

THIRD LEVEL EDUCATION: LEVELLING THE PLAYING FIELD?

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In this essay Keelan Beirne explores the challenges faced in providing higher-level education in universities which are of the highest possible standard while also remain accessible. He discusses how the provision of education can exacerbate inequality if policy makers do not exercise caution. Analysing the role of the market and the state in higher-level education provision, he concludes that there need not be a trade-off between efficiency and equity, and that a balance can be struck to achieve these goals in tandem.

Introduction

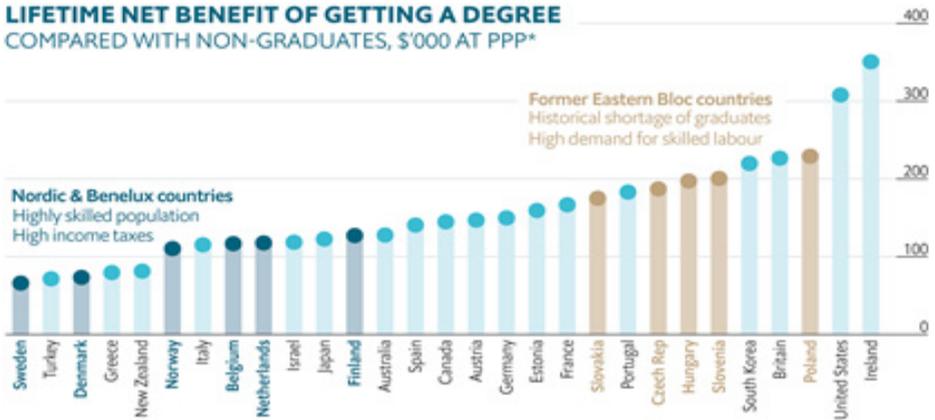
“Education is the most powerful weapon which you can use to change the world”

-Nelson Mandela

That education is a good thing is a fact few would dispute. This paper, however, seeks to address the possibility that recent trends in education might also be having negative effect on society. It seems at present that tertiary education in particular is more a force behind the divergence of incomes rather than an egalitarian force. Education may in fact be becoming the facilitator of the inequality Nelson Mandela fought to change. Since the 1980's incomes have been steadily diverging, due to a number of factors, as Piketty explains in his acclaimed book “Capital in the Twenty-First Century”. Education's effect on income inequality is significant, and has been exacerbated by the technological shift of this period. Increased automation, improved information systems and increased integration and globalisation have increased the importance of cognitive ability, reducing demand for low skilled blue collar jobs, and thus increased the premium for third level education, especially university qualifications.

There is, however, potential to reverse this effect and turn education into a convergent force, reducing inequality and improving social mobility. More widespread, and perhaps universal, tertiary education would add to both efficiency in terms of worker productivity, innovation and effective screening, while also helping to equalise opportunities between classes. In terms of both efficiency and equity, it may be preferable to provide universal access to tertiary education, which will equalise opportunities, while preserving the certain level of inequality needed to ensure incentives remain.

LIFETIME NET BENEFIT OF GETTING A DEGREE COMPARED WITH NON-GRADUATES, \$'000 AT PPP*



Sources: OECD, 2014 (for the year 2010) *Purchasing power parity

Will it pay off? Education and Wages

The trends in recent years have made tertiary education increasingly important in terms of wage inequality, especially in Ireland. The wage premium, or the increase in future wages given by a third level qualification has steadily increased in most countries, especially in terms of university level qualifications. This trend is particularly pronounced in the case of Ireland. Ireland gives the largest payoff for a university degree in the OECD, even given the widespread availability of such qualifications (Tozer, 2017). This is despite the fact that 52% of 19-24 year old in Ireland have attained tertiary level education, and the overall attainment rate has increased from 29% in 2005 to 43% in 2015, implying the supply of graduates has steadily risen in recent times. In simple supply and demand logic, this increase in the price of skilled labour alongside a rising supply implies a surge in demand for high skill workers (OECD, 2016a). This shows the importance of taking education into consideration when discussing inequality in Ireland, and also the fact that changes in labour market dynamics, shifting jobs into high skill sectors, can greatly outweigh any increase in the supply of such skills. This trend is evident in labour markets throughout the OECD, as traditional blue collar low skill jobs have dwindled, and demand for high skill jobs requiring third level education has increased.

Education and Inequality

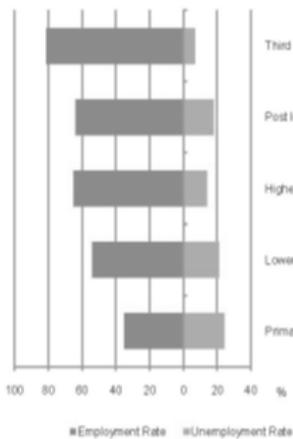
The demand for middle income jobs in rich world economies seem to be eroding, due to technological shifts. However demand for low skill jobs that must be done by humans and cannot be done by machines or computers have risen, producing a “U” shaped curve of job growth across income levels, with high growth at the top and bottom, and a fall in the middle. This causes increased polarisation in income levels and increased wage inequality (Lindley and Machin, 2013). Ireland’s economy, characterised by industries which demand high skill graduates such as pharmaceuticals, finance, aircraft leasing and

IT, is particularly susceptible to this phenomenon. Even given our high levels of third level education attainment, inequality is on the rise. In terms of the gini coefficient, the OECD's raw measure of income inequality, Ireland's inequality fluctuated greatly in the crisis years, before settling on a trend on stable but gradual increases since 2010. In 2012, Ireland's Gini coefficient was .325 (OECD 2016b), however, the share of income going to the top one percent has risen in recent times, from less than 7% in 1990 to over 10% in 2007 (OECD 2016b). Despite Ireland's relatively egalitarian Gini coefficient, the trend is worrying, especially in the context of rising inequality in other rich world countries. Educational attainment is also at risk of becoming polarized. This is shown in the wide variation of third level progressions in areas of Dublin, only a few miles apart. The percentage of students moving on to third level from schools in wealthy areas is much higher than the rate in more disadvantaged ones. In 2014, the rate for Dublin 4 is 84%, in Dublin 6 it is 99%, while in Dublin 17 it is just 15%, and was 16% in Dublin 10 (Humphreys, 2014). The disparities in progression rates reflect the role parents' income and social background plays in educational enrolment, and thus attainment. The role of parental income in the next generation's education, and thus income, shows that these rising trends will only compound each other over time, if left unchecked.

Equity versus Efficiency?

This leads us to consider the question of what the economic implications of this rising

Figure 1: Employment rate and unemployment rate for those aged 25-64 classified by highest level of education attained, April-June 2011



inequality in terms of efficiency are, and whether they are necessarily a bad thing. It might seem that we are witnessing the classic trade-off between efficiency and equity, famously described by the American economist Arthur Okun. However, this essay argues that that is not the case. The broader effects of education on the economy, and especially the effects of the concentration of education in the hand of a fortunate few, must be viewed in a macro perspective to be fully understood. While the benefits of education should not need to be emphasised, their fundamental value in terms of efficiency is often not understood. Third level education gives three main benefits in terms of economic efficiency. Firstly, it increases worker productivity for those who attain it. Secondly, it raises the chances of innovation which increases society's

productivity and welfare, not just for those who are directly involved. Finally, third level education acts as a screen or signal for employers, allowing them to determine the best and most able employees in a relatively non-biased manner, boosting efficiency.

While many view this screening effect, which was highlighted by Joseph Stiglitz and Michael Spence in their work on information asymmetry, as a negative aspect hampering efficiency, this is not necessarily the case. Using education as a market signal to employers is in fact arguably an aid to efficiency, as it allows capable workers to move into roles which maximise the use of their abilities, and helps employers make efficient use of the labour they employ. Issues do arise with third level education being used as a market signal, but they are avoidable. The first issue is whether or not third level education is an accurate signal of ability. If it is only accessible to a fortunate minority, it is more likely to be a signal of background and wealth, than one of cognitive ability. However, if education is universally accessible, giving students from all backgrounds as equitable opportunities as is possible, education is quite an effective signal, reflecting work ethic, memory and other cognitive skills so important in the modern economy. Even if it is exclusive, third level education is still probably preferable to other market signals, such as credit ratings, work history, family background etc., which may be even more exclusive to privilege. However, even given its place as an effective signal to employers, third level education is extraordinarily expensive to be only of value as a market signal. Luckily, it also brings many other benefits, which I have already mentioned, although the scale of these benefits is often questionable.

In terms of boosting productivity, the role of third level education is intuitive, but difficult to measure. One would expect the premiums being paid for third level graduates to reflect an increased productivity. However this increased productivity may be due to the fact that graduates have been screened from the workforce, highlighting their increased productivity, present even without third level education. If one looks closely, however, one notices a rise in premiums for highly technical qualifications, such as engineering, computer science and mathematics (The Economist, 2015). While graduates from these areas are likely to be very talented, it is difficult to imagine these people having the same skills in their field without third level education. This implies that education does fulfil its basic purpose, providing people with knowledge and skills, thus increasing productivity. An expansion of accessibility would improve productivity and thus the value of overall human capital in the economy, increasing output. If we accept that third level education does boost individual workers' productivity, it makes sense to give all people an opportunity to access it and boost their own abilities, thus improving society's overall productivity.

The third and most apparent benefit of third level education, in particular university education, is its contribution to technology and innovation. Research universities, which have their roots in Germany but have been championed by the American system, have played a huge role in many of the technological innovations of modern history. This role is of increasing importance. As technology progresses and becomes more advanced, an increasing amount of detailed and in-depth research and knowledge is required to push the boundaries of technology. These expertise are

usually best provided by universities, which have the skills and resources to innovate on the boundaries of technology. This occurs both in terms of universities giving people the knowledge they need to innovate, and also research institutions making their own breakthroughs. As inventions are often improvements of other inventions, the more innovation that takes place, the more innovation is inspired, creating something not dissimilar to a multiplier effect. One only needs to view the rapid growth of information technology in recent times to see this in action. The role of universities in economic growth is often understated. They have provided us with countless technological innovations that would be difficult to imagine being absent in the modern economy, from polio vaccines to jet engine. Because innovation is dependent on existing technology we observe a multiplier effect from increased third level education. In terms of the Solow model, it would cause a sustained increase in the total factor of production, and thus sustainably raise living standards. At its fundamental level, giving everyone access to third level education would in turn give access to the knowledge necessary for innovation, and thus help to maximise innovation.

Universal Access

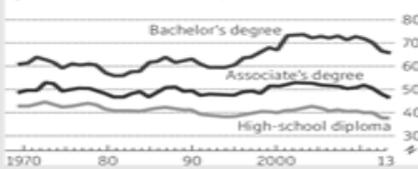
The equalising and convergent potential of third level education is substantial. While education cannot and should not cause equal outcomes, it can provide an increased equality of opportunity for all people, independent of social class or background. Universal accessibility to third level education could help to increase equity while not only avoiding a loss of efficiency, but actually improving efficiency. Access to tertiary education for all social groups provides an increased equality of opportunity among young people and helps to minimise the role of wealth and background. At present, higher education tends to disproportionately benefit higher income groups, meaning the college wage premium exaggerates inequality and leads to inefficiencies. There is no economic reason to only provide certain levels of education to those who can pay for it, or whose family can. If sufficient funding can be provided, a wider access to education could improve both equity and efficiency. As the graduate wage premium rises, and tertiary educational continues to disproportionately benefit the more wealthy, inequality will tend to rise. Added to this, globalisation will only serve to increase inequality, as multinational firms will demand more and more skilled workers. This theory is highlighted by Eric Maskin, who advocates increasing the numbers educated, and thus skilled, which will reduce this inequality (Kremer, Maskin, 2014). As Ireland's highly open economy is a huge benefactor of FDI, which tends to demand high skilled labour, this is particularly relevant. With a large and rising demand for skilled labour in Ireland's "knowledge economy", it makes sense to meet this demand, and boost equity by easing access to tertiary access.

However, a magic wand cannot simply be waved to provide universal access, and preserve efficiency. Tertiary education is not a homogenous product; its quality is affected

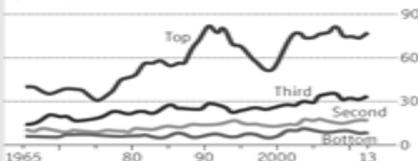
by the market. However, while the market alone does not provide an ideal product, nor does the state. The European model, in which the state provides free fees for tertiary education, provides a more equitable service, but reduces funding for research and innovation. The American model, which is based on private institutions charging fees to students, has produced the world's leading research institutions, while failing to provide equal access to all income groups. Another huge issue is the challenge to keep conditions for both institutions and students competitive, to maximise gains to productivity, and to ensure universities don't just provide signals to employers. This is an issue both models face. In the US, studies have shown that employers principally filter applicants by the school they attended. This reduces the incentives for students to obtain good grades, and thus reduces the incentives for learning. Similarly, lectures have much more incentive to research rather than teach, and thus learning becomes neglected. This does not help to reduce fees or make top universities more accessible, as their exclusivity is what gives them their value. This means that top schools are incentivised to keep admissions low and fees high, a double blow to accessibility (The Economist, 2015). The fact that top schools are populated by a majority of wealthy students adds to the lack of equity in the American system. This system, however, has its virtues. American institutions consistently dominate the top 100 University rankings, and are among the world's leading research institutions. The top American universities have moved to the cutting edge of research, providing innovation and technological progress to society, which drives growth and improves living standards. This role of universities in sustainable growth and innovation should not be understated. There is therefore a need to preserve both efficiency in teaching and in research, while expanding access to third level education.

Need to know

United States:
average annual pay
by educational level, 2013 prices, \$'000



% of graduates at age 24
By family income quartile

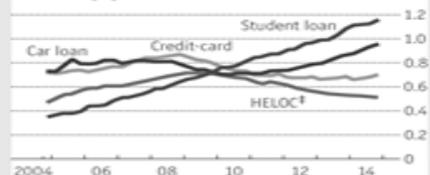


Sources: Federal Reserve Bank of New York/Equifax;
OECD; Pell Institute; US Census Bureau

average numeracy score*
25-34-year-olds with tertiary education, 2012



non-mortgage debt, \$trn



* Range: 0-500 †England & N. Ireland
†Home equity line of credit

Conclusion

The focus of policymakers should be to provide universal access and opportunity, as opposed to free fees, while using incentives to boost the importance of grades and thus learning, all the while maintaining proper funding and competitiveness in terms of research. These goals are not necessarily contradictory, nor are they unachievable. If access to all institutions can be eased no matter their rating, this will create a more level playing field, which will result in graduates being screened by their academic ability, firstly, to get into the institution in a fair competition. Thus, wider access and an income-neutral selection process could also add to incentives to educate for both students and institutions, and thus raise productivity. In terms of research, maintaining the independence of institutions, while also maintaining their funding, would provide a suitable environment for innovation. Perhaps the main challenge to this is to acknowledge the role and importance of academic research in the economy and living standards, both by the government and society at large.

These three goals can be realised in tandem, provided we realise the importance of tertiary education in economic and social progress. The answer lies neither with the market nor with state provision, but with sensible policies to regulate and manipulate the market, in order to produce an optimal outcome. Mr Mandela was certainly correct, education is a weapon which can change the world. The nature of this change, however, is determined by how we use it.

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Charts:

1. Lifetime net benefit of getting a degree, Tozer, J. 2017, Higher Earning, The Economist.
2. Employment and unemployment rates for those aged 19-24 classified by highest level of education attained. Quarterly National Household Survey, Educational Attainment Thematic Report 2011. Central statistics office.
3. Need to know, various charts. The Economist. 2015, A Flagging Model. The Economist.