

THE KING'S LECTURES 2019

Psychiatry, Science & Society

LECTURE 1

**BLUE CHIPS AND BUBBLES:
WHY WERE UNIVERSITIES THE
20TH CENTURY'S MOST
SUCCESSFUL INSTITUTIONS?**

LECTURE 2

**MAKING HIGHER EDUCATION POLICY:
A CASE STUDY IN GOVERNMENTS
AT THEIR BEST AND WORST**

LECTURE 3

**FALLING PRODUCTIVITY & SLOWING GROWTH:
DO OUR POST-2008 PROBLEMS HAVE
ANYTHING TO DO WITH UNIVERSITIES?**

THE TRANSCRIPTS

ALISON WOLF

PROFESSOR OF PUBLIC SECTOR MANAGEMENT



THE KING'S LECTURES

2019

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THREE LECTURES DELIVERED BY
PROFESSOR ALISON WOLF

Blue Chips and Bubbles:
why were Universities the
20th Century's most Successful
Institutions?

Making Higher Education Policy

Falling Productivity and
Slowing Growth: do our Post-2008
Problems have Anything to do
with Universities?



King's College London

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King's College London
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Printed in the United Kingdom

Designed by Atelier Works

Approved by brand@kcl.ac.uk, 2019

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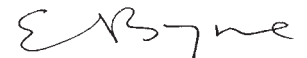
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PREFACE FROM THE PRESIDENT & PRINCIPAL,
PROFESSOR EDWARD BYRNE AC

King's prides itself on having a wonderful academic faculty that comprises leading thinkers across many disciplines. I conceived the *King's Lecture Series* as an opportunity for some of our world-leading academics to present a story in depth over three lectures, about an issue of public interest close to their hearts. My expectation was that they would develop some new material for the series, that it would be open to the general public, and that it would embrace the King's community. Preparation of lectures suitable for publication was also part of our thinking in devising this series. Professor Alison Wolf has proved an excellent second lecturer. She has developed a theme of the growth of universities during the centuries which explains the university as the institution it is today, through three brilliant lectures. Her words speak for themselves, and I commend this publication to all who are interested in topical issues related to the role of universities in society. Professor Wolf has kept the bar high for others to follow, and this lecture series will undoubtedly carry high prestige at King's College London for many years to come.



Professor Edward Byrne AC FMedSci

THE TRANSCRIPTS

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ALISON WOLF
Universities, the economy & the state

LECTURE 1 • 4 MARCH
**BLUE CHIPS AND BUBBLES:
WHY WERE UNIVERSITIES THE
20TH CENTURY'S MOST
SUCCESSFUL INSTITUTIONS?**
Safra Lecture Theatre
King's Building, Strand Campus, WC2R 2LS

LECTURE 2 • 19 MARCH
**MAKING HIGHER EDUCATION POLICY:
A CASE STUDY IN GOVERNMENTS
AT THEIR BEST AND WORST**
Lecture Theatre 2
New Hunt's House, Guy's Campus, SE1 9JL

LECTURE 3 • 25 MARCH
**FALLING PRODUCTIVITY & SLOWING GROWTH:
DO OUR POST-2008 PROBLEMS HAVE
ANYTHING TO DO WITH UNIVERSITIES?
LECTURE AND PANEL DISCUSSION**
Safra Lecture Theatre
King's Building, Strand Campus, WC2R 2LS



LECTURE I

BLUE CHIPS AND BUBBLES:
WHY WERE UNIVERSITIES
THE 20TH CENTURY'S MOST
SUCCESSFUL INSTITUTIONS?

Monday 4 March 2019
King's Building, London

Universities today are enjoying a period of unprecedented wealth and unprecedented reach into society. In this first lecture, I will be asking how this came about. Was it inevitable? And can we say anything about whether our current position is likely to be maintained? In addressing these questions, I will be highlighting how closely the state was, and is, involved in university education; and arguing that there was, in fact, nothing inevitable about the route that led to today's huge research universities, such as King's itself. First, however, it is worth reminding ourselves that universities are quite remarkable.

They are, for a start, enormously long-lived: more so than almost any other institutions in our society.^{Fig A}

Fig A

Institutions with (greater or lesser) longevity

Name	Founded (closed)
Catholic Church	30CE Edict of Milan 313
University of Bologna	1088
University of Oxford	1167
Harvard University	1636
East India Company	1600 (wound up 1874)
Standard Oil	1870 (wound up 1911)
Bethlehem Steel	1857 (wound up 2003)
IBM	1911

The one exception is the Catholic Church, which also figures large in the history of universities. Some people date its founding to the year 30CE, others to the Edict of Milan in 313: but either way, it is still

the longest-lived institution on this Earth. However, compare universities with, for example, the huge trading, industrial and tech companies which, at any given moment, seem to dominate our world economy. What is extraordinary is how short-lived they are in contrast to the universities that preceded, and now outlast them.

The University of Bologna is far older than the Italian state. There was teaching in Oxford in 1096, although the university proper dates from 1167: just a century after the Norman Conquest. Harvard was founded in 1636, well before the United States was an independent country. Compare any of these with the East India Company, Standard Oil, Bethlehem Steel – all giants of their day. IBM just made its century, but it seems a pretty safe bet that it will never rival the University of Bologna for longevity.

The second most striking fact about today's universities is how enormous they are. Here at King's we now have over 31,000 students, and we are far from the largest UK university. In Italy, La Sapienza, in Rome, enrolls 112,000. An institution that enrolls many thousands of students is now the norm, not the exception. What we are not always aware of, even those of us that work in higher education, is how meteoric this increase in size has been; nor how recent and how global. This growth also means that universities have become very expensive. All over the world, states are committing huge budgets to funding higher education – and this is true everywhere, including countries which also charge student fees.

^{Fig B} shows how dramatically total student numbers have grown in France, Germany and the UK, the three biggest economies in Europe.

University student numbers
In three countries

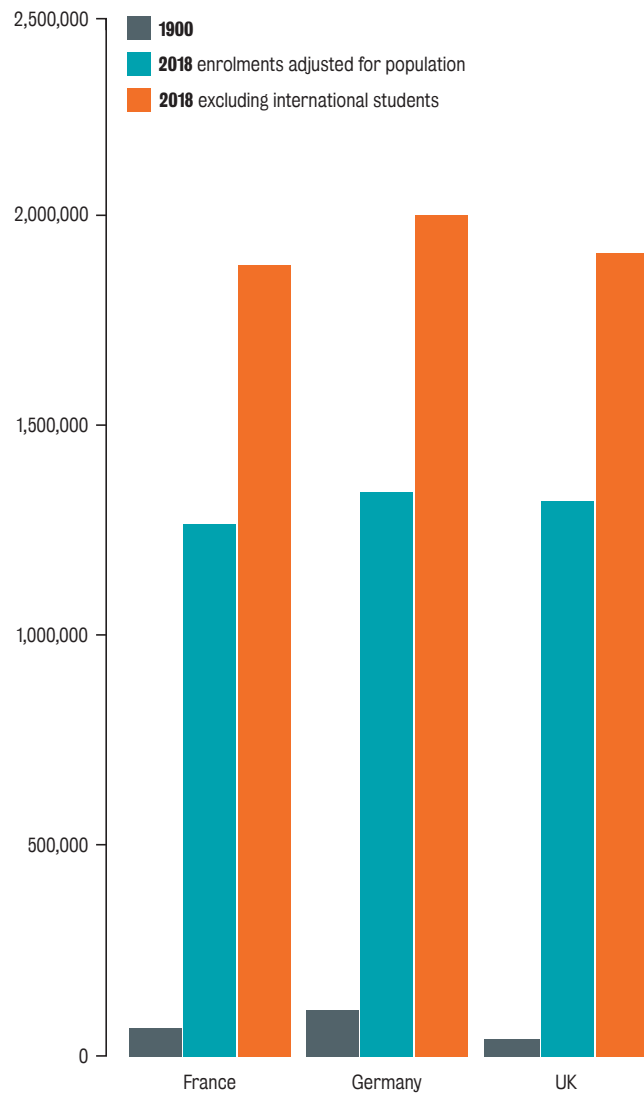


Fig B HESA, INSEE, German Federal Statistical Office (DESTATIS)

The grey columns in Fig B represent the student numbers in each of these countries in 1900. The orange columns show the numbers of ‘home’ students in 2018, and the teal columns show that number adjusted to control for population growth since 1900. These gigantic increases in the proportion of the population which enters higher education are found everywhere, in developed and also in developing countries. The most meteoric rise in recent years has been in China, which had only 0.26 per cent of its population in higher education in 1949, 1.55 per cent in 1978, and was up to 43 per cent by 2016. In Taiwan over 80 per cent of younger age cohorts proceed to some form of higher education, while in South Korea 70 per cent enter university.

The third striking aspect of the modern university, one it shares with its forebears, is its architecture. Of course, there are universities which are both prestigious and architecturally unassuming – but not many. A serious university needs a portico – whether or not it still calls itself an ‘Institute of Technology’ like MIT Fig C – and whether or not it is found in one of the ‘original’ university countries, or further afield.

Contrast this with the deliberately anonymous architecture of modern companies. Whereas the insurance companies and banks of the 19th century built magnificent down-town headquarters (many now hotels), the archetypal modern HQ is often out-of-town, architecturally anonymous, designed to give little offence, or a bland, forgettable tower in a business district. Fig D

Universities’ architecture is central to the way they see themselves, and project themselves, as ‘temples of knowledge’, institutions to be admired and deferred to, above and removed from the compromises and



Fig C

- Top to bottom**
 Massachusetts Institute of Technology (MIT)
 Yale University
 Tokyo University
 Moscow State University

All images on this page © Alamy Stock Photo



Fig D

bargaining of the marketplace. The founders and sponsors of the great 'redbrick' expansion of universities in 19th-century England were very clear about this – no new university could or should expect to thrive if it did not project grand and elevated claims and values.¹ Alongside opera houses and museums, universities today provide the most important outlet for innovative, large-scale, 'swagger' architecture.

So there we are. Here in higher education, we straddle the world; increasingly huge, increasingly expensive to the taxpayer and, above all, increasingly important in the lives of more and more of the world's population. How did we get here and is this a stable equilibrium? To get a sense of the answer, let us look at the histories of universities in just three countries. They yield some very interesting and valuable lessons about why, today, universities have become such enormously successful institutions, and about how non-inevitable their growth has been.

CASTILE: A TALE OF THREE CENTURIES

In Fig E, you can see how many students were enrolled in the universities of Castile – the core region and kingdom of Spain – between 1550 and 1840.² In 1550 this was one of the richest places in the world and it had enormously high university enrolments by the standards of the time. Numbers continued upwards for a few further decades – but then started on a steep decline. This was true for the system as a whole and for individual institutions. The two shown in Fig E were among the most important and prestigious, enjoying huge wealth at the start of this period. Indeed, enrolments at

University enrolments
Castile, 1550-1840

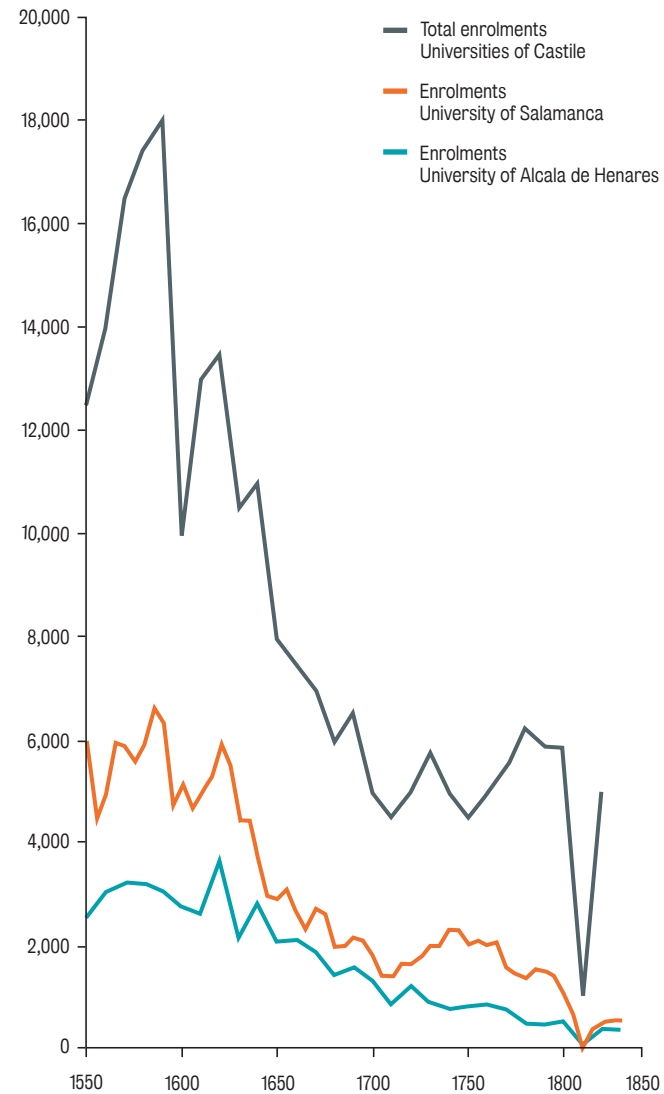


Fig E Kagan, 1974

¹ Whyte, W (2015) *Redbrick: a Social and Architectural History of Britain's Civic Universities*: Oxford University Press

² All figures taken from Richard L. Kagan (1974) 'Universities in Castile 1500-1810' in Lawrence Stone ed *The University in Society* volume 2 London: Princeton University Press

Salamanca were at a level which, until very recently (when we moved into 'mega' territory), was characteristic of universities in a modern nation.

Following the Spanish conquests in South America, huge amounts of silver poured into Spain from Mexico and Peru. This funded a big expansion in jobs at the Spanish court, and in the wealth of the Catholic Church in Spain. An explosion in university foundations and enrolments followed, from 1550 onwards. Universities were, at this time, under direct Crown control but often had endowments financed by the Catholic Church, which was itself enormously powerful and influential. The growth in enrolments was vocational: increasingly in law, and specifically canon law. Graduates were employed by the Church or government: both in turn were sustained by this flow of wealth that was being taken from South America. This made a university education, and the payment of both fees and maintenance, a good investment for a family.

But then, from the 1650s Spain entered economic decline. The wealth had been spent, with no lasting benefit to the economy. As we can see in Fig E, enrolments in universities plummet as graduate employment shrinks, and a good many actually close. The number of government jobs falls sharply, and they are increasingly reserved for individuals with good contacts, drawn from a small number of institutions. Most universities that survive are small, local, and increasingly clerical. The 'gentleman' class, the small landowners, no longer send their sons to university. The very lowest point in university fortunes, shown by the sharp dip in Fig E, is during the Peninsular War: the surviving universities of the 19th century were shadows of their 16th-century selves.

FRANCE: ABOLISHING UNIVERSITIES

Although it took many centuries (and wars) for the French kings to establish centralised control over the whole country, mediaeval France was nonetheless wealthy and powerful. The University of Paris was, correspondingly, established very early Fig F, as a formal 'corporation' replacing the informal cluster of schools which recruited young men from across Europe: future clerics, lawyers and government officials. Paris is generally recognised as the second-oldest university in Europe, after Bologna.

Paris remained a magnet for scholars from all over Europe, but universities spread out throughout France during the next 400 years.³ Among them were Dole, Bourges, Valence and Cahors – all shown in Fig G, and none of which survive today.

In fact, none of the universities of mediaeval France survived – not even the University of Paris. Because the French Revolution was, truly, revolutionary: all 22 French universities were formally abolished in 1793. The Assembly decided, in true libertarian spirit, that having licences for doctors and lawyers was completely unnecessary and that anyone should be able to practise law and medicine. So there was no need for legal and medical faculties. As for the Catholic Church – the other main client for university graduates – first its taxing powers were abolished and its assets confiscated; then it was subordinated to the French government; and then (albeit for a short period) France was 'de-Christianised', with Christianity replaced by Deism, most churches closed, and a large number of priests forced to renounce their orders.

³ Hastings Rashdall (1936) *The Universities of Europe in the Middle Ages* Oxford: Clarendon Press

Fig F

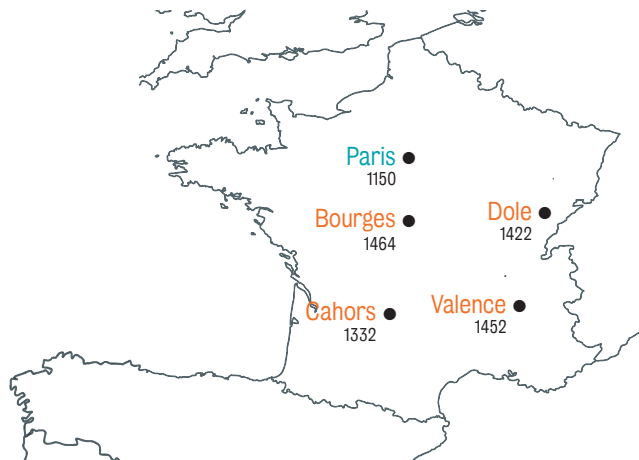
France

An early and successful start



Fig G

Universities that have disappeared



Both medical and law teaching (at a range of institutions across the country) and professional licensing by the state were reintroduced quite quickly, but it was a long time before the university structure re-emerged in any real sense. Under Napoleon, a single centralised structure for all education was created. Nineteenth-century France developed extremely good upper-secondary education, and also some very high-quality tertiary education. But the French government did not recreate universities, in the plural, as individual institutions, until 1896: and when it did, these had little of the autonomy of the mediaeval corporations.⁴

ENGLAND: THE RETREAT FROM AN EDUCATED LEGISLATURE

Fig H illustrates my third and final historical resting-place: England in the 80 years leading up to the Civil War. What you can see happening there is a steady increase in the percentage of MPs in the English Parliament that had been to either university, Oxford or Cambridge, or to the Inns of Court, which is where lawyers trained, or to both.⁵

In 1642, on the eve of the Civil War, the members of the English Parliament – the Parliament that went to war with King Charles I – were more educated than at any time until the end of the 20th century. Moreover, they were drawn from a population where young men's participation rates in higher education were greater than they would be again until the 1930s.⁶ Fig I

The growth in student numbers in the early 17th century was fuelled by demand from the bourgeoisie (many with newly acquired or expanded land holdings).

⁴ R D Anderson (2004) *European Universities from the Enlightenment to 1914* Oxford: Oxford University Press

J B Margadant (1990) *Madame le Professeur: Women Educators in the Third Republic* Princeton NJ: Princeton University Press

⁵ All figures taken from Lawrence Stone (1964) 'The Educational Revolution in England' *Past and Present* vol 28 41-80

⁶ This was not true for women, who were unable to enter university at all in the 17th century, but did, in increasing numbers, from the 19th century. See Alison Wolf (2013) *The XX Factor: How Working Women Are Creating a New Society* London: Profile (especially ch 5)

An educated legislature

English Members of Parliament 1563-1642

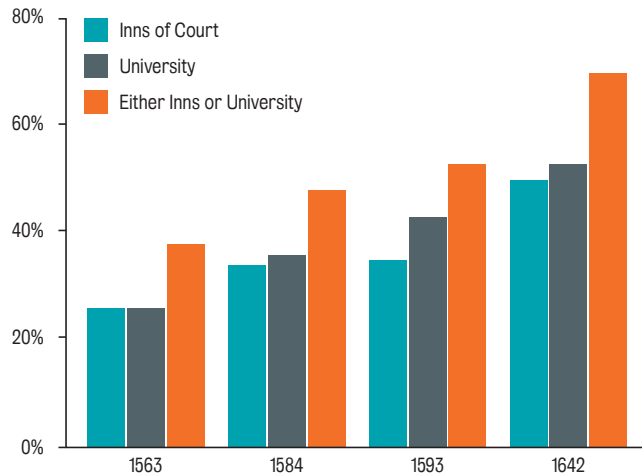


Fig H Stone, 1964

Percentage of young males entering higher education

England in the 17th to the 20th centuries

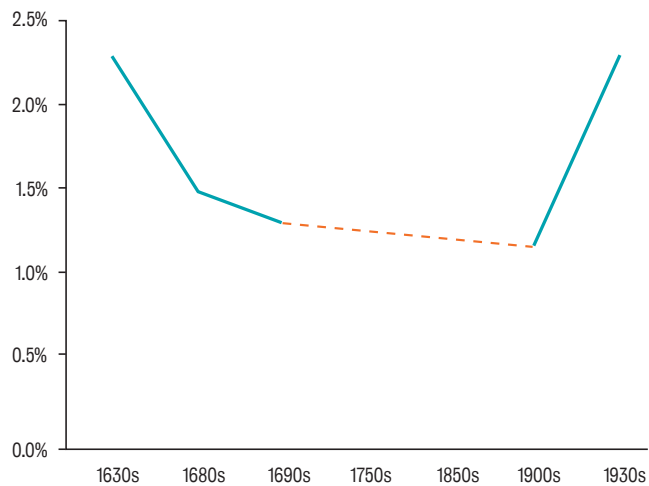


Fig I Stone, 1964; Wolf, 2013

It was a period of economic growth and a very active land market, and the increase in student numbers was to a large extent vocationally driven – there were more jobs for lawyers, and church livings were increasingly reserved for graduates. But it was also driven by a puritan zeal for learning. University students in the first half of the 17th century actually worked hard: this was a period of serious study as well as serious growth.⁷

But then, during and after the Civil War, participation declined; it was 150 years until demand started to grow again, and then only slowly. As late as the mid-19th century, there was little demand for university education in the English labour market – even less than in most of the rest of Europe, as legal education was offered by the Inns of Court, and medical training by hospital-based medical schools. The pioneers promoting new universities, outside Oxford and Cambridge, struggled and often failed to get them established. At times, UCL and King’s stayed solvent only because of their ‘junior departments’ or secondary schools.⁸

And even when English male participation rates finally reach 1630s and 1640s levels again, in the years after the First World War, it would have been a remarkable person – and I certainly know of no-one – who would have forecast our contemporary world of 50 per cent progression into higher education.

DRIVERS OF GROWTH AND DECLINE

What these three examples show is that there was nothing pre-ordained or smooth about the route from the mediaeval universities to our vast modern sector.

⁷ Lawrence Stone ed (1974) *The University in Society* volume 1 London: Princeton University Press
LS Sutherland & LG Mitchell eds (1986) *The History of the University of Oxford. Vol V: The Eighteenth Century* Oxford: Clarendon Press

⁸ Whyte op cit. Both University College School and King’s College School, now independent and successful fee-paying London schools, started as the junior departments of their respective universities.

But what were the main drivers of success, and decline, in earlier centuries? I would suggest there were three – and that they all offer important lessons about the more recent history of higher education, and its possible future. They were:

- ♦ The Church
- ♦ The state
- ♦ The publicly regulated job market

THE ROLE OF THE CHURCH

The mediaeval universities were in many ways unimaginably different from today's science-oriented, secular institutions. Nonetheless, it was the power of the Catholic Church that enabled them to emerge as institutions with genuine independence. Mediaeval societies really did enjoy a division of power. Their monarchs fought constantly to establish greater control over the Church, which in turn boasted not only huge wealth and the ability, *in extremis*, to threaten a monarch's immortal soul via excommunication, but also the right to try clerics in its own courts, and bar the secular courts from jurisdiction over them.

At various times, the Catholic Church deployed the Inquisition, and moved against heretical ideas fomenting in university circles. Protestant churches normally wielded less power – Protestant monarchs, having seen off the Catholic Church, were largely able to centralise control, including over any universities in their territory: university professorships in the German states, for example, became government appointments. But when Protestant hierarchies were powerful – as with the Scottish Kirk in the 17th and early 18th centuries

– they could also be deeply and effectively opposed to any form of university free-thinking.

Nonetheless, without the independent power of the Church, it is hard to see how universities could ever have emerged, and protected the free-thinking radicalism of, for example, Roger Bacon, the 13th-century Oxford friar who was an early and highly influential proponent of scientific empiricism. It was the shifting balance between Church and state which allowed the universities to gain real autonomy, playing one against another, and developing a genuine, if patchy, commitment to independent thought and inquiry. Church wealth, and the endowments of churchmen and religious commoners secured their autonomy. From about 1680 on into the early 18th century, Oxford was a Tory and Church of England stronghold, more or less openly at war with the English government of the day. Over time, this made it far less influential – but it could not be closed down, or forced to fall into line, because its endowments made it effectively independent of the state.

THE ROLE OF THE STATE

Today the state dominates, unchallenged. Where there were once two competing sources of power in European societies, today there is effectively only one. (In a few countries, the religious establishment still has enormous independent power – but none of them is in the West.) And state actions are absolutely central to the role that universities play in society today.

In [Fig.J](#), I have listed the five key pillars of the modern higher education sector. I'll have more to say about the first and the fifth later, but what is important is that three

of the five start with 'government'. Modern universities depend totally, for their position and influence, on state activity. They depend on government research spending. They depend on government support of teaching. And they depend on, and feed into, a labour market which is shaped and steered, to a large and increasing degree, by government policies.

Fig J

Five pillars of the modern HE sector

- 1 Economies which generate unprecedented wealth, and demand and reward graduate skills
- 2 Governments which pay for research
- 3 Governments which pay for teaching, directly or indirectly
- 4 Government policies which create 'rent' for graduates
- 5 The effects of scale – positioning and signalling in large and globalised societies

State revenues for higher education far outstrip private spending around the globe. This is true even in countries which charge fees to university students. In England, for example, projections indicate that at least half of the fee income which comes to universities in the form of Student Loans Company payments, for which students are liable, will never be repaid: the loans are income-contingent, and half will be written off.⁹ Moreover, universities also receive teaching grants for high-cost subjects, quality-related research funding, and project-based research funding. And England is, among developed countries, a 'high-fee' example. In the USA, the 'privates' (including the great Ivy League universities) depend to a large degree on fee income – but even there many students depend on government grants and loans, and the great private universities such

⁹ See the Independent Panel Report to the Review of Post-18 Education and Funding (the Augar Review), gov.uk/government/publications/post-18-review-of-education-and-funding-independent-panel-report

Research funding by the state

Total government R&D budget, UK

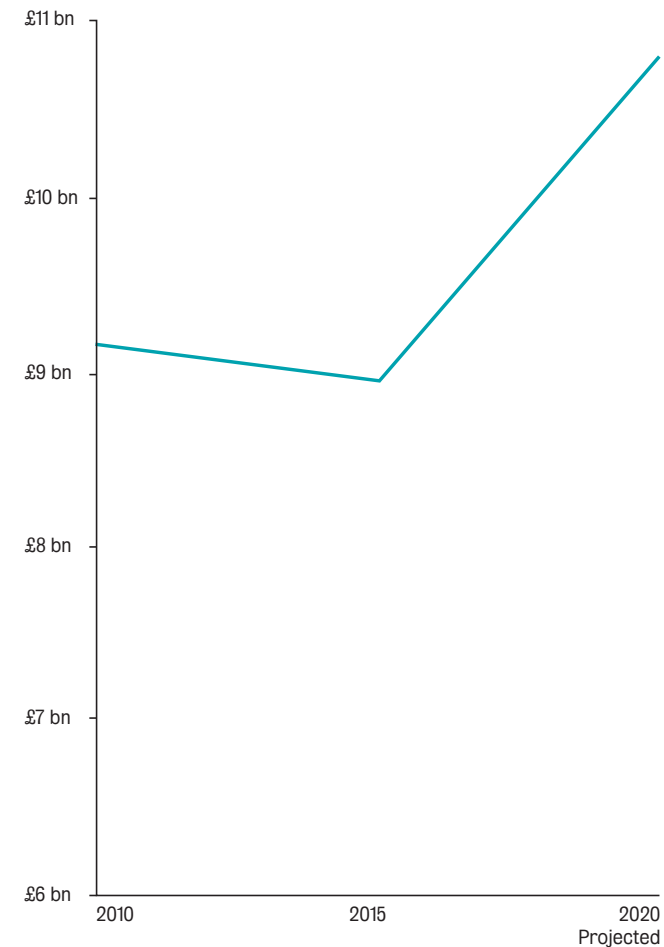


Fig K Royal Society
royalsociety.org

- 24% of total UK R&D expenditure (public & private) is spent by universities
- A further 3% is spent by the Research Councils

as Harvard and Stanford also derive huge proportions of their income from federal research grants.

Research funding in the universities overwhelmingly is, and always has been, state funding. And what I have shown in Fig.K are the most recent figures for the UK that the Royal Society has put together. Billions of pounds are both projected and already in the government budget for R&D spending in UK universities. This is a large amount of money, overwhelmingly larger than any individual contract that comes in from other sources.

So we are institutions that, more than at any time in the past, directly depend on the state for income. And the cost to the state is high – the OECD average is 1.5 per cent of GDP for higher education, compared to 3.5 per cent (on average) for all other forms of education put together.¹⁰

¹⁰ OECD (2018)
Education at a Glance

What is less obvious, but equally important, is the way in which our current flourishing is dependent on the active involvement of the state in the labour market. This is what I mean by ‘creating “rent” for graduates’ (see Fig.J) and it has always been important to universities – although in the past, the state did not also pay for students to be taught.

THE REGULATED LABOUR MARKET

I mentioned, in discussing the history of Castilian, French and English universities, how ‘vocational’ they were. People attended in order to practise certain restricted professions – to be a cleric or a canon lawyer (for which access was organised by the Church), or to be a civil lawyer (and most well-paid government posts went to lawyers) or a doctor, where the state progressively

restricted practice to those with a full licence. As we saw, for a short period the French Revolution did away with licensing – but not for long. In England, medicine and law were taught for many years outside the universities – but licensing was nonetheless important. In all of these cases, as professions could only be practised by those with the right qualification, supply was constrained. However good you were, you could not practise without the licence and with it, you would be able to.

This is what I mean by saying that governments create ‘rent’ for graduates, and by doing so, enormously increase the importance of universities. ‘Rent’ in this sense is an economic term for extra income: technically, the extra that accrues to the owner of a factor of production, over and above the amount of money / pay that would be needed to make it active / bring it into production. It’s what you get if you have monopoly power, which is what a licence creates – ideally for good reason (and few of us are in favour of unlicensed doctors), but monopoly power nonetheless. Licensing reduces the number of people who can practise and it increases their average income.

Today, almost all the important licence-based occupational monopolies are controlled, directly or indirectly, by the state. Moreover, their number has tended to grow, and more and more of them require a university degree. The growing number of health professions is an obvious example, but many countries require not only that teachers have a degree but that they also have university-based teaching qualifications. In the UK, law is now a graduate profession, rather than one that can be followed through articles. All these developments depend, ultimately, on state decisions and state power – and are very good for universities.

THE UNIVERSITY IN THE MODERN WORLD: SKILLS AND SIGNALLING

In Fig J, I suggested that there were five major pillars supporting, and structuring, the modern university sector. I'll be returning to the last of these in detail in Lecture III: the ways in which the sheer scale of higher education, and the globalised nature of our economies and societies, have meant that universities 'signal' their individual prestige, and graduates take on the status of their alma mater. But a university education is not just about signalling excellence and nor, today, is it confined to the traditional routes into regulated and licensed professions that have been important throughout universities' histories.

Our universities are huge, in sizeable part because we can afford to make them so. And we can afford that because our economies have an unprecedented ability to generate wealth. Why this is, and what makes developed, post-Industrial Revolution economies more or less successful, is a topic that fills libraries. But it is clearly true that an economy such as ours definitely employs (and 'needs') a large number of highly skilled and highly educated scientists, engineers and technologists; assumes and depends on very high levels of literacy, by historical standards; and also that innovation and technical progress incorporate the results of frontier research, much of it carried out in universities. So while it is debatable whether our economies 'need' the current levels of university participation – a topic I also will return to in Lecture III – universities do provide them with large numbers of people who are trained and educated in subjects and skills which in the past were needed far less, or not at all. Fig L

The modern labour market

Fig L ONS, US Bureau of Labor Statistics

1900	2000
5% of workforce in professional and technical occupations	25% of workforce in professional and technical occupations
25% of workforce engaged in 'hard' manual labour as labourers, agricultural workers or miners	5% of workers in 'labouring' occupations
Few married women employed	Employment rate for adult women almost as high as for men

So are there storm clouds ahead? Or can we confidently expect that the universities will continue to grow, will become central to yet more of the economy and more people's lives, and that states will continue to fund as generously?

A number of possible threats can be identified, some of them, in my view, more serious than others. They are:

- Distance learning replacing bricks-and-mortar institutions
- A decline in the perceived economic value and attractiveness of degrees
- Falling research budgets
- A political backlash against the sector

DISTANCE LEARNING AND WHATEVER HAPPENED TO MOOCs?

For many years now, governments have hoped that technology would slash the rising cost of education budgets, both at school and university level. And some technology enthusiasts have been keen to forecast exactly such a convenient revolution. Optimism reached its high point a few years ago, with the advent of Massive Open Online Courses, created by leading universities, for which anyone could sign up (often for free). Why bother to pay for attendance at Harvard, enthusiasts asked, if you could access their lectures and reading materials for free online? Why pay for the upkeep of buildings and estates, why pay the maintenance costs of your children studying in London, or Boston, or Melbourne, if everything could be delivered direct to their bedrooms at home?

One much-covered publication predicted that: 'An avalanche is coming... MOOCs have opened up access to tried-and-tested curricula for anyone in the world to use... If the students and professors at a university are dispersed across the globe, why shouldn't the administrators be?... In respect of governance and administration, universities are little different from global companies, which succeed perfectly well with dispersed governance and management. Indeed, for the emerging MOOCs this is inevitable.'¹¹

Sceptics noted that university was almost as much about making contacts and developing networks as it was about learning; and that human learning is inherently labour-intensive, since it is so closely related to discussion and feedback. They also suspected that, if Harvard, MIT *et al* had really believed that MOOCs

¹¹ Saad Rizvi, Katelyn Donnelly & Michael Barber (2013) *An Avalanche is Coming: Higher Education and the Revolution Ahead* London: IPPR

could actually destroy their model, they would never have underwritten them. And five or six years on, the impact of MOOCs has been, if anything, even less profound than the sceptics expected. MOOCs have become a niche product. They are taken, overwhelmingly, by the already highly educated; and completion rates are extremely low.¹²

Online and 'blended' provision are large-scale, but also concentrated in the lower-prestige parts of the system. In America, online courses are very important in the community colleges, and have had no effect whatsoever on competition for Ivy League entry, and very little on how the top universities teach. The story to date underlines how much universities today provide and sell an institution-specific reputation; such reputations are valuable because they are restricted. Our 'connected' world is, in many ways, very different from 20, let alone 50, years ago: but technology is not a major threat to the current way we run universities, nor to their financial welfare.

DECLINING RETURNS

Graduates, on average, earn more than non-graduates but the extra amount is, on average, declining.¹³ This is obviously very likely to happen, when you have more and more people going to university; and we also know that a large number of graduates are doing jobs which used to be 'non-graduate' and whose nature (and associated salaries) have not changed much, if at all.¹⁴

At an individual level, this does not mean that going to university has become pointless – on the contrary, if more and more of the desirable jobs are graduate-entry-

¹² See eg Justin Reich & José A Ruipérez-Valiente (2019) 'The MOOC Pivot' *Science* 363(6423):130-131

¹³ See eg Augar Review 2019 op cit; Belfield, C, Britton, J, Shephard, N & van der Erve, L (2019) *Where is the money going? Estimating the government cost of different university degrees* London: IFS ifs.org.uk/uploads/publications/bns/BN244.pdf

¹⁴ Office of National Statistics (2017) *Graduates in the UK labour market: 2017*. ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/articles/graduatesintheuklabourmarket/2017
Green, F and Henseke, G (2014) *The Changing Graduate Labour Market: Analysis Using a New Indication of Graduate Jobs*. LLAKES Research Paper 50. lakes.ac.uk/sites/default/files/50.%20Green%20and%20Henseke_0.pdf

Large differences exist in annual expenditure per full-time university student (US \$s at Purchasing Power Parity [PPP]) 2013

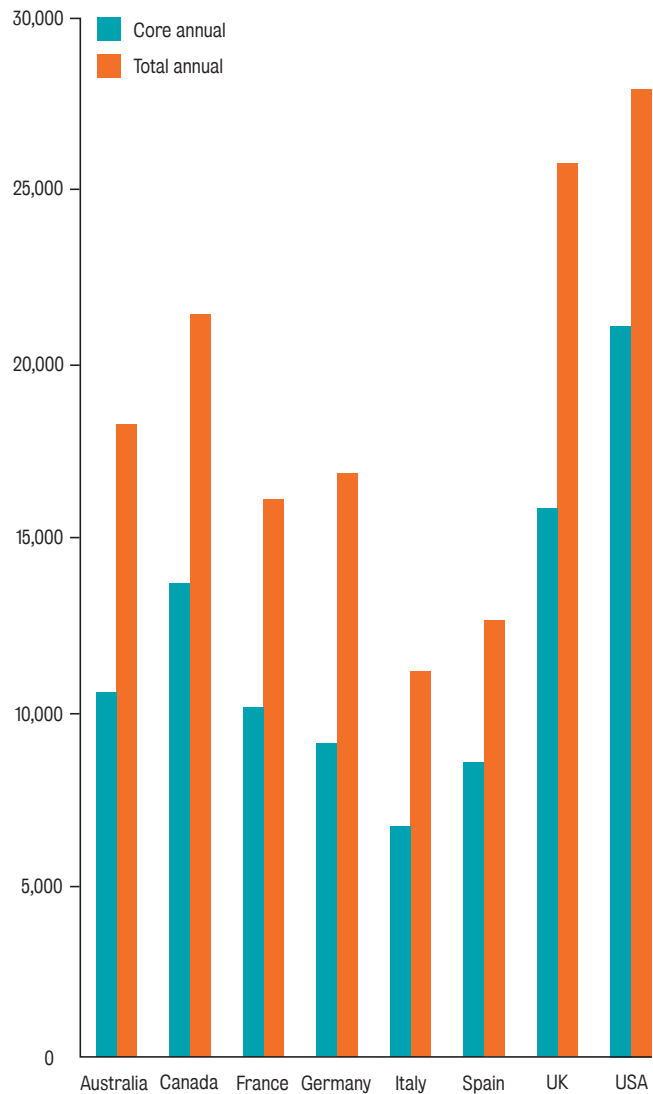


Fig M. OECD (2018)
Education at a Glance
Paris: OECD

only, the pressure is greater, not less. But it does affect the way governments see the sector. As I explained earlier, most of the cost of higher education is borne by the taxpayer. In cases where an individual graduate does not move on to a very well-paid job, the cost of that education is higher. In a system like ours, they will repay less of their income-contingent loan, and in a system where tuition is 'free', they will pay less in taxes over a lifetime than graduates used to when there were fewer of them, but they earned more on average.

If university education comes to be seen as less economically worthwhile than it once was, governments will resist cutting access – that would be very unpopular – but will be increasingly tempted to spend less per student. In the UK today, we enjoy generous levels of funding, as Fig M shows, but many people in the UK can remember the consistently declining 'unit of resource' in the 1980s and 1990s and the cumulative effect that had on quality, and on the emigration of many of the best scientists. A real danger of ongoing 'massification' is that governments will move towards much lower levels of support per student.

FALLING RESEARCH BUDGETS

Universities in the UK are the main recipients of government research spending – and in the current climate this is not likely to change (although they may well lose access to some EU funds). All Western governments are signed up to R&D expenditure because they see it as the way to increase productivity and to maintain their place as a wealthy part of the rich world. It's pretty much an act of faith that the

more R&D funding, the better. If governments lose that faith, then the modern research university model is immediately under threat. I will be discussing that model in depth in the next lecture.

POLITICAL BACKLASH

Finally, it is worth highlighting a significant change compared to even a few years ago: namely, growing antagonism towards universities in the media, both from the right and the left. I suspect most people would guess that this paragraph appeared in the right-wing British press.

In any other area it would be called mis-selling. Given the sheer numbers of those duped, a scandal would erupt and the guilty parties would be forced to make amends. In this case, they'd include some of the most eminent politicians in Britain.

But we don't call it mis-selling. We refer to it instead as 'going to uni'.

But it didn't. It came from a *Guardian* columnist, Aditya Chakraborty, and it reflects a real and recent change, away from a period when universities were generally seen as slightly sainted institutions, above the political fray. As we have got bigger, and richer, we have also come under more scrutiny; and, as I just noted, more and more people are coming to feel that their own, or their friends' and families' degrees, are not 'worth' what they used to be. In this situation, there is a real and growing risk of greater government control, as well as lower funding levels.

But crystal ball gazing is a hazardous activity. I don't think 16th-century Spanish students at the universities of Baeza and Avila could have imagined a future in which one of their institutions would close forever – as the University of Baeza did – and in which Avila was reduced to five students before things turned around. I think the pre-Civil War English might have envisaged the universities being taken over by 'reactionary' Anglicanism, but I don't think they could have imagined a world in which the Church was essentially irrelevant to the university. What does seem quite certain is that we are not, today, in a happy, steady state.

LECTURE II

MAKING HIGHER EDUCATION POLICY

Tuesday 19 March 2019
New Hunt's House, London



Universities have always been creatures of the state. They have needed the permission of the state to operate: moreover, in their early years, they thrived because they were given corporate privileges and allowed to amass and control endowments. They have also, for much of their history, been creatures of the Church as well: they developed in Europe, and it was the tension, here, between Church and state which allowed them to develop with a level of genuine autonomy. Crucially, the support of the Church also underpinned their accumulation of assets.

As the power of the Church waned, the importance of the state became commensurately dominant. Sometimes, states neglected and indeed destroyed universities. Sometimes, they supported and developed them. And the subject of this second lecture is one of the great triumphs of state policy: the creation of the modern research university.

As we have seen, the university in its present form is the creation of mediaeval and early modern Europe, and it spread across the continent. During this period universities were essentially vocational institutions, providing training for the clergy and other professions, including medicine. They also developed a commitment to logic and analysis; housed some original thinkers; and were – much of the time – genuinely committed to learning. In 1494, Pope Alexander VI issued a Papal Bull for the establishment of a university in Aberdeen. The Bull argued that, considering that in parts of the ‘kingdom of the Scots’, there

‘...dwell men who are rude, ignorant of letters and almost barbarous and who... cannot have leisure for the study of letters ... [then] if in the famous city of

Old Aberdeen... there should flourish a university in every lawful faculty, very many men of the said kingdom... would apply themselves to such study of letters and acquire that most precious pearl of knowledge.’

This is a wonderful passage and it encapsulates much of what a university can and should be about. But it doesn’t say anything about research, for the simple reason that the idea of ‘research’ as a specific and important activity had not yet developed, and no-one saw it as anything to do with a university.

Two hundred years later, after the turmoil and conflicts of the Reformation and the Wars of Religion, research, or more specifically, science and scientific research, have become important, visible, increasingly supported by the state – and are developing outside the universities. In Enlightenment Europe, early ‘modern’ science was largely self-funded by affluent scientists. The Royal Society paved the way; established in 1660, recipient of a royal – that is state – seal of approval, totally divorced from the ancient universities, and dedicated to experimental learning. Scientific journals emerged at speed.^{Fig A} Yet science remained largely the preserve of ‘amateurs’ – highly gifted and serious, but not paid to be scientists, who worked in their homes and came together in clubs and societies.¹

This was not just true of England. Institutes and societies developed in the provincial towns of Italy, France and Germany – among people who were involved in business, involved in the modern economy and had a strong interest in science as amateurs. The universities, meanwhile, confined themselves largely to professional training, for the Church, the law and medicine – and not even the latter in England, where hospital-based medical

¹ Derek J de Solla Price (1961) Quantitative Measures of the Development of Science *Archives Internationales d’Histoire des Sciences* vol 14, 85-93

Derek J de Solla Price (1963) *Little Science, Big Science... and Beyond*. New York: Columbia University Press

Cumulative number of scientific journals Founded 1650-1825

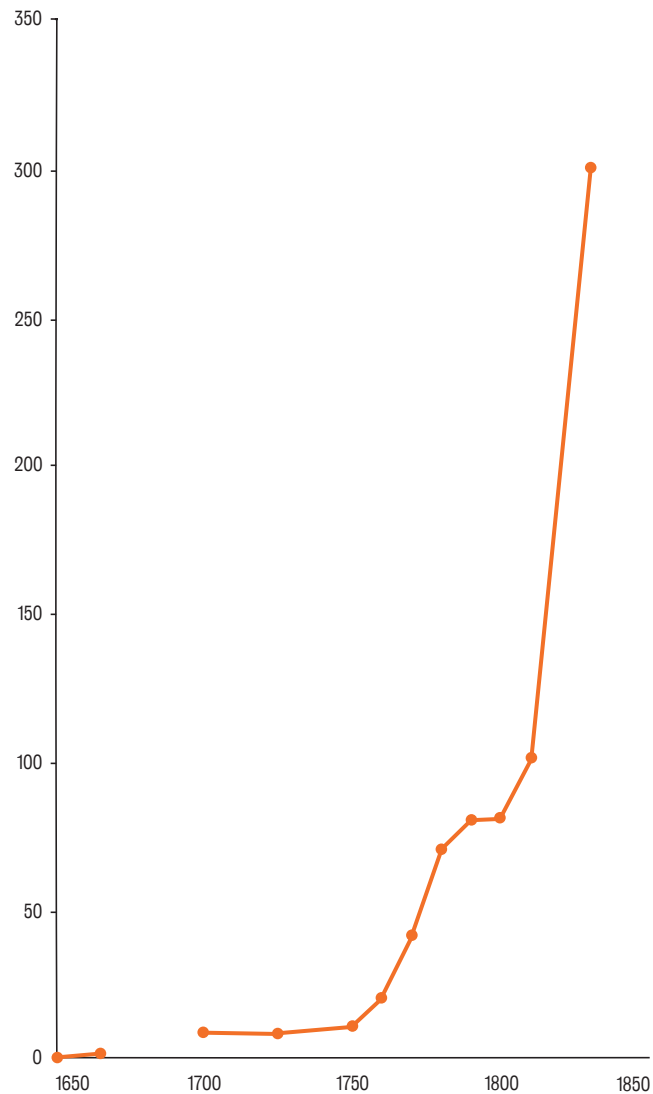


Fig A de Solla Price (1951)

training was the rule. There were formal anatomy lectures at St Thomas' Hospital from 1649, joint Guy's / St Thomas' teaching ran from 1750-1825, with an independent medical school here at Guy's from 1825.

Any history of the modern research university will note that 'it all began in Germany'. But in the 18th century – well before German unification – scientific research was very much focussed around academies and institutes, set up by individual states. The German princely states paid for these, supported by local aristocracy and local burghers. The most famous was set up by Frederick III of Brandenburg who founded the Berlin Academy in 1700 under the name *Kurfürstlich Brandenburgische Societät der Wissenschaften*, upon the advice of Leibniz. Later (with the growth of the successor state of Prussia) it was renamed the *Königlich-Preußische Akademie der Wissenschaften* and became the most famous in central Europe. But it was not part of a university.

Indeed, by the late 18th century, it seemed quite possible that universities would become ever less central to secular life. They would probably remain professional training grounds, but not centres of academic or intellectual endeavour. They might even disappear. Most of the people who then taught in German universities had no particular interest in scholarship: they were given professorships (by the state) because they were the top local lawyers and doctors, or eminent local clergy. German intellectuals of the 18th century labelled universities reactionary and intellectually sterile, existing simply as sources of local patronage, and called for their abolition.² The French Revolution actually did lead to the abolition of universities: individual universities, with local

² R Steven Turner (1974) 'University Reformers and Professorial Scholarship in Germany 1760-1806' in Stone ed. Op. cit.

institutional governance and some degree of autonomy from the central state bureaucracy, were not re-established in France until the end of the 19th century.

And yet, in conservative, often reactionary, pre-Napoleonic Germany, the 'research university' emerged to become, in the 19th century, central to intellectual and economic progress; and, in the 20th, the 'ideal type' of what a university should be. And this was the work of the state.

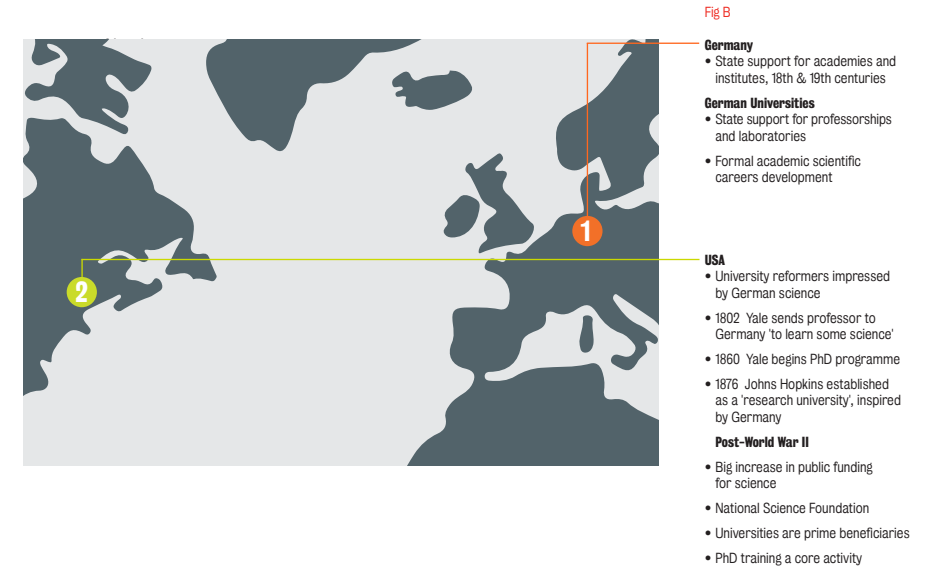
THE ORIGINS OF THE RESEARCH UNIVERSITY

Fig B provides a highly simplified and schematic view of how this happened, starting in Germany and then moving to the United States. Since then, the model has spread across the world.

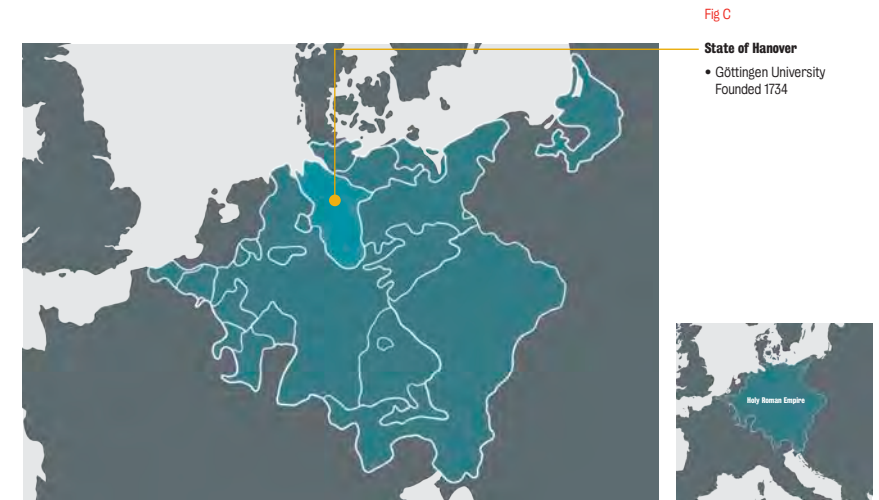
It was in German universities of the 18th and 19th centuries that the notion of a *scientific* apprenticeship, overseen by a professor in a laboratory, was formed. But to understand how this happened, and why it happened in Germany, you need a map of the Holy Roman Empire. Fig C

The Holy Roman Empire, as many people have observed, was neither Holy, nor Roman, nor an Empire. It did, however, encompass 18th-century Germany – which, as you can see, was a bit of a jurisdictional mess. It was made up of a very large number of independent states of highly varying size and prosperity. These states were also authoritarian and centralising. Across Germany, old corporate privileges were being attacked and removed, and the institutions and towns to which they were attached were becoming less and less

The road to the modern research university



The Holy Roman Empire, 1789



autonomous in many ways. In Protestant states, the rulers dominated the churches; and even in the Catholic ones, the power of the Church was a shadow of its mediaeval past.

This meant, among other things, that the rulers of these small conservative states had tremendous power over any universities in their domain. For the most part, they just left them to trundle on training people for the professions. But the sheer number of states also created opportunities for experiment and change. If you had an enlightened, modernising ruler who wanted to compete with and outshine other enlightened rulers, the result was something quite new. A combination of a de-centralised polity, with multiple centres of active support and increased expenditure, created a market in scholarship, recruiting leading scholars from across Germany. Only some states were involved – but it was enough to create a whole new dynamic.³

The most important state in this story was ruled by the Hanoverians. This seems extraordinary to anyone who knows about the Hanoverian kings of Britain, notably George I, II and III, none of whom was ever accused of scholarly and scientific interest and inquiry. But the family was ambitious for their home state of Hanover to become more important, more respected and more successful; and their 'home' ministers back in Hanover, especially the prime minister, Gerlach von Münchhausen, were educationally enlightened. The result was that they founded Göttingen University in 1734.

At both Göttingen and Halle (founded in Brandenburg in 1694) there were major reforms to the curriculum, away from a purely vocational emphasis to a concern with academic knowledge, and a new emphasis on scholarship. Both universities were also

pioneers in pedagogy – the seminar was developed at this time, firstly in philology – but in other respects this was essentially a return to the ideals expressed in the Papal Bull that established Aberdeen. However, the idea that discovery and research were a primary purpose of the university had not arrived. These institutions' purpose was teaching; but it was out of this 18th-century reform, with its state-financed inter-university competition, that research careers and the research university developed.

In the years following the Napoleonic Wars, science became increasingly important, and in Germany it was supported and funded in the universities rather than in the academies. Prussia undertook major university reforms, with a commitment to high-quality scholarship and disciplinary autonomy (though not 'free speech' in our modern sense) and, as the leading German state, became commensurately important in the development of university science. But it was never alone: rather, what developed was a pan-German structure for academic, including scientific, careers.

This structure was based on qualifications. The *Habilitation* gave the right to lecture and was a precondition for becoming a professor. To attain it you had to do a serious piece of research and scholarship. Working as a *Privatdozent* – a 'private teacher' – also became institutionalised across Germany as a precondition for professorship. Younger academics worked – taught – for fees paid to them by the students, and were in their turn mentored and taught by a professor. That was the route to becoming a professor in a discipline; and professors earned a salary paid by the state. Increasing state interest in science led to the funding of new chairs and laboratories: here, professors

³ Joseph Ben-David (1984)
The Scientist's Role in Society
Chicago: Chicago University Press
(1968) *Fundamental Research
and the Universities:
some comments on
international differences*
Paris: OECD

often concentrated their teaching on a few favoured students who were aiming at academic careers as excellent scholars and research scientists.

Although the biggest and most famous university in 19th-century Germany was in Berlin, it was not the only one involved in what we can now see as the creation of the research university – one in which research activity underpinned academic success, and in which the process of research was central to university activity. Research laboratories were standard by the end of the 19th century. There was genuine competition from other universities around Germany, just as there had been competition in the reforming century before. Industries and businesses directed funds to their own local universities. The chemistry laboratory was pioneered at Giessen. Zeiss transformed the university of Jena from 1889 on. In Prussia, industrialists lobbied for and co-founded chairs in industrial chemistry.

German universities became known all over Europe and the United States for their scientific excellence, but two points are worth underlining. First, these universities, science laboratories and academic science posts were state creations – and the states concerned were not democratic, liberal countries in the sense that we might, today, expect. They valued scholarship and disciplinary research – but that did not mean professors could go ‘off-message’ and start disagreeing with the ruler or criticising the way the state was run.

Göttingen provides a famous example of this. When Queen Victoria became queen here in Britain, Hanover reverted to a cousin in the male line – as a female, she couldn't rule Hanover. And at that point her cousin revoked the constitution. There was a huge row and some of the Göttingen University professors (including

the Grimm brothers of fairy-tales fame) protested. They were summarily thrown out of their jobs and they had to leave the state.

Second, and this is particularly worth underlining given our modern obsession with universities as direct engines of growth and contributors to the economy, 19th-century German universities were quite ‘anti-vocational’. Engineering was taught in separate technical institutes, and pure research, not professional training, was what attracted high prestige. The industrialists of the time certainly supported their universities, and used their findings – notably in chemistry. But neither side saw applications (let alone ‘spin-offs’) as the concern of the university.

THE USA AND THE GROWTH OF SCIENTIFIC CAREERS

At the turn of the 20th century, the reputation of German science was at its zenith. Universities were organised to develop science careers. High-prestige professors were able to secure generous funding for their laboratories. And before the catastrophe of Nazism, Germany dominated the Nobel prizes in Physics and Chemistry. If you visit Thomas Edison's workshops in West Orange in New Jersey, his study is preserved there and the striking thing, for the modern visitor, is that the journals lined up in the bookcases are German-language journals. If you wanted to study science seriously at that point, and keep up to date, you had to read German.

However, the actual number of science students in Germany was not particularly high. German science in

its golden age was always small-scale. Professors across Germany were appointed individually by the state: the total number of state-funded positions was 3,090 in 1909. Laboratories were equally small and personal.

As Figs D & E show, science students were a minority – and the proportion studying ‘pure’ science in Prussia was much the same as in Oxford, which we, in Britain, tend to think of as ‘anti-science’ and generally reactionary in this period.⁴ What was so important about Germany, for this story of the modern university, is that the country’s universities had created a clear, structured, academic career path built around research.

It was the US which took the German model and turned it large-scale and global. American scholars and university leaders decided early in the life of the republic that Germany was the place that knew about science. If their universities were going to develop expertise in science, they would have to go to Germany to learn how. As early as 1802, Yale sent one of its professors to Germany for that reason. Yale began a full PhD program modelled on the German approach in 1860; and in 1876, Johns Hopkins University, named after its major benefactor, opened as a research university directly inspired by Germany.

However, although Johns Hopkins was German-inspired, it was actually quite different from German universities in some very important ways. It was not a state institution, but rather a semi-private enterprise, with greater autonomy. And it followed a much clearer departmental structure, rather than one where individual professors had their own labs and controlled which young academics they taught and mentored. The institution had greater autonomy, the professors less. Later, it was in the US that distinct graduate schools

⁴ Paul Windolf (1997) *Expansion and Structural Change: Higher Education in Germany, the United States and Japan 1870-1990* Oxford: Westview Press
Janet Howarth (2000) *Oxford for Arts: the Natural Sciences, 1880-1914* MG Brock and MG Curthoys eds. *The History of the University of Oxford Volume VII: Nineteenth-Century Oxford Part 2* Oxford: Clarendon Press

Student numbers by faculty

Prussia 1908

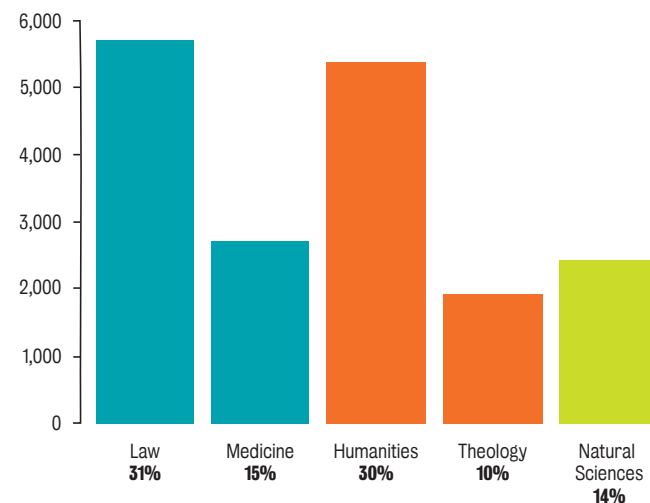


Fig D Windolf 1997

Natural scientists

As a proportion of all Oxford graduates

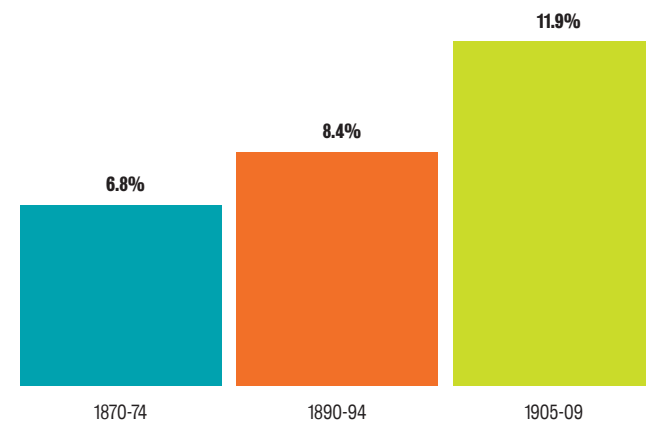


Fig E Howarth 2000

were started: just as in 18th- and early 19th-century Germany, the highly decentralised system allowed institutional innovation. Perhaps most important of all, American universities increasingly offered young scientists jobs that were salaried, as opposed to their having to scrape a living getting fees from students.

This underwrote a big increase in the numbers of young people studying science at advanced level, which in turn allowed universities to meet a rapidly growing demand from the labour market for scientists. As Fig F shows, in the first 60 years of the 20th century, the number of scientists rocketed; 1960s science is a very long way indeed, in this respect, from the gentleman amateurs of the Royal Society's founding in 1660 London.

Although America's German-inspired universities became increasingly distinct, the centrality of research in scientific education remained. But was this simply because of industry and the job market? No: once again, the state played a central role. You cannot separate the rise of the research university in America from the activities and the funding of government, any more than you can do so in Germany.

The 1870s saw the foundation of Johns Hopkins. They also saw the foundation of America's National Institutes of Health. These were free-standing institutes (like a huge version of the academies and institutes of 17th- and 18th-century Europe). But right from the start, they also incorporated a major grant programme to the universities. Today, both the NIH and the National Science Foundation are critically important for all the major US universities. The NSF was first conceived under the New Deal as a centrally controlled national body. There were big arguments after the

The growth of the scientific profession
In the USA

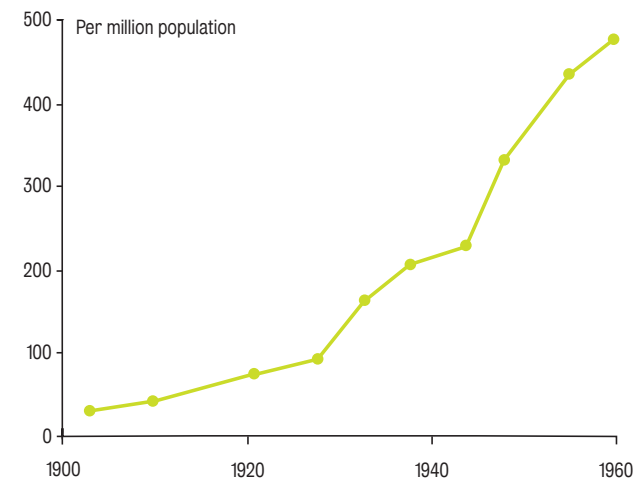
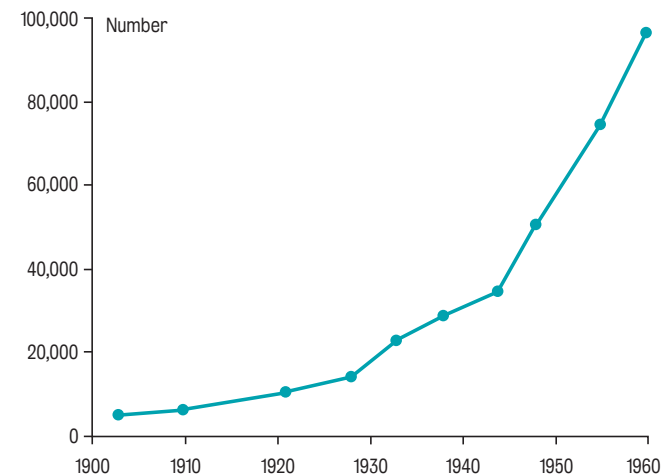


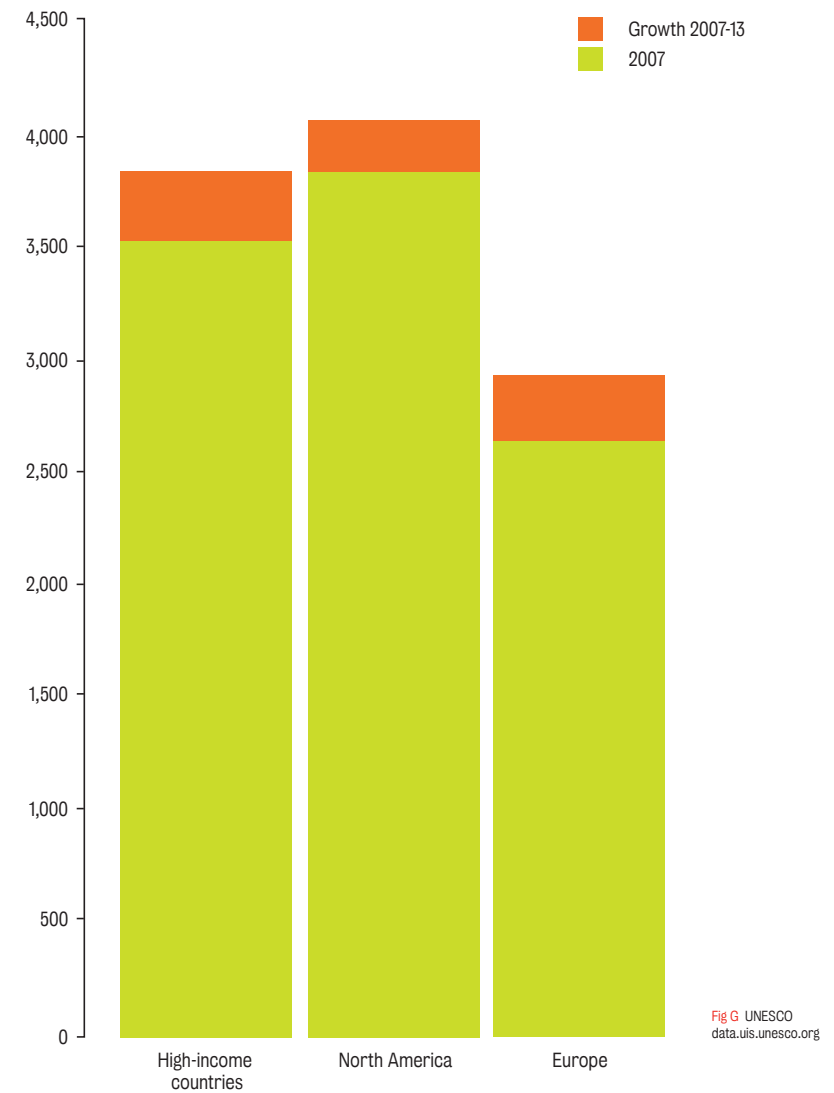
Fig F de Solla Price

Second World War about its governance; the first Congressional bill was vetoed by Truman; but in the end the second bill went through, creating a structure in which grants were effectively controlled by scientists. It was formally established in 1950 and its budget in FY2018 was \$7.8 billion, while that of the NIH was \$37 billion.

The National Science Foundation is probably one of the few recipients of government funding in contemporary Washington that still enjoys bipartisan support. Moreover, the stability of the United States' system of research funding is highly unusual and very helpful to both universities and individual researchers. It also has always deliberately tied the training of young scientists, through PhDs, into large parts of its grant programme. That has been very important to the growth and quality of academic science and of scientific research generally. ^{Fig G} Moreover, the basic structure developed in the United States – large amounts of state funding for research which is available to universities, and allocated through competitive processes, along with an emphasis on the research-based PhD as the key qualification for both academic and many non-academic scientists – has spread across the globe. (The PhD is increasingly the required qualification for all academics, but does not, outside science, have much importance in the general labour market.)

In the process, our whole notion of 'the university' has changed. In its origins, and for most of its history, the university has been about professional training and learning. Today, it is increasingly defined as being 'about' research: its teaching is seen as distinctive from what goes on in schools and other educational institutions due to the extent that it is 'research-led'.

Researchers per million inhabitants
2007-13



Academic careers are built on the basis of research grants and publications. The universities which enjoy the greatest prestige are referred to as 'research universities' and their academics know that their working week will (at least in theory) incorporate research time.

The concept of universities as intrinsically research-oriented has been part of UK thinking for a good while now. It has major cost consequences for the state, as the main funder of universities, because an institution in which the teaching staff also need paid research time, and which also requires state-of-the-art research facilities and libraries, clearly costs more than a teaching-only one. This is one reason – though not the only one – why many countries have developed and maintained non-unitary systems of higher education, unlike England. And our own post-War history, in which a series of non-university higher-education institutions was created, and then transformed into universities, also illustrates very clearly the extent to which both governments and the public have 'bought into' the belief that research contributes to both quality and prestige.

Back in 1971, during the brief period when this country had a clear binary system of universities and polytechnics, Sir Edward Boyle, one of the most distinguished of post-War education ministers, argued that critics of the divide ignored both the nature and cost of research. "It can't be sensible to try to replicate research which is already being undertaken by universities. [And] how much are we prepared to spend on building up the libraries of what are called the 'non-autonomous' institutions so that they approximate to university standards? It's no use shirking such questions."⁵

Almost 50 years later, we have not just a country but a world in which the prestige of universities is a function

⁵ *The Politics of Education: Edward Boyle and Anthony Crosland in conversation with Maurice Kogan* (Penguin 1971): 128
Boyle also argued that "the essence of the work of a university could be summed up as teaching in the atmosphere of research". Ibid 129

not of their teaching but of their research. States either continue to operate with segmented higher education sectors, in which research funding is allocated on an overtly unequal basis, or operate competitive funding – like the NSF or our own Research Council and QR funding⁶ – which in practice creates self-perpetuating inequalities. Universities with high levels of funding attract leading research academics and can afford to support their research, which in turn leads to a new series of research grants. And research success also more than pays for itself because, by feeding into international prestige and league tables, it allows institutions to charge very high fees.

Global university rankings

Times Higher Education Rankings 2019: top 20	Shanghai Rankings 2019: top 20
Oxford	Harvard
Cambridge	Stanford
Stanford	Cambridge
MIT	MIT
California Institute of Technology	Berkeley
Harvard	Princeton
Princeton	Oxford
Yale	Columbia
Imperial	California Institute of Technology
Chicago	Chicago
ETH Zurich	UCLA
= Johns Hopkins	Yale
= University of Pennsylvania	Cornell
UCL	University of Washington
Berkeley	UCL
Columbia	Johns Hopkins
UCLA	University of Pennsylvania
Duke	University of California San Diego
Cornell	ETH Zurich
University of Michigan Ann-Arbor	University of California San Francisco

⁶ QR or 'Quality Related' funding is allocated to UK universities on the basis of a periodic national review of research quality

Fig H

Fig H shows the 'top 20' universities of the world in the most recent *Times Higher Education (THE)* and *Shanghai* rankings. All are major research universities. Those in the US, which have unregulated fees for 'home' students, charge very high fees to everyone. Those in the UK charge extremely high fees to international students – and can do so because of their research reputations.⁷ In a recent study, Andrew Jenkins and I estimated that being an English university included in the global top 50 of the *THE* rankings brings you approximately £2,700 extra teaching income per student, compared to the rest of the sector.⁸

⁷ Hazelkorn, E (2015) *Rankings and the Reshaping of Higher Education: The Battle for World-class Excellence* (2nd ed.) Basingstoke, England: Palgrave Macmillan

⁸ Wolf A and Jenkins A (2018) 'What's in a name? The Impact of Reputation and Rankings on the Teaching Income of English Universities.' *Higher Education Quarterly* 72.4 286-303 October 2018

We have had Research Councils at the core of the UK's 'dual (state) support' system since the 1965 Science and Technology Act. We also have the Haldane Principle; this is about ensuring that state research funding is allocated on the basis of quality, as judged by researchers' peers. That principle is actually enshrined in legislation (in the Higher Education & Research Act 2017). Its general acceptance, across the political spectrum, reflects both modern societies' respect for research, and also our assumption that it is bound to be, in large part, funded and underwritten by the state.

So here we have the modern research university, which most people would consider one of the great glories of the modern world. It enshrines a commitment to research based on evidence and based on the freedom of scientists to develop and test hypotheses. Very often, in universities, we think of the freedom to do 'blue skies' research as something which has to be defended against the state, with its short-term concerns with labour market skills and 'relevant' research. And, as I argued

in the first lecture, the university was made possible by the existence, in mediaeval Europe, of a major countervailing force – the Catholic Church, which stood, often, against the state.

Nonetheless, the history of the research university shows that the state can be a powerful force for good. I personally believe very strongly in the importance of scientific research, and in research and scholarship more generally, and I doubt if anyone here tonight will disagree. Without the state's support, would the research university, or openly accessed research findings, exist? Could they? I think not.

LECTURE III

FALLING PRODUCTIVITY
AND SLOWING GROWTH:
DO OUR POST-2008
PROBLEMS HAVE ANYTHING
TO DO WITH UNIVERSITIES?

Monday 25 March 2019
Strand Campus, London



Compared to even 50 years ago, higher education today is discussed, overwhelmingly, in terms of its contribution to the economy: and that will be the focus of this third and final lecture. But before I turn to universities, productivity and growth, a little recapitulation is in order.

First of all, universities today are the product of an extraordinary century of growth, in size but also in wealth and influence. The growth has not been uniform, between countries or among institutions: but in pretty much every country in the world they have grown enormously in size. In many cases they have grown very wealthy and their influence has become enormous too. In my first lecture I noted how they often build accordingly: so MIT, an 'institute of technology', has aspirations towards the grand civic buildings of classical Greece and Rome, whereas not just Yale but Tokyo look back to the great Gothic cathedrals that dominated mediaeval Northern Europe. These are universities which are grand and feel themselves to be grand.

Participation rates in higher education have soared quite remarkably since the end of the Second World War, and have done so across the world. Fig A shows participation patterns for the G7 economies that were the largest in the immediate post-War years, and highlights the acceleration of enrolments that occurred. Meanwhile, in the developing world, participation rates have grown faster, and reached much higher levels, at earlier stages of development, than in the old 'first world' countries.

Fig B illustrates current graduation rates in the developed world. The percentage of adults that has completed tertiary education is, by historic standards,

Participation rates in higher education

Proportion of age cohort entering higher education by age 34
1900-2010

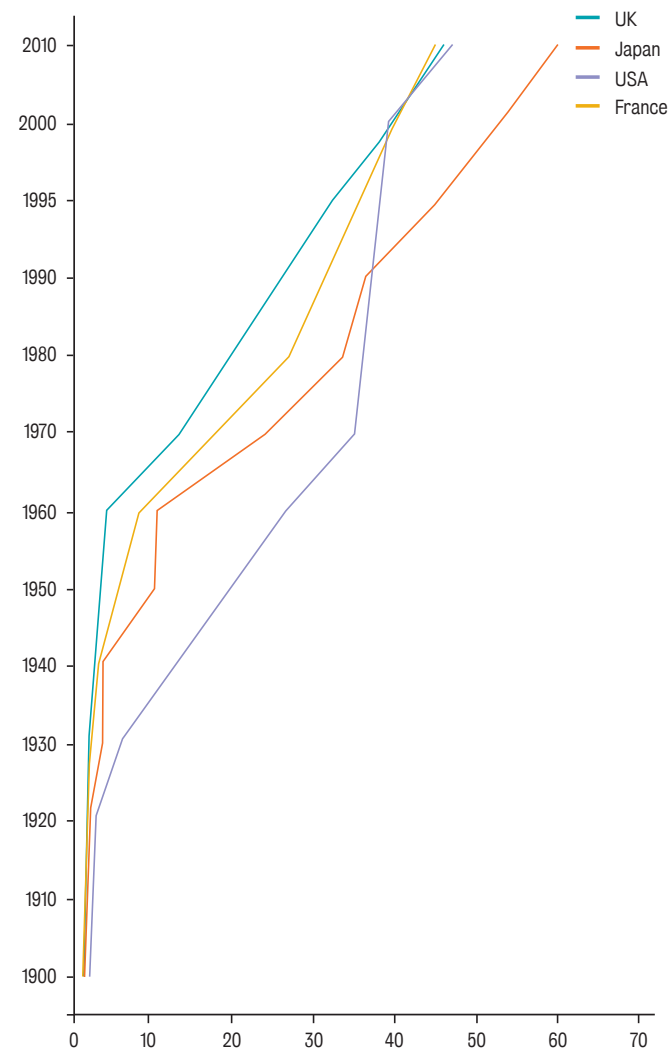


Fig A Major 'first world' economies 1900-2010, OECD, *Education at a Glance* (2018) Wolf 2013 Op. cit.

simply extraordinary. To our ancestors of not that many generations ago (when the idea of going to university was a complete irrelevance for the vast majority of the population), these figures would have seemed unbelievable. They would have thought that we were citing the wrong figures: these must be numbers for completing primary education, not university.

Fig B OECD 2018
Op. cit.

Current graduation rates (2017)

Country	Percentage of adults aged 25-34 who have completed tertiary education
Australia	52
Canada	61
France	44
Germany	31
Japan	60
Netherlands	47
Poland	44
Switzerland	50
UK	52
USA	48
OECD average	44
EU21 average	42

Alongside this enormous and continuing increase in student enrolments, universities have also, as I discussed in Lecture II, become central to scientific and medical research. This has made them extremely important to governments which, especially in the developed world, are constantly anxious to promote continuing innovation. To stay very wealthy, and at the top of the global tree, rich countries need to innovate – others can play catch-up more cheaply – and universities benefit from very high levels of

government support for research, motivated to some extent by a love of knowledge, and to a rather larger extent by a faith that research findings will translate into economic success.

The UK is particularly university-oriented in its research spending, although the trend is general. The government R&D budget goes almost entirely to universities, and over a quarter of all R&D expenditure, public and private, is spent by universities or by the Research Councils. But the UK is nonetheless firmly part of the mainstream in its attitudes. Some people here will remember the Lisbon Strategy (2000) which was intended to make Europe ‘the most competitive and dynamic knowledge-based economy in the world’. And this was to be achieved by increasing research spending, by a substantial annual increase in per capita investment in human resources, and also by ensuring that ‘the number of 18-24 year-olds... who are not in further education and training should be halved by 2010’. Increasing educational attainment and increasing research spending were the agreed ways of delivering innovation and a dynamic economy.

To repeat: this is all quite new. The modern research university started in the United States with Johns Hopkins. Fig C It was founded in 1876, and it was only at that relatively recent date that universities came to be seen as having an essential research function. Cardinal Newman’s classic *The Idea of a University* was published in 1852, just 24 years earlier, and research does not enter his argument. Universities are about knowledge, scholarship, teaching and learning, not about research, let alone about fuelling economic growth.

We are standing tonight in a university that encapsulates both contemporary trends – towards huge



Fig C Johns Hopkins University, USA; the university as the ‘natural’ home of research

size and huge research budgets. It was founded in the early 19th century as a very small institution, by modern standards. However, it had developed very strong research aspirations well before the end of that century; and today is one of the leading research universities of the world, with a student population whose size would have been extraordinary when I was an undergraduate, let alone when King's College was founded. And its budget has grown to match, with annual turnover now in excess of £800 million.

So universities today are in a remarkable position: one of pomp and affluence but also nervousness. We enjoy our current position in large part because our governments have decided to bet very heavily indeed on universities as a source of prosperity, and also as a source of social justice. And what I want to ask this evening is: how realistic are their bets? How far are universities actually able to deliver on these expectations?

Here in the UK, the economic expectations have become, in recent years, remarkably precise. UK policy-makers have been absolutely positive that if you increased the supply of university graduates you would quite certainly, as a direct result, get the prosperity that every modern government feels under enormous pressure to deliver. And to illustrate this point, I just want to highlight two quotations. The first one is taken from an article published in *The Guardian* by Estelle Morris when she was Secretary of State for Education, and it reads:

*'A one percentage point increase in the number of workers with higher education qualifications raises GDP by 0.5 per cent.'*¹

¹ E Morris
The Guardian,
23 May 2002

Now what the quoted data actually showed was that people with higher education qualifications earned more. And on average, indeed, they do. Unfortunately, it does not follow that if you have more workers with higher education qualifications, the country on the whole will be richer. The higher graduate earnings that have so entranced politicians are *relative*. They mean that graduates earn more than non-graduates, but tell you nothing about how much either group actually does make. It is perfectly possible for graduates to go on earning more than non-graduates while everybody gets poorer. One of the main problems with recent higher education policy, not just in the UK but world-wide, is that too many people have taken a finding about the relative prosperity of graduates and have turned this into a 'magic bullet' for delivering overall increases in absolute prosperity.

My second quote, which is a favourite of mine, comes from the English government white paper *Success as a Knowledge Economy*² which preceded the Higher Education and Research Act of 2017. It was based on some analysis by economists from a leading Russell Group university – though not, I'm glad to say, this one. The white paper, drawing on their analysis, announced that:

'Doubling the number of universities per capita is associated with over 4 per cent higher future GDP per capita.'

Now I dare say that's true, in the sense that the numerical relationship existed in the data set. And the writers of the white paper (and the economists) did at least say 'is associated with'. They didn't actually say

² gov.uk/government/publications/higher-education-success-as-a-knowledge-economy-white-paper

'doubling will have that causal effect'. But on the other hand, it was in the white paper in order to suggest that opening more and more universities is an ace idea for increasing future GDP. And no-one associated with the underlying econometrics asked for a disclaimer. If you read that paragraph in the way that, in my view, the government meant us to read it, you would conclude that for the good of the country, we should go out of here and divide King's up into eight mini-universities and do the same for UCL, and the same for Durham and the same for Manchester. That way we would sort out the flat-lining of GDP growth that we have been experiencing since 2008.

I'm being a little flippant here, but the point is a serious one. This is how governments around the world have come to see higher education, and I could have found comparable quotations from many other countries. Politicians have come to see it as a tool for delivering growth, and a tool that can be used in quite a mechanistic fashion.

Governments have also come to see higher education as a primary and effective tool for equalising opportunity and increasing social mobility. That is very obvious in this country and very obvious around the world. Take, for example this quote from a very well known economist, the former Governor of the Reserve Bank of India – India's central bank – Raghuram Rajan:

*'... the prospect of riches seems to be slipping out of reach for many... partly because a good education, the passport to prosperity, is becoming unaffordable... To restore [our societies'] legitimacy, industrial economies have to restore opportunity to the middle class by improving education.'*³

³ Financial Times, 17 October 2012
Legitimacy rests on restoring opportunity

There is a largely unexamined belief that one of the best things you can do for equality of opportunity and for social mobility is to go on and on expanding higher education; and also that 'free access' is especially good in this respect. In other words, the more the sector is supported by taxes, and the less students are asked to pay, the more egalitarian and 'progressive' the system. You can see this very clearly in the current competition for the US Democratic Party presidential nomination. Free college tuition is a favoured policy of almost all current contenders on 'opportunity' grounds: disagreements are largely just about upper limits, and where students can study. But a particularly informative example at the moment, because it demonstrates how this has become something quite closely akin to 'magical thinking', came from the current President of Mexico in 2018, when he promised to:

- ♦ Open 100 new public universities and
- ♦ Abolish entrance exams for university.

In December 2018, he actually cut funds for universities – but his proposed educational reforms in March 2019 included:

- ♦ Confirmed plans for new universities
- ♦ An undertaking to make higher education an obligatory part of citizens' 'basic education'.

President Andrés Manuel López Obrador sees this as a way of spreading opportunity in a very unequal country, and as a way of delivering prosperity generally. But the idea that you can do this whilst also reducing expenditure per head shows how much the international consensus has moved beyond evidence, or analysis, to faith and magic.

So here in the universities, we have been made instruments of our governments' hopes and our governments' plans. And in some countries we have been given far more resources than in the past; certainly in this country we have enjoyed big increases in funding, and many other developed countries spend a great deal on their universities. We have had an explosion in higher education enrolments, an explosion in the amount of university-based research, not just before but also after 2008. We have, in many ways, reaped huge benefits.

And has this also been a period of high productivity growth? Or one of higher social mobility? The answer is no, not obviously. No for growth and no for mobility also.

A PRODUCTIVITY PUZZLE?

In Figs D & E I have shown productivity trends over the last century and a quarter, and in the period since 1950. These are highly smoothed versions of charts which themselves use smoothed data – which means that they are able to show, clearly, some broad patterns.⁴

Productivity is something you can define in a number of ways, but what is shown in Figs D & E is labour productivity growth. In other words, it shows the growth (or fall) in the amount people produce per hour. The blue line shows the Euro area as a whole, the orange is the USA and the green is the UK.

A lot of that time the USA was a leader. The major exception is that huge peak in productivity growth across what is now the Euro area – mainland Western Europe – after the Second World War. Note that this doesn't mean these countries got richer than the US. What it does show is the dramatic growth rates that

⁴ Bergeaud A, Clette G and Lecat R, 2016. Productivity trends in advanced countries between 1890 and 2012. *Review of Income and Wealth* Series 62, Number 3, September 2016

Labour productivity growth, total economy (smoothed)

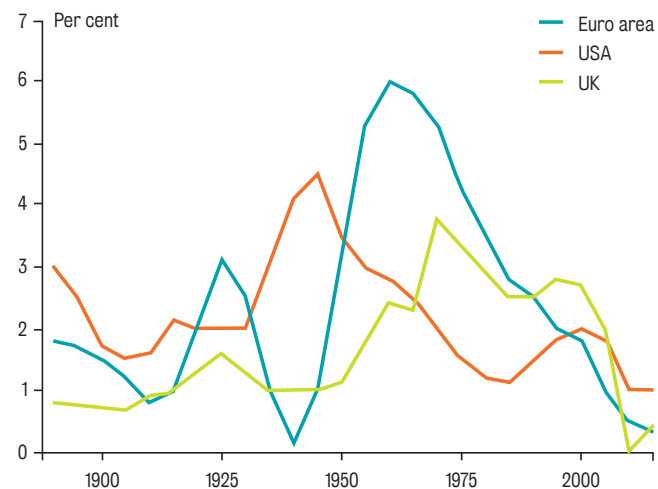


Fig D Labour productivity trends since 1890 Bergeaud et al (2016)

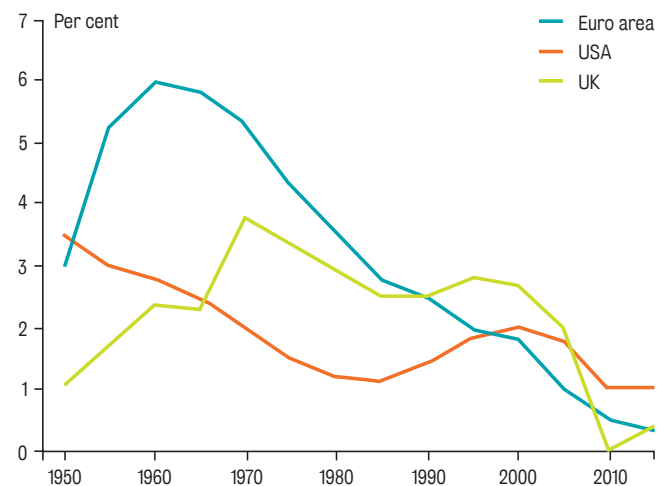


Fig E Labour productivity since 1950 Bergeaud et al (2016)

were registered as economies ruined by the War regained, and then surpassed, their pre-War prosperity. It is the period that the French refer to, with reason, as 'les trente glorieuses'. Figs D & E both show how the US economy went through a bleak period around 1980: this was when many US policy-makers and commentators were convinced Japan was going to destroy the US economy. Productivity growth then increased again, and fell after the 2008 financial crisis, though less than in the UK or Eurozone. During all that time, in terms of GDP per head, no country ever managed to catch America up unless it was an oil state. The US economy goes on being the most innovative in the world.

The Euro area, as you can see, is pretty volatile, and in the most recent period the merged data for all these countries hide some major differences between states, to which I'll return in a moment. And the UK had rather high productivity growth in the last quarter of the 20th century – something which has had rather little recognition in our political discourse. This continued until 2008, when it fell off a cliff.

We tend, in this country, to be convinced that everybody's productivity growth is always higher than ours. This simply isn't true, although it does follow a different pattern from that of the USA or mainland Western Europe. But the key point that Figs D & E make is that, at the moment, the developed world as a whole is experiencing a long decline in productivity growth. This starts to be obvious from the 1970s on – in other words, over the period in which university enrolments were not merely carrying on growing, but growing remarkably fast. And Fig F shows the same pattern, in more detail, for five large Western economies. It shows clearly that productivity is not growing fast anywhere

Western productivity
The advent of the productivity slump

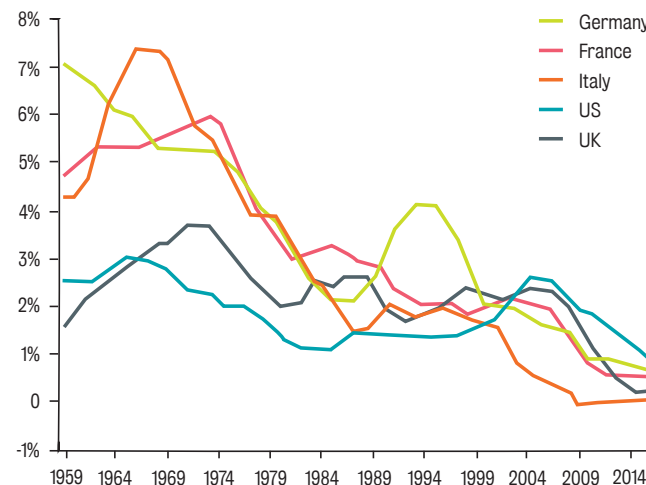


Fig F Labour productivity growth in selected Western economies 1959-2014
Conference Board

Total factor productivity growth and rises in college enrolments USA 1910-2010

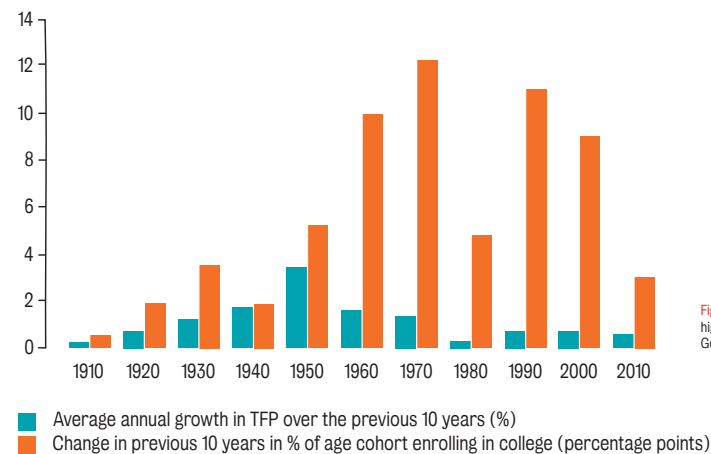


Fig G US productivity and higher education growth
Gordon (2016) and NCES

in the developed world. The places that are growing fast, globally, are the ones – most notably China – which are in full-scale catch-up.

So what does this tell us about this lecture's opening question? Are we, or more specifically are governments, right to think that expanding higher education is a good way to deliver growth? To answer this in a bit more detail, I have drawn on Robert Gordon's excellent, though depressing, book about the decline in new ideas in our societies. He argues that, compared to the amazing innovations and productivity growth at various other periods in quite recent industrial history, the period of the last forty years has been quite disappointing. There was a bit of an upward flip from the IT revolution and that has of course changed many things. Smartphones and the internet, for example, have certainly altered the way we behave to and connect with each other. But Gordon's argument, which some people dispute but for which he makes a strong case, is that if you compare the recent past with just a little further back, innovation has been slowing down.⁵

What I have done in Fig G is show both the average annual growth in total factor productivity (taking Gordon's figures) and the change in the percentage of the US population enrolling in college over successive ten-year periods. As you can see, there was, for example, very slow productivity growth between 1900 and 1910 and pretty slow growth between 2000 and 2010, and very fast growth between 1940 and 1950. And beside these figures is the change in the percentage in the American age cohort enrolling in college in that period. Although growth in the latter slowed a bit during the 1970's, and has slowed again in the last few years (partly because so many people were already enrolled,

so there was less room for expansion), what you can see are gigantic increases in the proportion of young Americans enrolling in college in the period after the Second World War. And in the period that they came into the labour force, total factor productivity growth was slowing.

For decades now, governments all over the world have placed enormous faith in the growth-generating powers of university expansion. On this evidence, one can only say that the link between student numbers and growth isn't terribly obvious.⁶

At the start of this lecture I also observed that, while governments have been highly preoccupied with the idea that higher education expansion is a sure-fire way of boosting economic growth, they have also come to regard it as their primary and most effective tool for equalising opportunity and increasing social mobility. Is the picture there clearer and more encouraging? Alas, not really.

The scholar whose work in this area I most admire is John Goldthorpe at Nuffield College Oxford. And what he suggests is that if you look at the whole post-War period, what is interesting is that people's relative chances of being socially mobile don't shift very much. In other words, there has been rather little underlying change in the extent to which 'class histories' – where you start and where you end up – are shaped by educational qualifications gained at an early age.⁷

Of course, the composition of the labour force has changed, and continues to do so. A generation that is born at the right time, when the labour force is being transformed in ways that increase the number and proportion of skilled and well-paid jobs, will have very different experiences and opportunities from its

⁵ Robert Gordon (2016) *The Rise and Fall of American Growth* Princeton University Press

⁶ More generally, across the world, there is no evidence of a positive correlation between rates of growth in per-capita income and rates of growth in education participation rates. A Wolf (2002) *Does Education Matter?* London, Penguin

⁷ For a comprehensive discussion of the argument and data, see Erzsébet Bukodi and John H Goldthorpe (2018) *Social Mobility and Education in Britain* Cambridge University Press

grandparents or great-grandparents. So if, for example, you were born into a European family of manual workers in the middle of the 20th century, you, your cousins and your contemporaries were quite likely to end up in 'white collar' and middle-class jobs. There were far more such jobs around than there had been even half a century earlier, and so the recent history of many families is of upwards occupational mobility.

But what Goldthorpe shows is that this is because the overall labour market changed. The relative chances of a working-class, middle-class, or upper-middle-class child have not shifted very much. The first group remains much less likely to end up in an elite upper-middle-class professional occupation than does the second; and the second group in turn is much less likely to end up in the most elite jobs than those who were born at the top.

When you look at relative educational attainment and access, rather than absolute numbers, the picture is one of stability. The extent to which more / less advantaged class origins and more / less measured cognitive ability determine class destinations – ie increase or decrease your chances of being in a certain class – has not changed much since the early post-War period. To repeat – it remains true that if you are born into an elite family, your chances of remaining in an elite family will remain hugely greater than the chances of someone born into a poor family reaching the elite. Those relativities have not shifted much, even though there have been large increases in the absolute proportions of all groups who attend university. And this is not a UK phenomenon. We are not an outlier. It is true throughout the developed world.

Fig H summarises a global success story. Back in the 1950s, exposure to primary and secondary as well as

Access to education and relative inequality 1950-2010

Years of schooling show reductions in inequality of access on all continents (Gini coefficients)

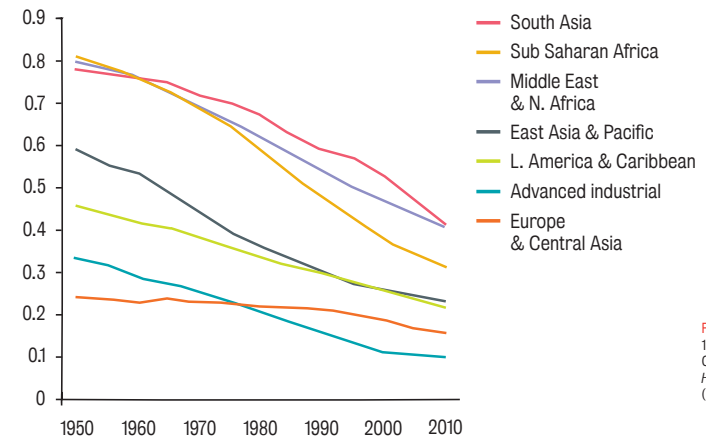


Fig H Access to education 1950-2010
Castelló-Climent & Doménech
Human Capital Gini Coefficients (2014)

Virtuous circle: skills

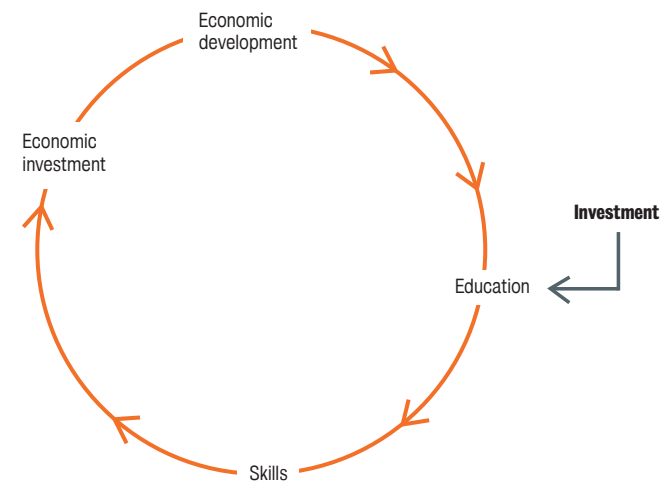


Fig I Education, skills and growth: a possible virtuous circle?

university education was very unequal. Now, on virtually every continent, it has become more equal. And in many ways this is wonderful – billions of people have access to the written word, to ideas, to their own history, as well as to what is happening today. And as the world's economy has grown – as it has, enormously – many of those people are doing office and factory jobs which require literacy and numeracy, rather than the backbreaking agricultural toil of their grandparents and parents.

And yet across the world, for the period 1960-2005, there has been no matching decline in income inequality.⁸ There is virtually no correlation at all between a country's level of inequality in human capital (access to education) and its level of income inequality, and there is no relationship between changes in educational inequality and changes in income inequality. And if we look more specifically at higher education and growth, at a global level we find no relationship between expanding student numbers and growth in GDP.

This all sounds really depressing – although if we were somewhat less preoccupied with education as essentially 'about' growing the economy, we might find it rather less disheartening. And I don't think anybody believes that education is actually making people *less* productive. But what these figures show is that there is no simple or automatic route from increasing the number of university places to greater productivity and faster growth. And equally, those politicians who regard university expansion as the obvious and guaranteed way to increase social mobility are deluding themselves. It just isn't true.

So the question is: why might this be? It seems entirely at odds with our view of how education 'works' for the

economy – and with the evidence that going to university is clearly associated with 'doing better' in life. In Fig 1 we can see the supposed 'virtuous circle' between education and skills and prosperity, in which governments believe. Why isn't it working?

What Fig 1 suggests is that if we educate people, they have skills, and that means they are more productive. This in turn means there is more economic investment coming in. Employers feel they can increase their investment, and these newly productive skilled workers will get more and more out of that investment. Therefore you get economic development and can afford yet more investment in education. And of course there is something to this: you cannot run a modern economy without highly skilled people. But if you get ahead of the nature of the labour market, what actually happens is something different.

2004 was peak period for the belief that expanding universities was the way to make everybody richer. The UK lifetime pay premium for obtaining a degree at that point, compared to someone who had not got anything beyond GCSE, was 41 per cent, using pay across the UK as a whole. But by 2017 – just 13 years later – it had reduced to 24 per cent.⁹

In the US, earnings for males between the 50th and 80th percentiles have stagnated in real terms (although the top 20 per cent have done very well).¹⁰ Because the gap between college graduates and high school drop-outs has widened – in other words, high school drop-outs have done even worse – college remains a 'high return' choice for the individual. But if wages are in any way related to productivity then why does nothing seem to be happening to absolute wages in a large part of the US labour market, even though more college-educated

⁸ Castelló-Climent & Domènech (2014) Op. cit.

⁹ ONS figure ons.gov.uk/peoplepopulationandcommunity/wellbeing/articles/humancapitalestimates/2004to2017

¹⁰ Richard V Reeves 2017 *Dream Hoarders: How the American Middle Class is Leaving Everyone Else in the Dust*. Brookings Institution Press

people are entering it, as we saw earlier [Fig G](#)? In other words, it's still super-rational to go to college if you're American, but from the point of view of the economy, it's not clear that the country is getting very much for its soaring expenditures on higher education.

The Institute of Fiscal Studies has, in recent years, been doing some extremely detailed analysis of returns to UK qualifications and degrees. And what it concludes is:

*'Graduates from almost all UK institutions earn more than those at the 20th percentile of the non-university earnings distribution.'*¹¹

Which, when you think about it, is not saying very much. Twenty per cent is one fifth up from the bottom, so graduates from almost all UK institutions earn more than those at the 20th percentile.

Or, put differently, many graduates are earning considerably less than most non-graduates.

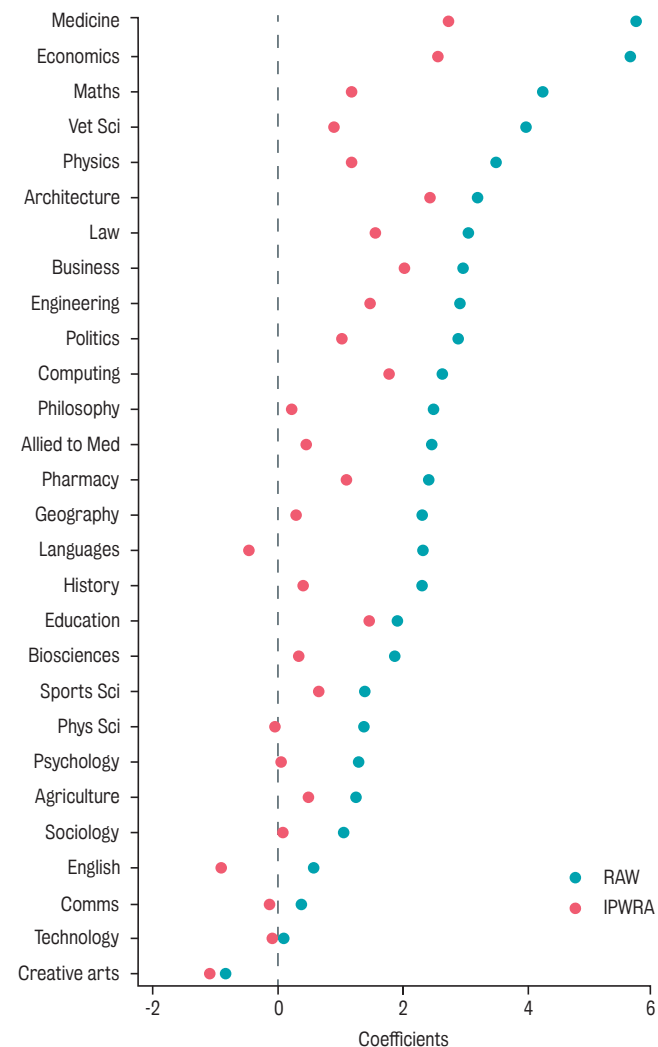
And what has become very obvious is that what graduates earn is strongly influenced not just by subject but also by the institution they attend. [Figs J & K](#) illustrate this, again using IFS figures¹². [Fig J](#) looks at average male earnings for graduates aged 29, grouped by degree type, compared to the non-graduate average, and [Fig K](#) does the same, but this time by institution attended.

These figures are available because we now have data sources that can link people's degrees, where they went and what they studied, to how much they were earning in their late twenties. Both figures use data for males because female earnings for graduates compared to non-graduates are much harder to interpret. A major problem is that many non-graduate women are working part-time by their late 20s, whereas very few graduate

¹¹ Britton J, Dearden L, Shephard N and Vignoles A, 2016. How English-domiciled graduate earnings vary with gender, institution attended, subject and socio-economic background. Institute of Fiscal Studies W16/06

¹² Belfield C, Britton J, Buscha F, Dearden L, Dickson M, van der Erve L, Sibietta L, Vignoles A, Walker I and Zhu Y (2018). The impact of undergraduate degrees on early-career earnings. Department for Education (Ref: RR808) and Institute for Fiscal Studies

HEI raw earnings and controlled estimates of returns by subject (men at age 29) IFS 2018



[Fig J](#) Graduate and non-graduate earnings compared by subject: males aged 29

women are, but the earnings data do not include data on hours worked.

In Figs J & K the blue dots show how much more on average people who go to university earn than people who don't, and the dotted line through zero shows the baseline non-graduate average which you're comparing it with. So in Fig J, the only group earning less than the non-graduate average are the creative arts graduates down in the bottom left corner. However the red dots are the more informative ones, because here the analysis is controlling for prior achievement. Here you are comparing people who went to university with people who had the same grades as them but didn't go to university post-A level; and the 'graduate premium' starts to look considerably less impressive. You see that you've got lots of red dots that are actually pretty close to, or underneath, that zero line which shows the non-graduate average. By contrast, maths, economics, physics, law and medicine degrees are highly rewarded.

Fig K shows comparable results by institution attended. Once again, blue dots are average 'raw' earnings gains at age 29 compared to the non-graduate average (the dotted line), and the red dots show the gain compared to what a university's graduates might have expected, given their prior attainment, if they had entered the labour market at age 18. The top two institutions are LSE and Oxford and the lowest one is the Liverpool Institute of Performing Arts. This last is hardly surprising: no-one chooses the performing arts as a way of getting rich. But two things here are very obvious. First, when you look at the red dots which are controlling for prior achievement, a large number of institutions are really pretty close to that zero line. Second, compared to Fig J, both the blue and red dots form much more of a clear

HEI raw earnings and controlled estimates of returns by institution (men at age 29) IFS 2018

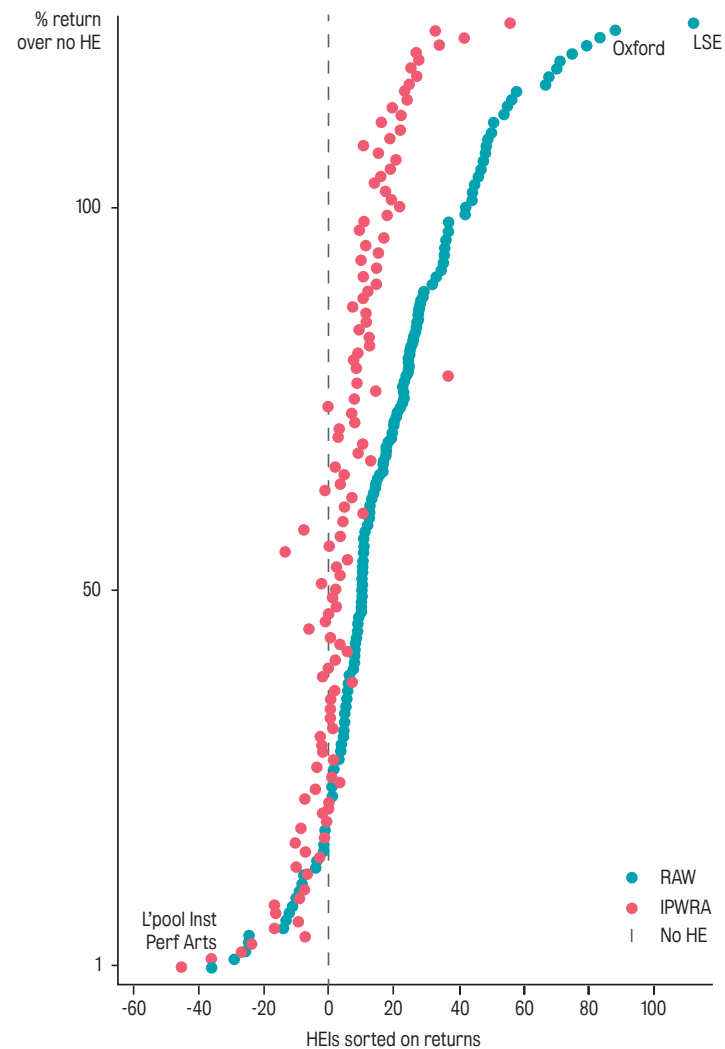


Fig K Graduate earnings compared by institution

curve – and one where not only do the ‘high-scoring’ institutions on the right have higher red and higher blue averages. They also add a lot more at the top – the gaps between the two are bigger.

In other words, the institution that you go to makes a huge difference to the likelihood that you will do well in life. This is not something that surprises any of my students. I regularly ask them: Why do you come to King’s? Do you think our teaching is fabulous? If they’re being honest they say they hope the teaching will be fabulous, and they do know and care that we have great researchers. But also, and fundamentally, they care that we are a highly ranked and recognised ‘name’.

Overall, these two figures tell us some pretty depressing things. They tell us that we have a labour market that is not hungry for 50 per cent of the population to be graduates: something which job analyses also confirm, finding consistently that about a third of all graduates are in ‘non-graduate’ jobs¹³. And they also tell us that, in this job market, and in the world of higher education, we have a story not just of skills and learning but also, very much, of signals.

In a world where we are sending so many people to university, there is, we hope, a lot of effective teaching and learning going on. But we must also accept that the institution that someone attends also sends a strong signal to the labour market of whether they are more or less intelligent, more or less diligent, more or less on top of the way the world works. And this is essentially a relative matter – it’s not about absolute outcomes, how much anyone learns in absolute terms. It is relative and, as Fig K shows, not all shall have prizes.

Of course, university was traditionally a way into certain parts of the elite, including the very top

governmental and professional positions (though not, for a long time, the top of business). But as Fig L shows, in the past, there was still a very large part of the labour market where there was no need for a degree.

Today we have, instead, a very clear hierarchy of universities. Fig M If you want to have a good chance of getting a really top job, you need to go to a ‘top’ institution. Less highly recognised institutions offer pathways into a somewhat less prestigious part of the labour market. And the part of the labour market which requires no degree – the blue section in both figures – goes on shrinking. Because once you have a very large proportion of the population attending university, there is enormous pressure on everybody else. You start to have a lot of occupations that become graduate-only: ‘Don’t bother to apply if you don’t have a degree’; ‘If you want to get on a shortlist you must have a degree’; ‘Degree only, no non-graduates.’ We’re not quite there yet in the UK – but South Korea pretty much is. And people no longer feel ‘going to university will guarantee me a great job’ but instead, and quite realistically, that ‘not going to university would be the most high-risk thing I could do’.

Is this good economic policy? I’ve argued that it is not. Is it good social policy? That is also highly questionable. Higher education expansion has failed to shift relative life chances, as I discussed above. And this is, to repeat, a general experience, not just a UK failure. Is a system which increasingly decides young people’s futures on the basis of whether they get into the ‘right’ university at 18, rather than the ‘wrong’ one, the best we can do, especially given the huge amounts of money involved?

Our current systems of higher education are a global phenomenon. Are they stable? In the short term, yes.

¹³ Green F and Henseke G, 2016. Should governments of OECD countries worry about graduate underemployment? Oxford Review of Economic Policy, Volume 32, Number 4, 514-537

1900

Universities' traditional position: the tip of a highly selective pyramid

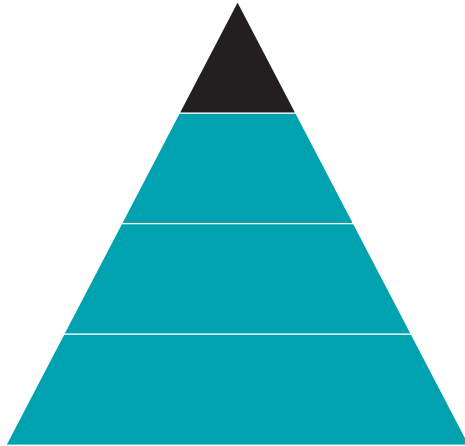


Fig L Universities in the labour market in the period before mass higher education

2010

A clearly differentiated hierarchy of tertiary institutions

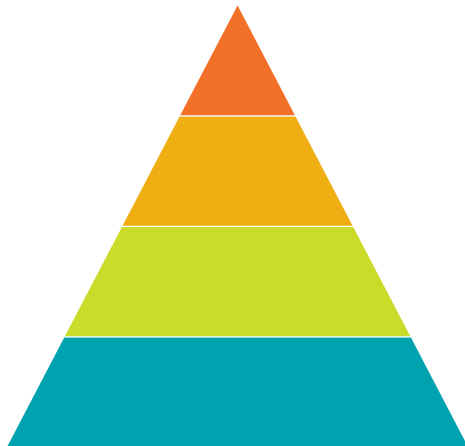


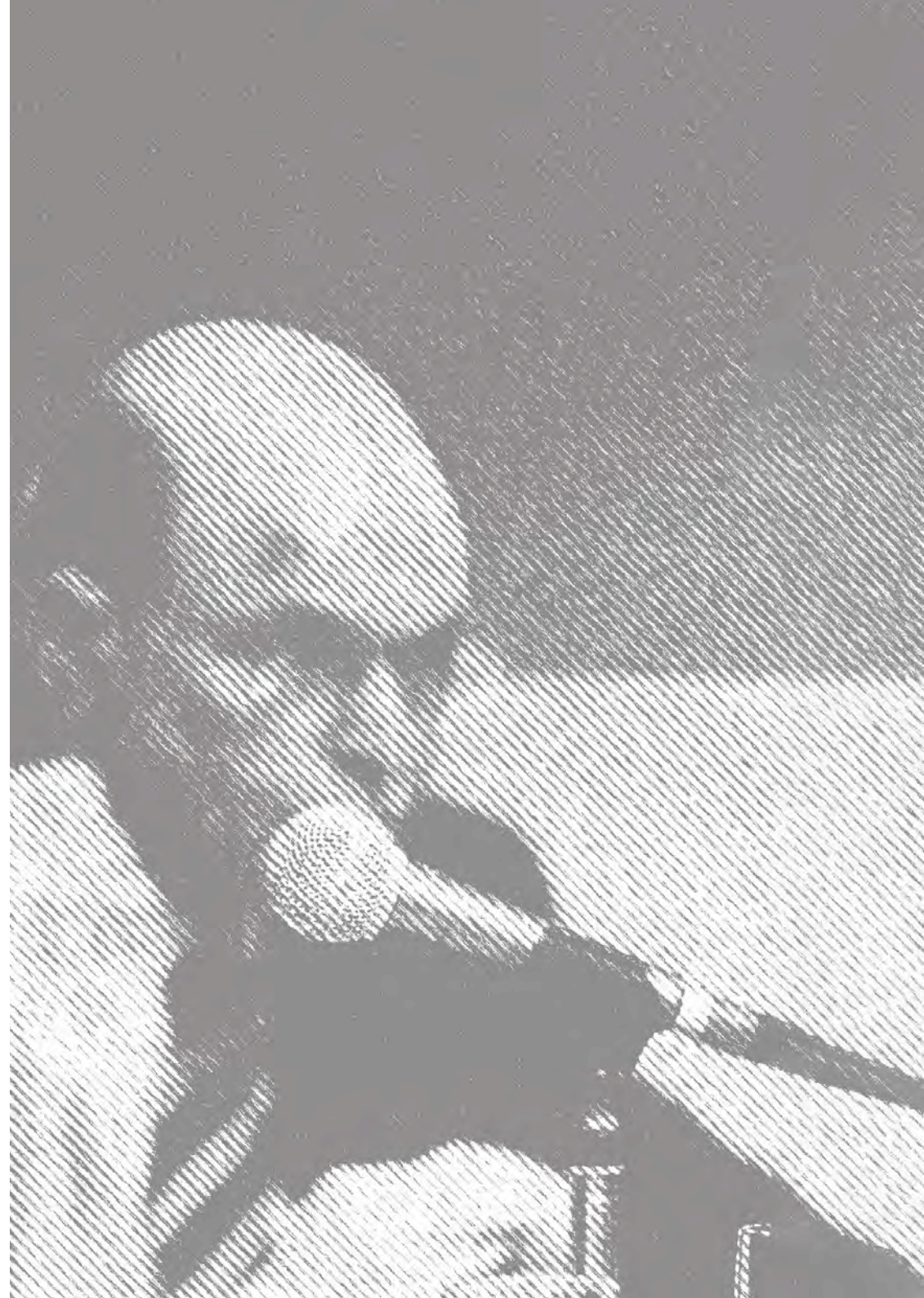
Fig M A hierarchy of universities and a shrinking non-graduate sector

Are they fair? No, certainly not. And are they good at producing the core benefits of universities – learning and new knowledge? The answer here is yes, up to a point, but with major storm clouds looming. It is not just that the vast expansion of the sector has led, in many countries, to the development of institutions where students get little teaching and where the standard of attainment for a degree is well below that of traditional higher education. It is also that contemporary higher education is hugely expensive. The great research universities which I discussed in my second lecture are the product of 150 years of generous funding: and here in the UK, our institutions have recently enjoyed a period of unprecedented financial support. But finance ministers, and politicians generally, are increasingly aware both that they are not getting as much economic bang for their buck as they had hoped for, and that individual voters continue to be very keen that their children should have access to degrees. Finance ministers under strain are not renowned for sophisticated policy-making. So the biggest threat to the quality of education in our world is not that universities will be closed down, but that they will become more hierarchical, more underfunded in most cases, and therefore less just, less fair and less productive than they are today.



PROFESSOR THE BARONESS WOLF OF DULWICH CBE

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