

The Association
of Commonwealth
Universities

Bulletin

No 189 November 2016

Attracting the best talent

Understanding the next generation

Creating a culture of enterprise

Investing in the future



Investing in the future: higher education and the rate of return

How is the rate of return to investment calculated for higher education, and to what extent does it vary internationally and over time? **Harry A Patrinos** discusses.

High economic returns to higher education signal that university is a good investment – especially for the student and his or her family. Added to that are its social benefits – one can argue that higher education has social returns as well. Financing higher education, however, requires a sustainable financial model, which in most countries entails smart cost recovery (via, for example, income-contingent student finance) and targeted support – which means guidance and information, not just money – for those particularly disadvantaged.

How do we know that higher education might be a justified expenditure on the part of students, their families, and society? Typically, we rely on a cost-benefit analysis that gives us an estimate of the rate of return to investment in higher education. This rate of return equals the value of a graduate's lifetime earnings to the net present value of the costs of education. An economically justified investment has a positive rate of return that is higher than the alternative. For the prospective student, assessing costs and benefits means investing until the rate of return exceeds the private discount rate (the cost of borrowing and an allowance for risk). The costs are the student's forgone earnings while studying, plus any fees or incidental expenses incurred while

attending classes. The benefits amount to how much extra money a graduate earns compared to someone with less education. In the case of higher education, the comparison is made with secondary school leavers.

The social rate of return considers society's spending on higher education on the cost side – for example, money spent on renting buildings and professorial salaries – and the benefits to society beyond wages. Ideally, the social benefits should include the non-monetary benefits of education, such as improved health and nutrition practices and intergenerational wellbeing. Given the scant empirical evidence on the social benefits, however, estimates of the social rate of return are typically based on observable monetary costs and labour market earnings.

Recent estimates

Attempts to estimate the economic rate of return to investment in education stretch back over half a century. Yet, it is only relatively recently that we have had such estimates for the vast majority of countries and regions. Our latest estimates of comparable private returns to schooling cover 140 economies, and show significant wage increases associated with investment in schooling. The global average private rate of return to schooling is 10% per year of schooling. The returns are highest in

sub-Saharan Africa, and are globally higher for women than for men.

The private returns to investment in higher education are now higher than the returns to primary schooling. While returns to primary schooling are just above 10% and returns to secondary schooling are 7%, the private rate of return to higher education is 15%. It is highest in sub-Saharan Africa at 21%, and ranges between 10% (Europe and central Asia) and 17% (south Asia) across the rest of the world.

In high income countries, the economic returns to higher education range from 6% in Estonia to 15% in Portugal. In the five largest European economies – France, Germany, Italy, Spain, and the UK – returns range from a high of 14% in Germany to a low of 7% in Italy. The UK is exactly at the EU average of 11%. All estimates of higher education returns are higher than the alternative. For example, returns to higher education are higher than returns to investments such as housing, treasury bills, and government bonds.

How have the returns changed over time?

Over the past two decades, there has been a tremendous increase in the number of university students and graduates worldwide. Other things being equal, this should have led to a decrease in the rate of return to investment

– as would happen if supply outpaced demand. However, while the rate of enrolment in higher education has grown significantly over time (Figure 1), the returns have remained high over the same period (Figure 2). This suggests that global demand for skills has kept the economic returns to education high. It is thus safe to say that education is a good investment globally, even considering only private monetary gain.

As Figure 2 shows, the returns to investment in higher education have remained remarkably stable over a long period of time. Between 1970 and 2010, they went from 16% to 15%. In between, they ranged from a high of 17% to a low of 14%, but never fell below this. There is variation between and within countries, and by discipline, faculty and school, of course. But overall, the returns are very stable.

Returns to higher education may also vary over time within countries, but usually not very much. A few country examples – those for which we have comparable estimates over a relatively long period of time – are instructive. Looking at the Americas, for example, the returns in Argentina did not change very much between 1992 and 2012 – from 13% to 12% – and ranged between 10% and 17% in that time (which included two significant economic downturns). During the same period, the returns changed from 17% to 14% in Bolivia, and from 20% to 17% in Brazil. In Mexico, they were 21% in 1992, and remained at that level in 2012, with little fluctuation in-between. There was practically no change at all in Canada.

Yet, there are episodes of change. In the Americas, the returns went up from the 1990s to the early 2000s, then declined slightly, before ending up just about where they were two decades before. In Australia, the returns went up over the course of the 2000s, from 12% in 2001 to 15% in 2010. A more significant increase has been seen in India since the 1980s, with returns increasing from 11% in 1983 to 21% by 2009, coinciding with rapid economic growth and the opening of the economy. However, perhaps no other country has seen such an impressive rise as South Africa. In 2000, the returns to higher education in South Africa were already high at 29%. They stayed high through the decade, only to rise to 36% in 2009, and then again to 40% in 2011. This is an unusual increase and a sustained high level.



© dewdle/Shutterstock

In each country, the returns fluctuate due to intertemporal changes in the economy and changes in prices. In most places, however, they have remained quite stable and tend to vacillate within a narrow range.

What are the implications?

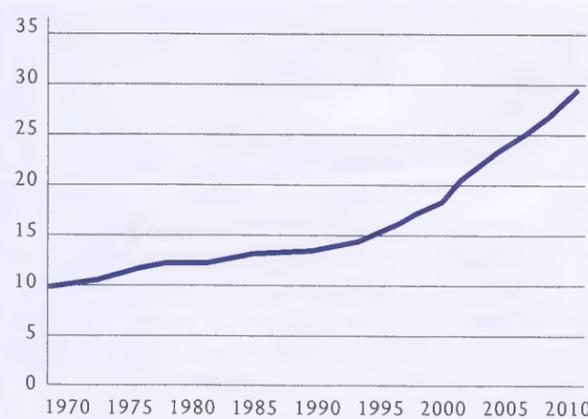
For the individual and his or her family, the good news is that the returns to investment in higher education remain high. Higher education is likely to be a good investment for people to consider. But decisions on investing should be based on full information about the costs and benefits for each individual student, as well as full information on the course of

study. Enrolling in higher education will not lead to higher earnings if the student is in the wrong school, faculty, or discipline for someone of their particular interests and capabilities.

For society, better-educated citizens and workers are more productive and impart social benefits. However, before committing to increases in funding, governments would be wise to plant incentives for the efficient and equitable use of funds. This might mean fees near the social cost of higher education – i.e. charging students the full cost of their education. If opportunities are expanded so that more students can enter higher education, more student finance options will need to be provided. Given the experience with traditional student loans, options to tap future earnings (such as income-contingent loans and human capital contracts) might be considered. ■

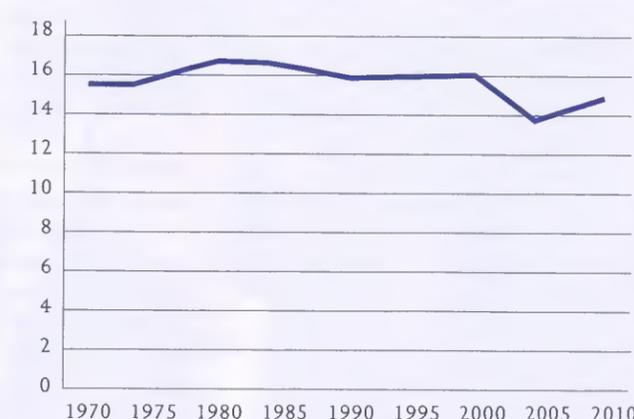
While the rate of enrolment in higher education has grown significantly over time, global demand for skills has kept the economic returns to education high.

Harry A Patrinos is Practice Manager, Education, at the World Bank.



Source: World Bank EdStats; Montenegro; Patrinos (2014)

Figure 1: Gross enrolment ratio, higher education, global (%)



Source: Psacharopoulos; Patrinos (2004)

Figure 2: Returns to investment in higher education, global (%)