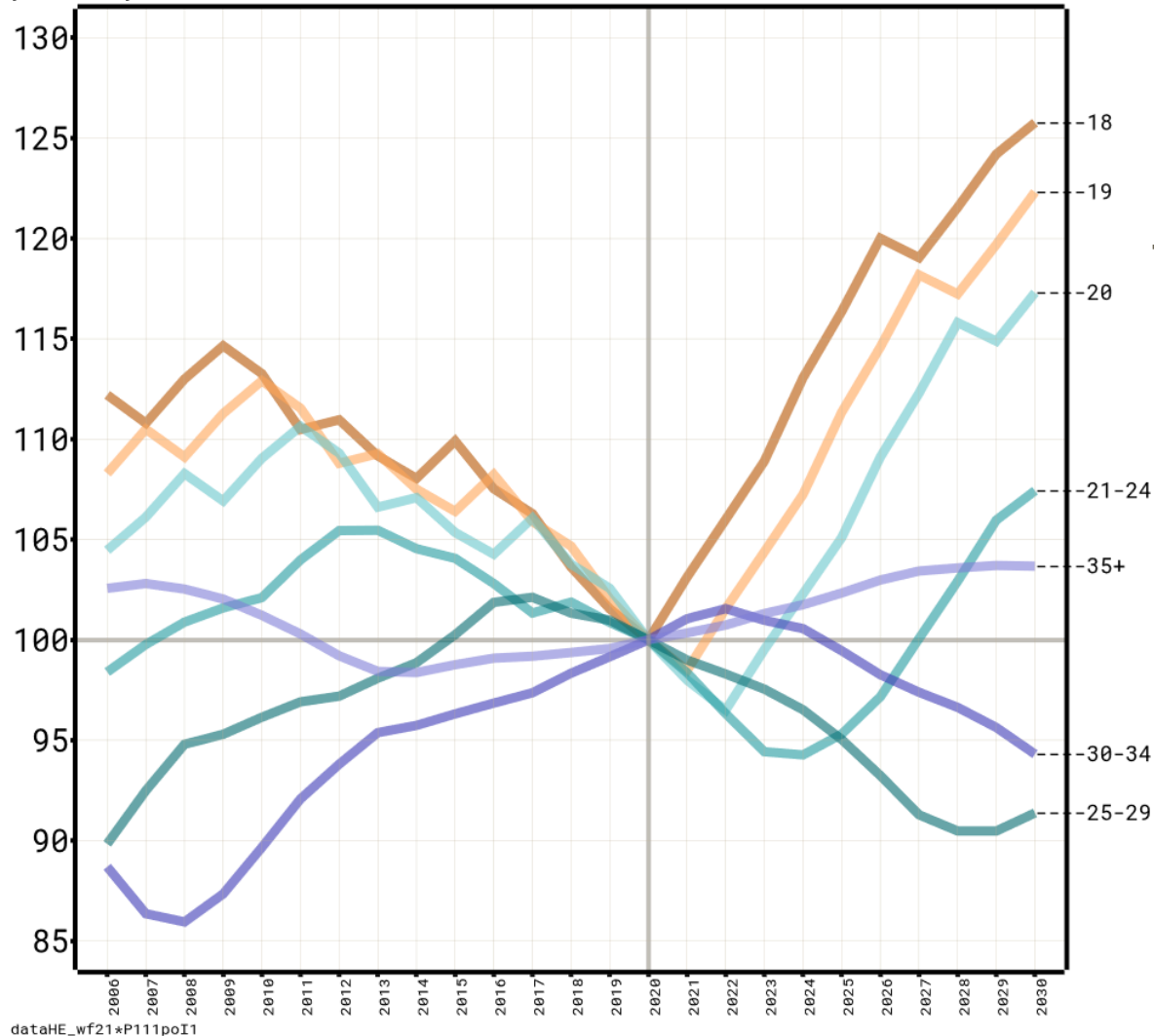UK region 19 year olds , UK ER_MLX_ COD:Scotland
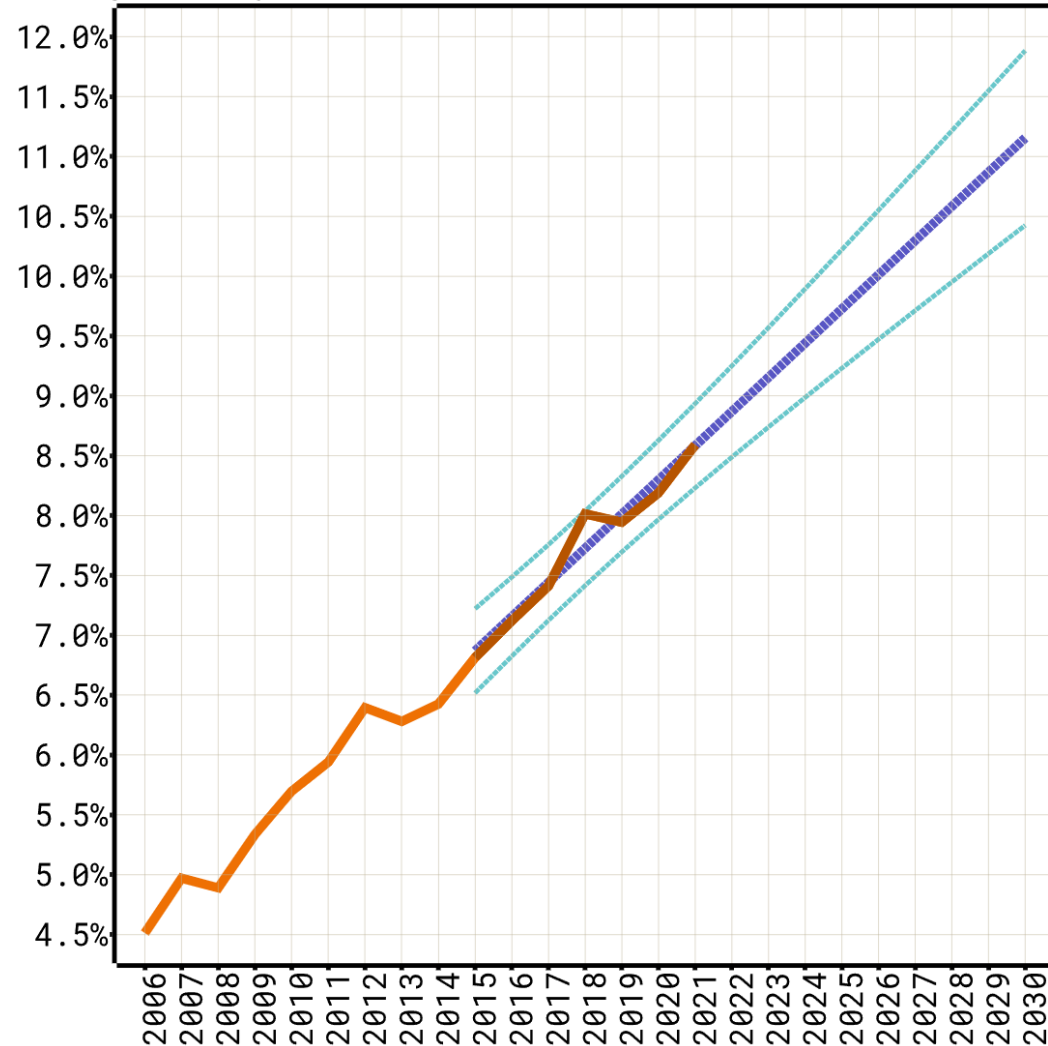
In Scotland, for example, something different is happening.

■ Model UCL
■ Model LCL
■ Model
■ Actual
■ Actual (used)

Use data widely

(Index) 1. UK Typical [weighted] single-year cohort [k].
poolk poolk

dataHE_wf21*P111poI1

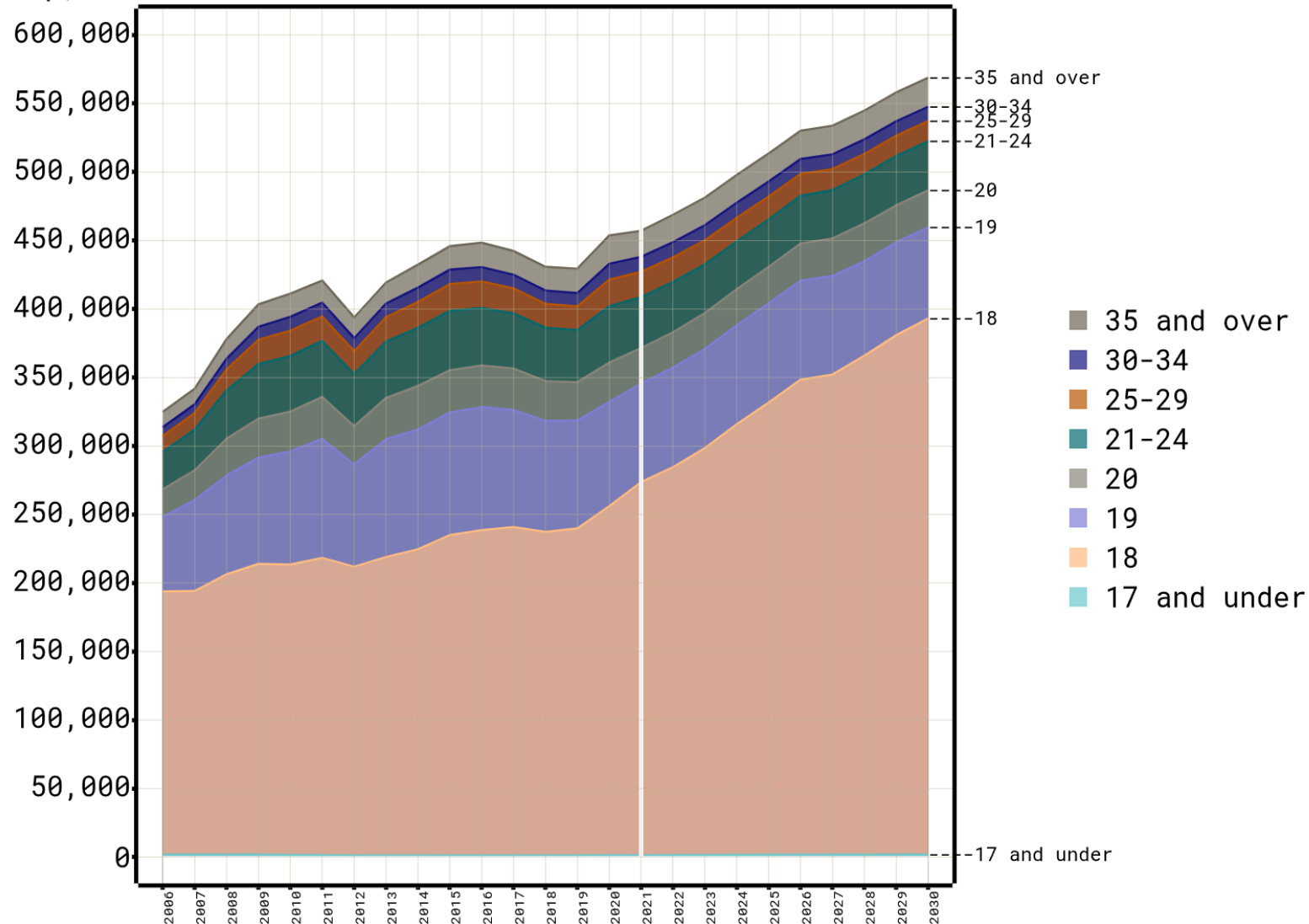Some age groups will increase.

Others decrease.

This will matter too.

A neutral view of the future

Forecast model UK UKT
tsp, cumulative

Legend: 35 and over, 30-34, 25-29, 21-24, 20, 19, 18, 17 and under

TEST NATPOOL*UKT1crC1

Put these data and analysis building blocks together and you get a view of the future.

It is neutral. Data-led, not belief-led.

Common ground for applying judgement.

One strategic signal

(Difference) Forecast model UK UKT
tsp tsp

Legend:
- 17 and under
- 18
- 19
- 20
- 21-24
- 25-29
- 30-34
- 35 and over

TEST NATPOOL*UKT1crI2

You can get a lot of detail in the forecasts.

But big signals matter.
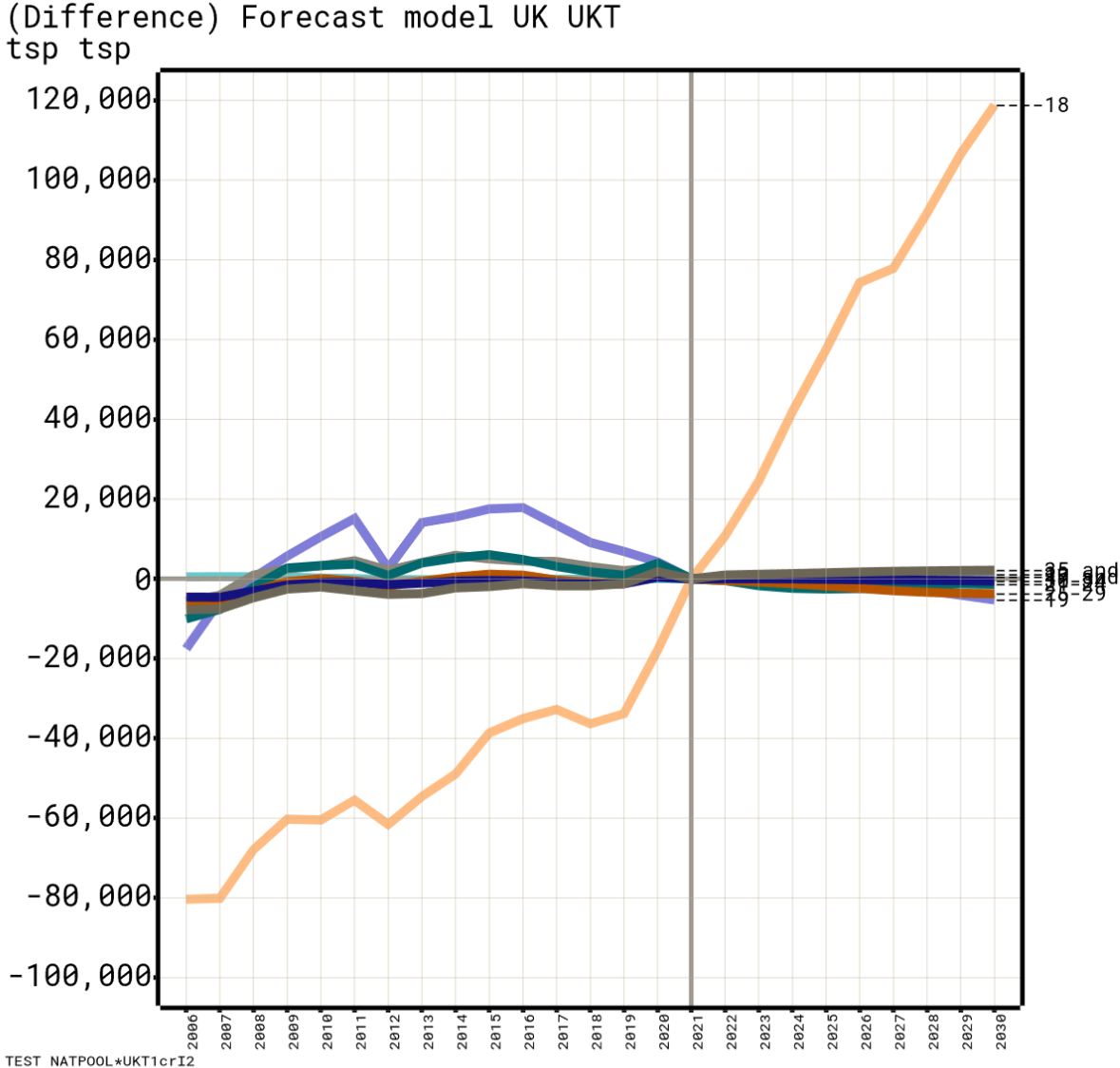
Is your strategy going with or against this tide?

Thinking about the number

HOME   ANALYSIS   PRODUCT

Universities, students and inflation

What if high inflation returned?

Image: The cost of a first class stamp quadrupled between 1972 and 1980 in a previous period of high inflation.

[This article was originally published by the Higher Education Policy Institute.]

Many universities think in terms of student numbers.

But it is the real income that matters.

In July last year we thought the data signalled trouble ahead.
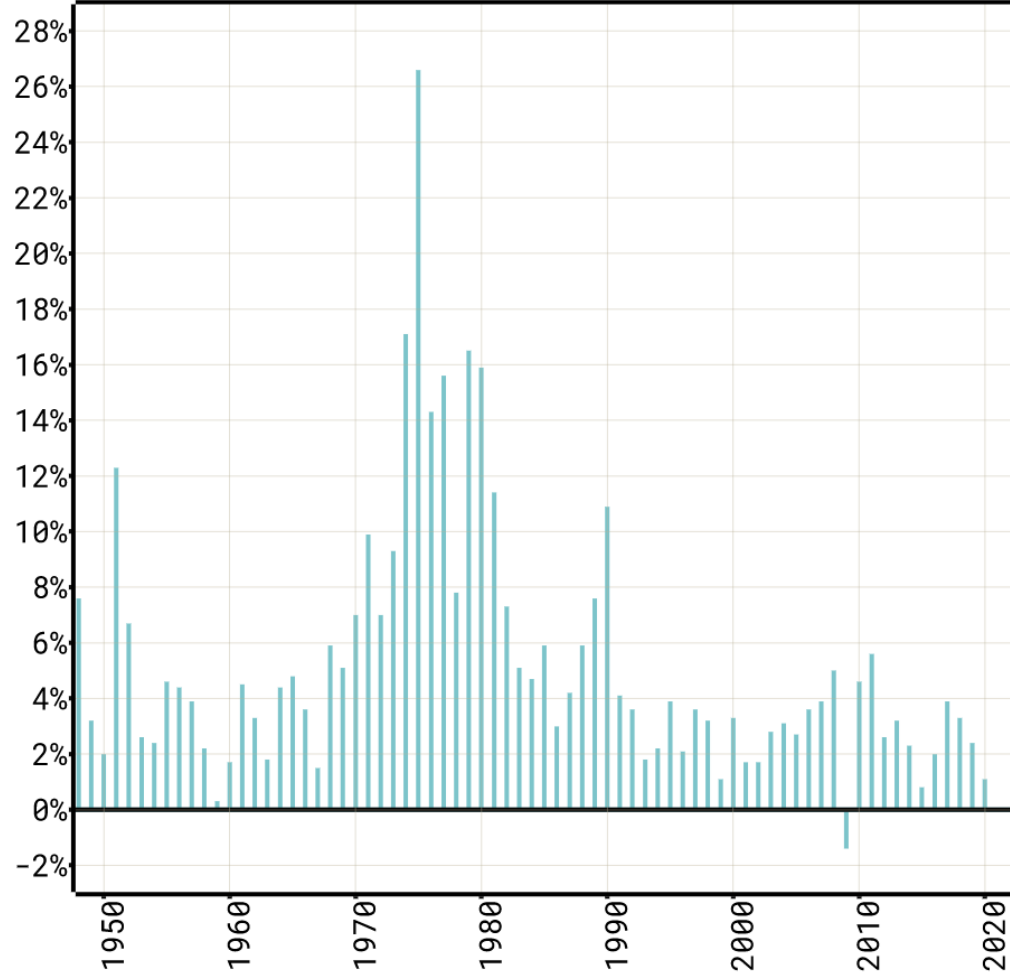
Mark Corver
July 14, 2021

Always be guided by the data

FIGURE 1 RETAIL PRICES INDEX, 12 MONTH CHANGE TO SEPTEMBER

RPI, 12 month change to September
ONS series ID CZBH, ons.gov.uk

September

dataHE 2021 sepRPI

We knew university funding was vulnerable.

But there seemed to be a belief that high inflation was a remote, near impossible outcome.
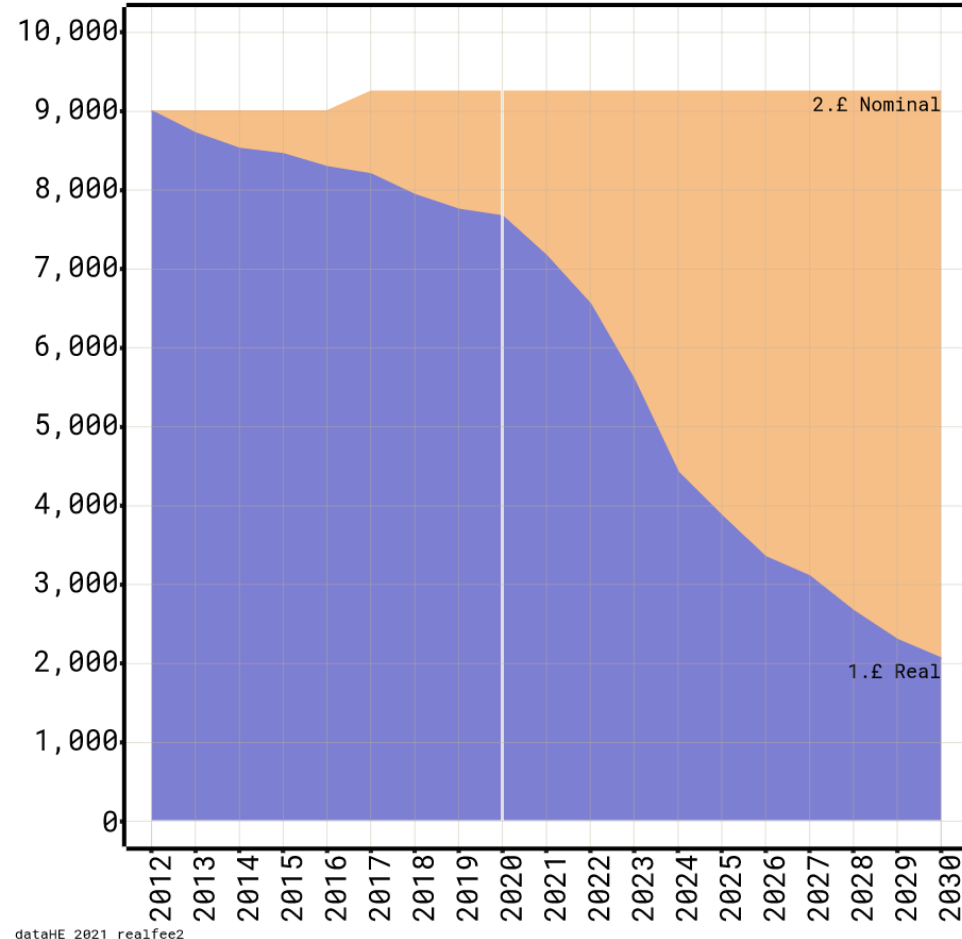
But the data suggested it was actually quite common.

Putting parameters on the future

FIGURE 2 THE ENGLISH FT UG FEE CAP, NOMINAL AND REAL

English FT UG tuition fee cap, nominal and in £ 2012
RPI, with 2021 onwards like 1972 onwards

2.£ Nominal
1.£ Real

dataHE 2021 realfee2

So we just took a run of data from 1972 as a guide to a possible future.
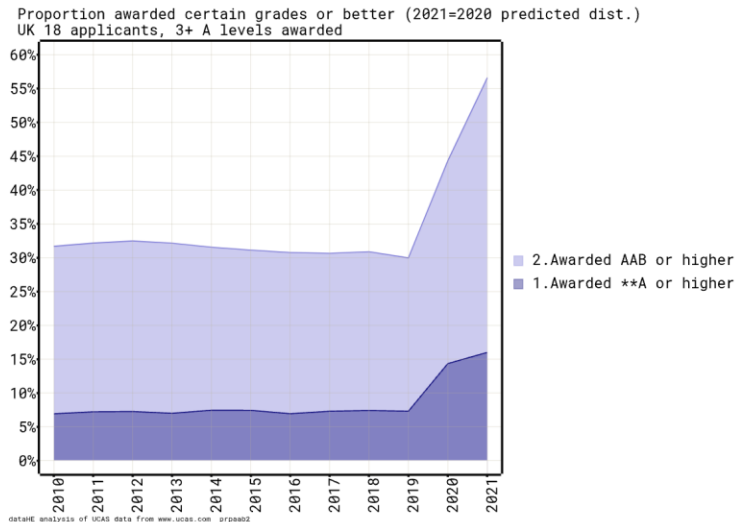
It has been pretty close so far.

This possibility was in the data all along.

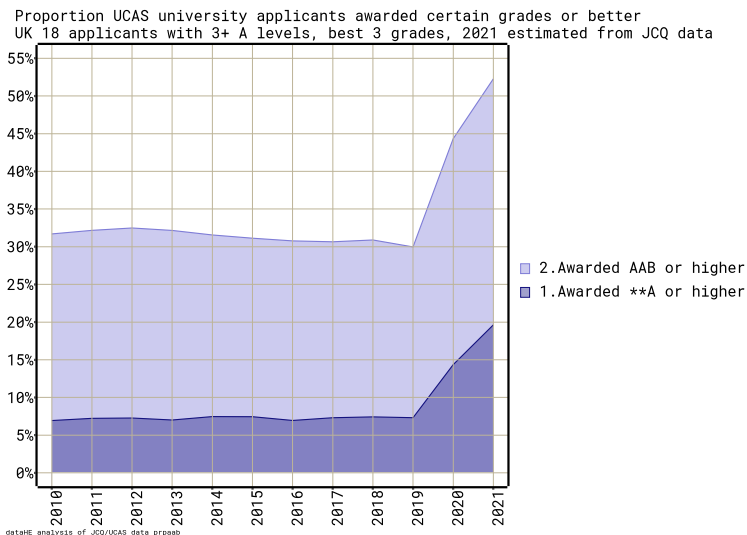Using as much data as possible, and as little judgement as possible helps.

Listening to data gives thinking time

April 2021 article.

Proportion awarded certain grades or better (2021=2020 predicted dist.)
UK 18 applicants, 3+ A levels awarded

2. Awarded AAB or higher
1. Awarded **A or higher

dataHE analysis of UCAS data from www.ucas.com prpaab2

August results.

Proportion UCAS university applicants awarded certain grades or better
UK 18 applicants with 3+ A levels, best 3 grades, 2021 estimated from JCQ data

2. Awarded AAB or higher
1. Awarded **A or higher

dataHE analysis of JCQ/UCAS data prpaab

It is not just long-term either.

In April 2021 we used the evidence in the data to reason what the grade distribution would be that year.
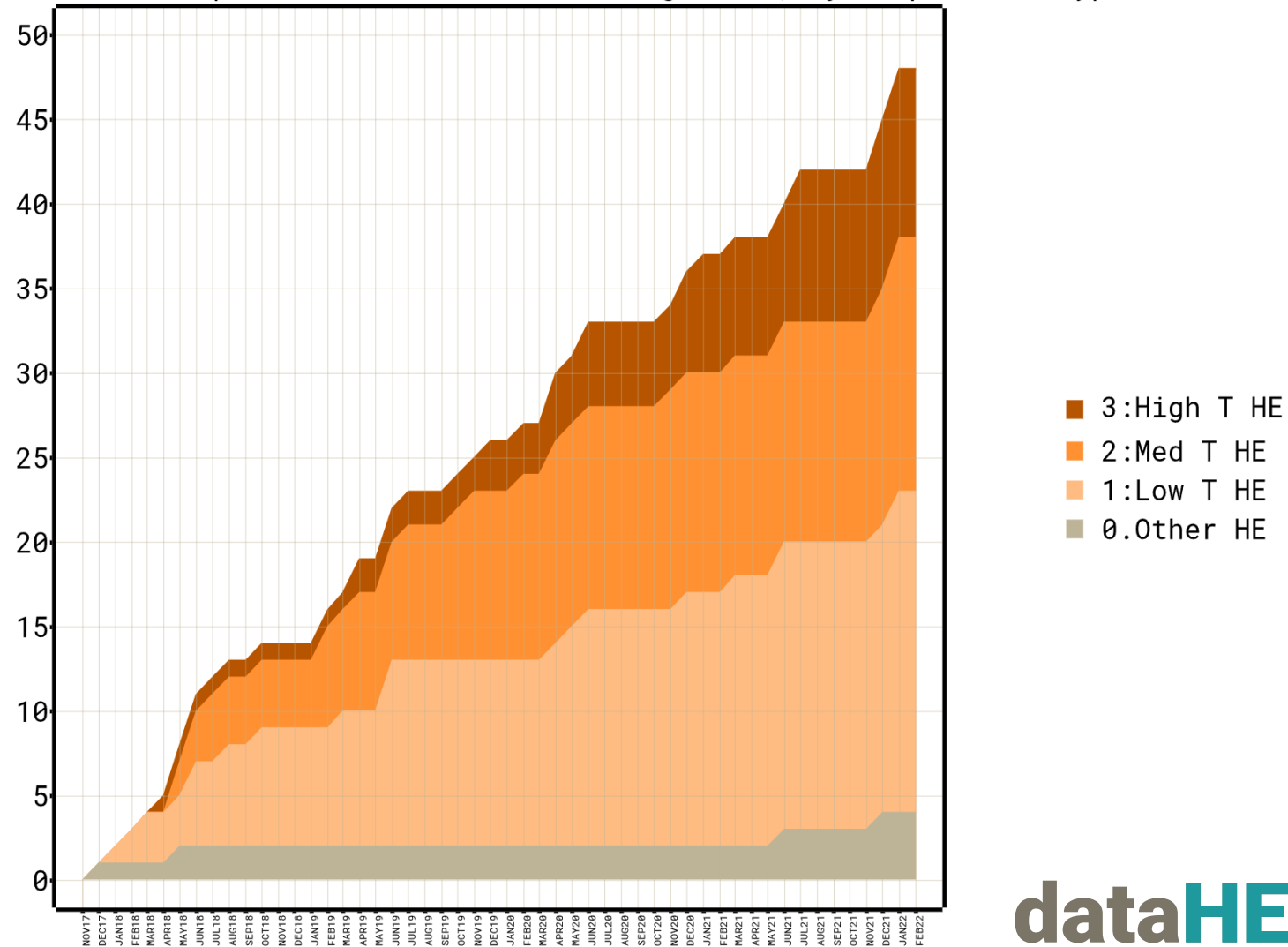
It turned out to be exactly right.

This gave extra 'thinking time' for admissions

But not all universities used this.

Can universities use this approach?

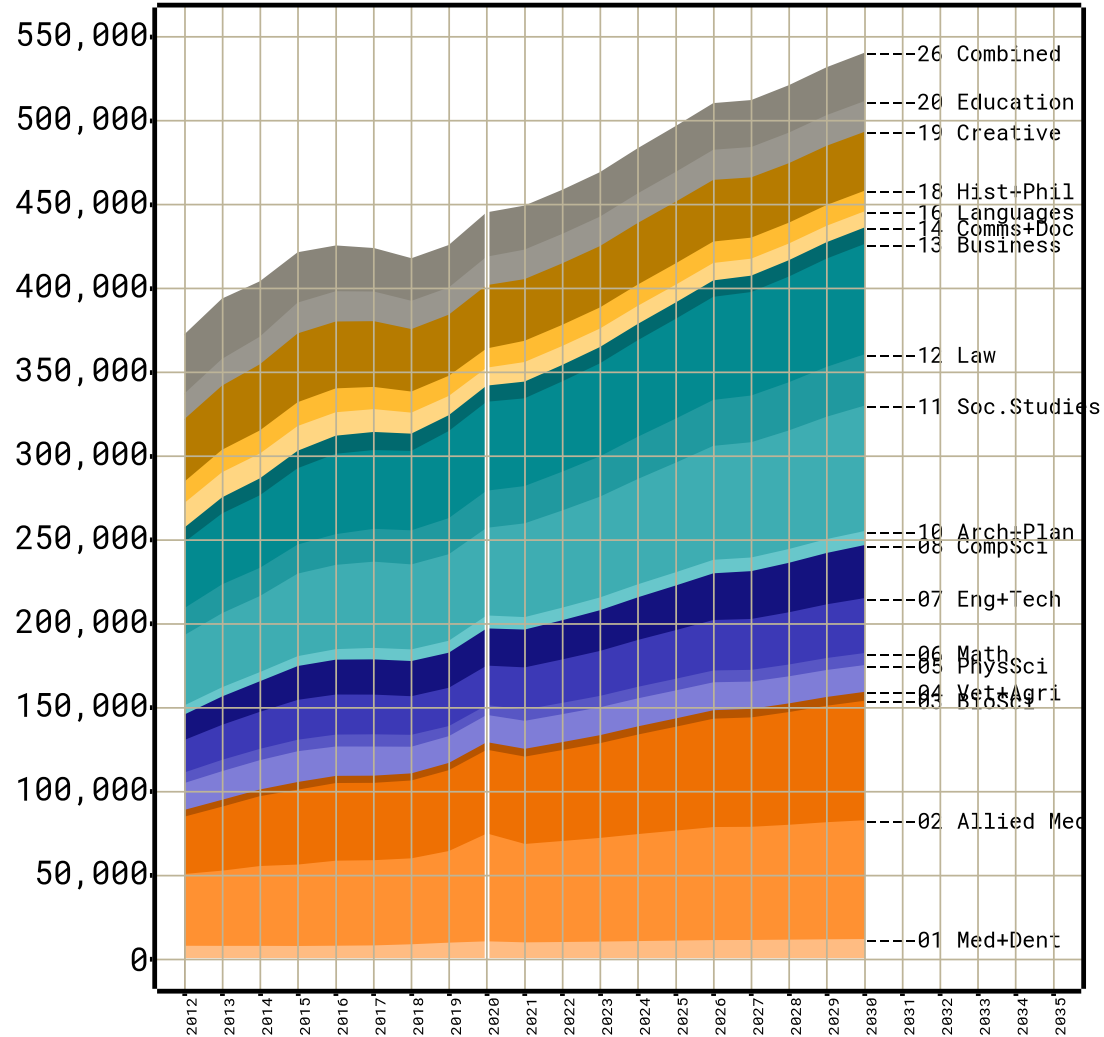Distinct HE providers worked with through time, by HE provider type

Universities can also use these approaches.

One small example.

Legend:
- 3:High T HE
- 2:Med T HE
- 1:Low T HE
- 0.Other HE

dataHE

One example: subjects

UG subject group of UK dom
intake, cumulative

How many students will there be in the future?

In each segment?

What subjects do they prefer?

How is that changing?
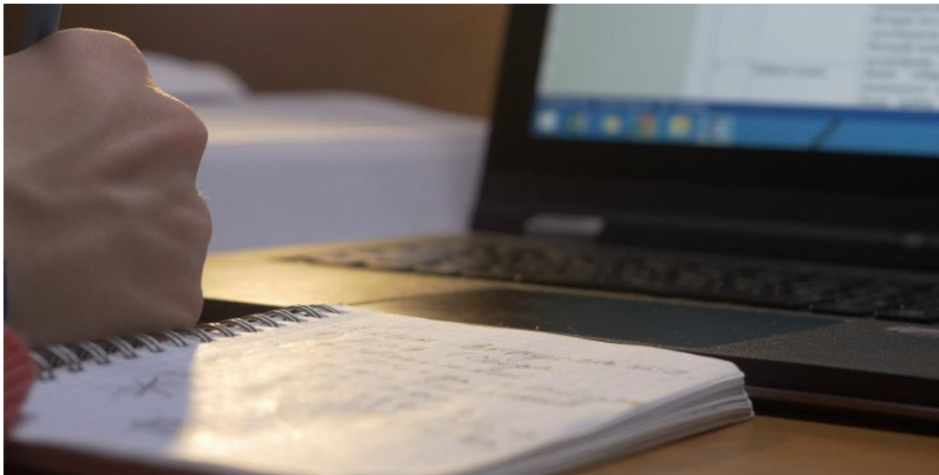
What is our market share by subject and segment?

And how is that changing?

PGTmods A151kC1

Data , government, policy and universities

Universities must get to grips with spiralling grade inflation

Published on
19 Dec 2018

Universities must take urgent steps to tackle grade inflation, the higher education regulator has warned.

The Office for Students has today published an analysis of changes in degree classifications between 2010-11 and 2016-17, presenting findings at both sector and individual university level. The analysis finds the significant increase in the proportion of first and upper second class degrees cannot be fully explained by the factors linked with graduate attainment included in our analysis.

The percentage of first and upper second class degrees awarded has increased from 67 per cent in 2010-11 to 78 per cent in 2016-17, while the percentage of first-class degrees has increased from 16 per cent to 27 per cent.

Crudely, Governments feel they pay for universities. Who then do not do what they want.

So Government policy will shape your working life.

Data can give a policy an unstoppable force.

This is good. So long as the data is right.

How does it work in HE?

Data Battleships

HE policy often conducted using data battleships.
Only governments can muster them.

Universities hit back
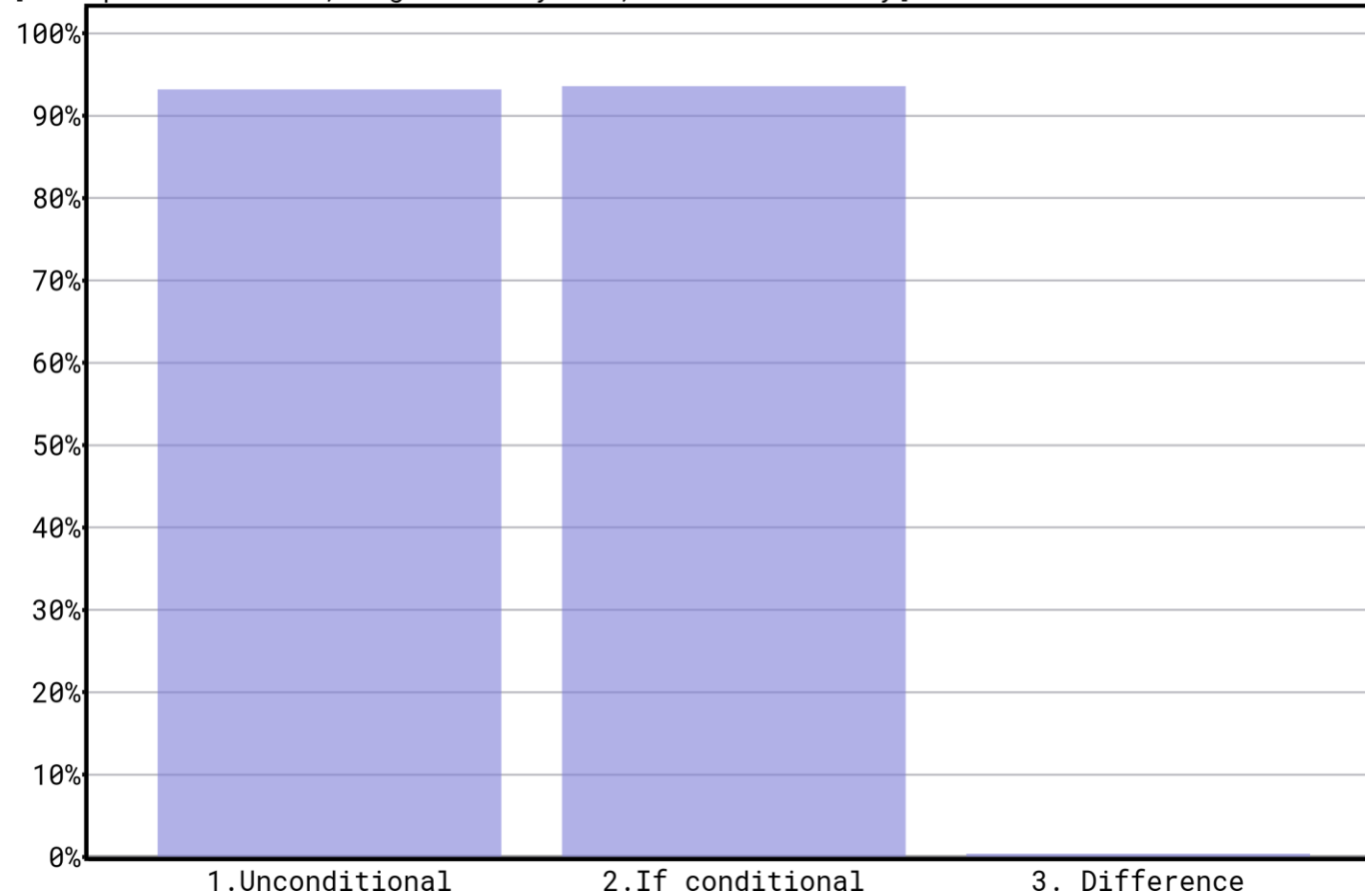

It isn't a fair fight.

So debate is unbalanced.

Intent and evidence can easily get mixed.

No way to challenge. Policy likely poorer as a result.

The data on harm to students

First year completion rates, OfS model offer type effect
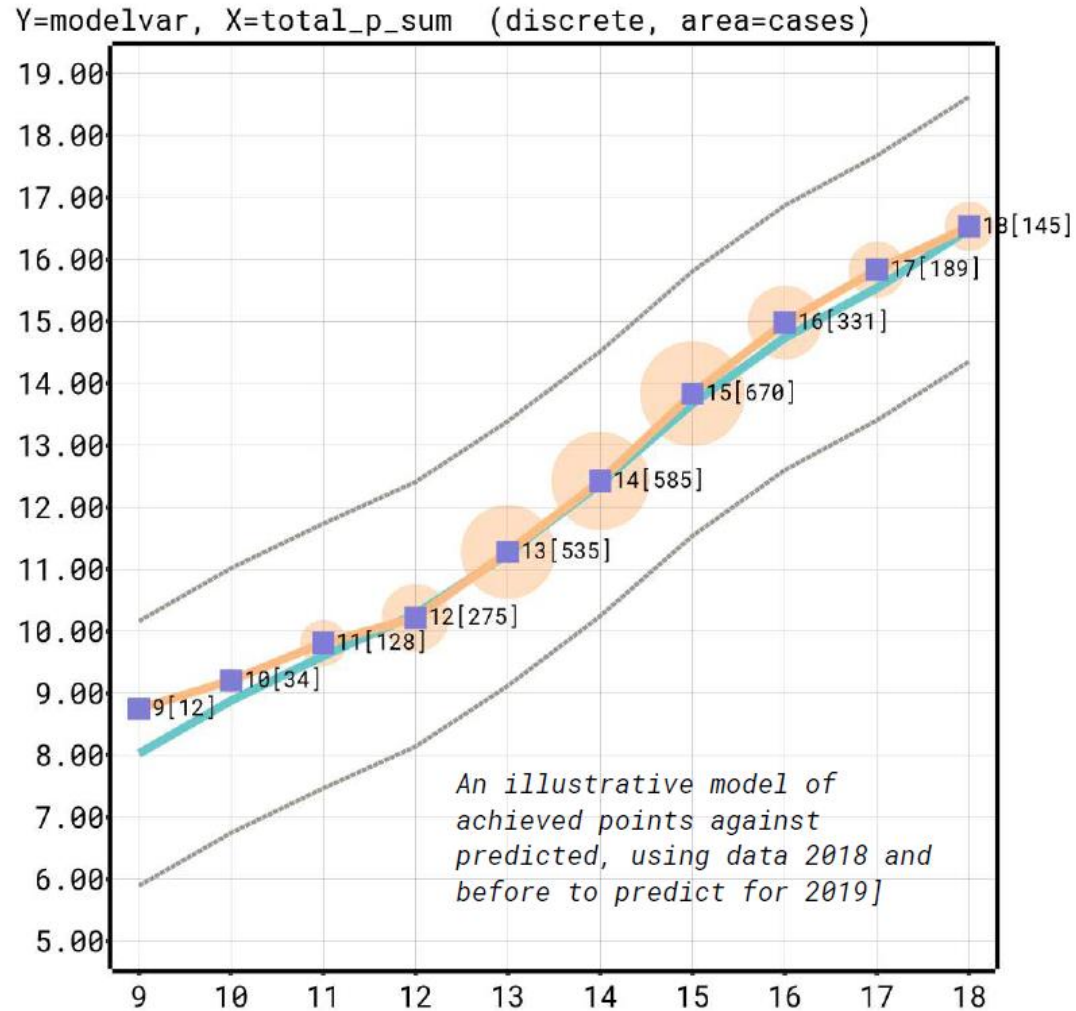[All qualifications, English 18 years, 2015-2017 entry]

Inconsequential

Offset by getting into a different university

Model had very unusual foundations (e.g. ethnic effect).

Ultimately there was no real argument against unconditional offers from the *data*.

Does it matter? And how to respond

Y=modelvar, X=total_p_sum   (discrete, area=cases)

An illustrative model of achieved points against predicted, using data 2018 and before to predict for 2019]

Leads to wrong decisions and missed opportunities (the 2020 admissions crisis could have been adverted).

In terms of your success, remember these data battleships have a policy intent.

Don't rely on their analysis as a neutral guide to how things really are. Work it out yourself.
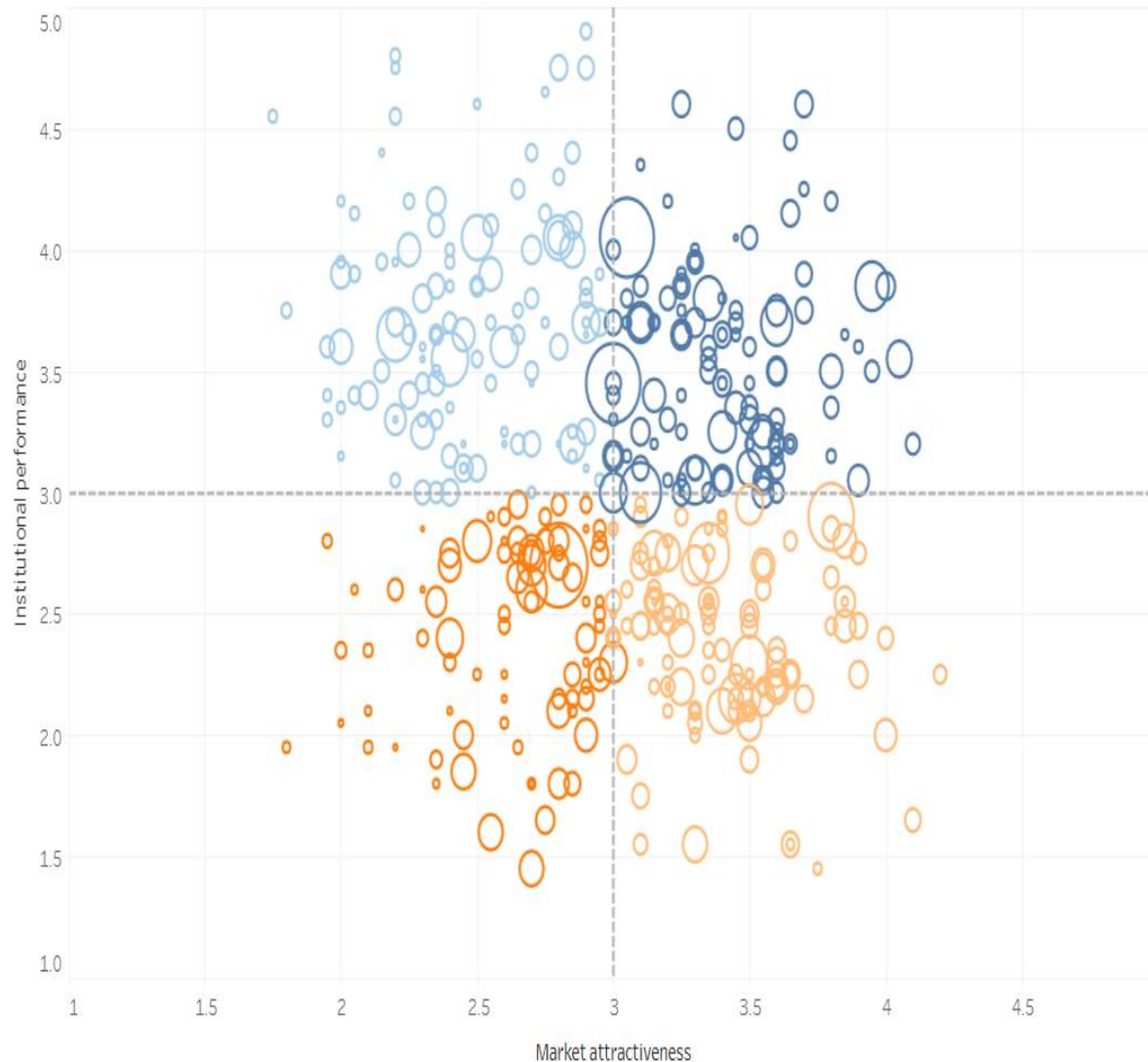
2.What goes on with data inside universities?

Image: Copyright and by kind permission Queen's University Belfast

What goes on inside universities?

Too much decision making with descriptive data rather than data analysis

Benchmarks that lack a consistent approach so don't really tell us much

Being led by what data is available rather than what an institution needs

Commissioning of market research that tells us what we want to hear rather than what we need to know

The Politics of Data within

Politics of university academics

■ Left leaning   ■ Right leaning
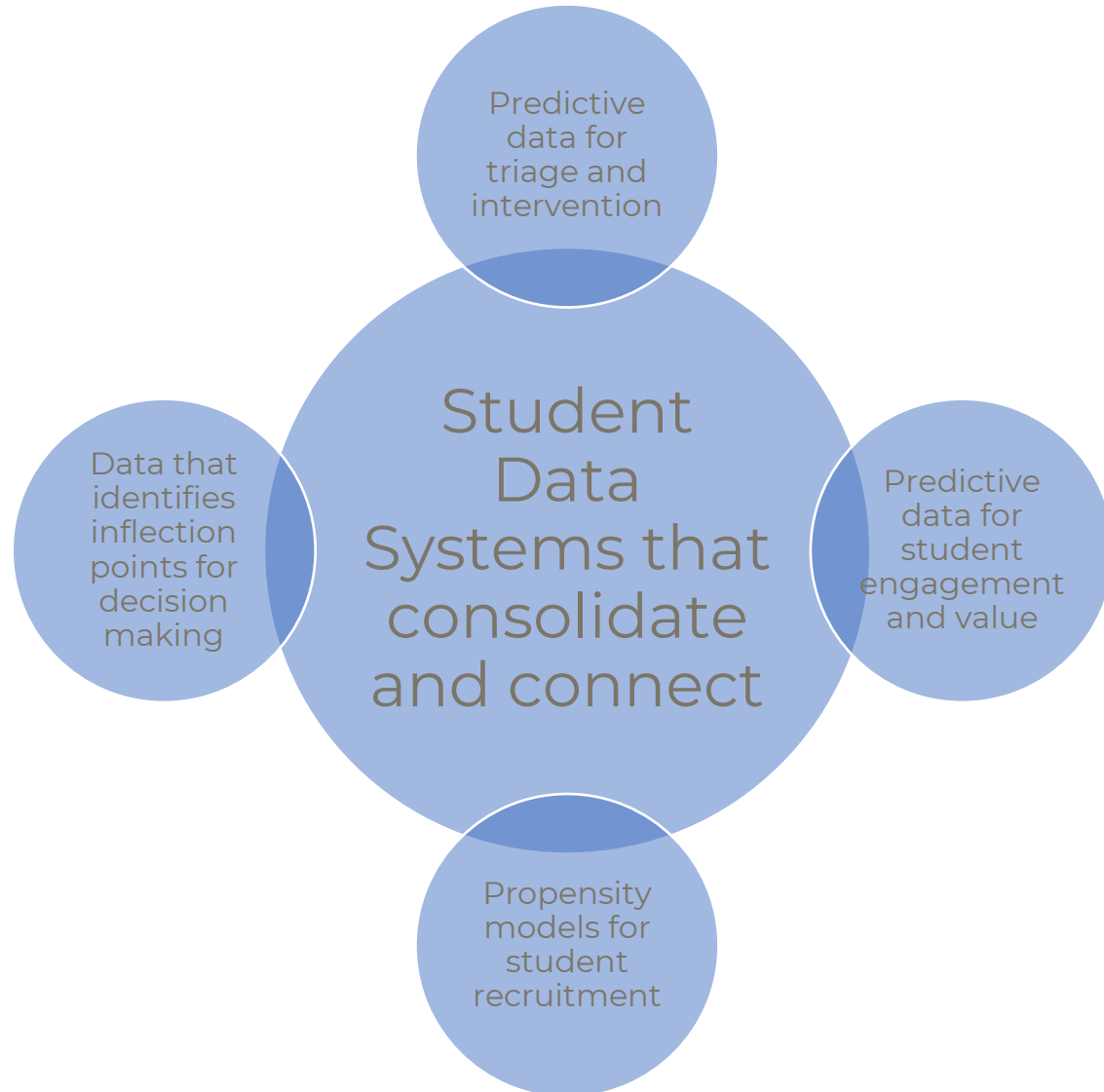
Source: Adam Smith Institute
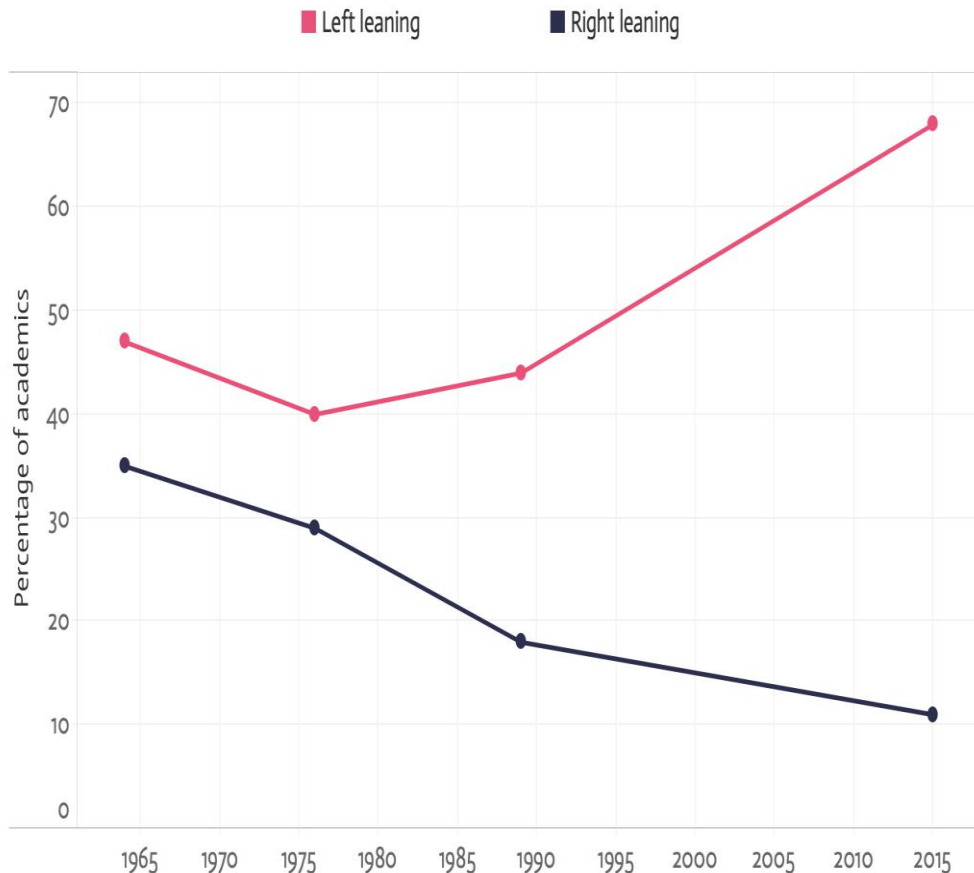
Managing up to the Board or Council with data

Managing staff with data

What gets shared and, more importantly, what doesn't get shared and why

Data driven approaches making a difference

Predictive data for triage and intervention

Data that identifies inflection points for decision making

Student Data Systems that consolidate and connect

Predictive data for student engagement and value

Propensity models for student recruitment

Student recruitment and management

Academic Programme Development and Management

Student Success and Retention

3. How to be successful with data? Top 5.

Image: Copyright and by kind permission University of Winchester

Be successful with data: three things

1. Think about the number.

Should it be a rate? Divided by what? Across segments? And compared to who? Does it capture what you need?

2. Noise.

Understand random noise. It is larger than you expect. Do not be the university wasting energy chasing noise.

3. Model the future.

Build an understanding. Use it to model the future. You'll always be right about the past. Find your limitations.

Be successful with data: another two

4. Ask the right question.

Do people understand the question? Is it actually answerable with data? Would an answer change the decision?
If no to any of these, stop the analysis.

5. Be the voice of data.

Data is under-represented and under-performing in universities. Produce or sponsor data analysis. Be known as the voice of data.

Better than guessing.

Using data to be successful in higher education

Dr Mark Corver, Founder, dataHE. @markcover www.dataHE.uk

Professor Nora Ann Colton, Director of UCL Global Business School for Health. @NoraAnnColton

Questions and comments