

For sustainable funding and fees, the undergraduate system in South Africa must be restructured

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South Africa has the most diverse and differentiated higher education system in Africa – despite some persistent attempts at academic drift and mimetic normative isomorphism. Globally, in the 2008 country system ranking by the Shanghai JiaoTong Academic Ranking of World Universities, the South African higher education system was placed in the range between 27 and 33 along with the Czech Republic, Hong Kong, New Zealand and Ireland. It is well known that South Africa consistently has four of the five African universities that appear in the Shanghai top 500.

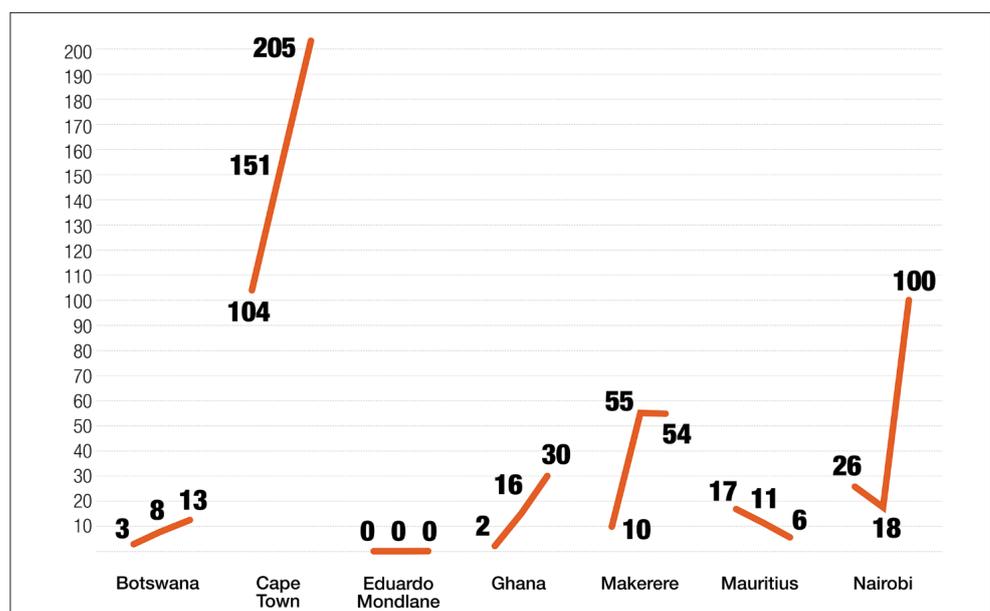
Even more impressive is that The Times Higher Education 2016 ranking of BRICS and emerging economies¹ places three South African universities in the top 12: the University of Cape Town (UCT) 4th, the University of the Witwatersrand 6th and Stellenbosch University 11th. Brazil and Russia each have only *one* university in the top 12, and India, with a billion people, has none. China, with their differentiation policy aimed at producing 30 world-class universities, has six in the top 12.

In the Higher Education Research and Advocacy Network in Africa research programme, which consists of seven African flagship universities, UCT, the only South African university, published 2390 articles in 2014 journals that are listed in the Web of Science with the other six universities combined publishing only 1476. Similarly, in terms of doctoral production, UCT produced 205 graduates in 2013/2014, while the other six universities combined produced only 207 (Figure 1).

However, it is not only in terms of growth that South African universities have excelled in relation to those in the rest of Africa. There have also been considerable efficiency increases. Figure 2 shows that while the number of academic staff increased by 26%, publication output increased by 150%. The doctoral supervision load increased from 4600 academics supervising 5100 students in 1996 to 6700 academics supervising 13 900 students in 2012. In addition, in terms of years to graduate, South Africa did not perform as well as countries such as Norway, the USA and the United Kingdom, which have large proportions of full-time doctoral students. However, in terms of part-time students, South Africa was comparable to the United Kingdom.²

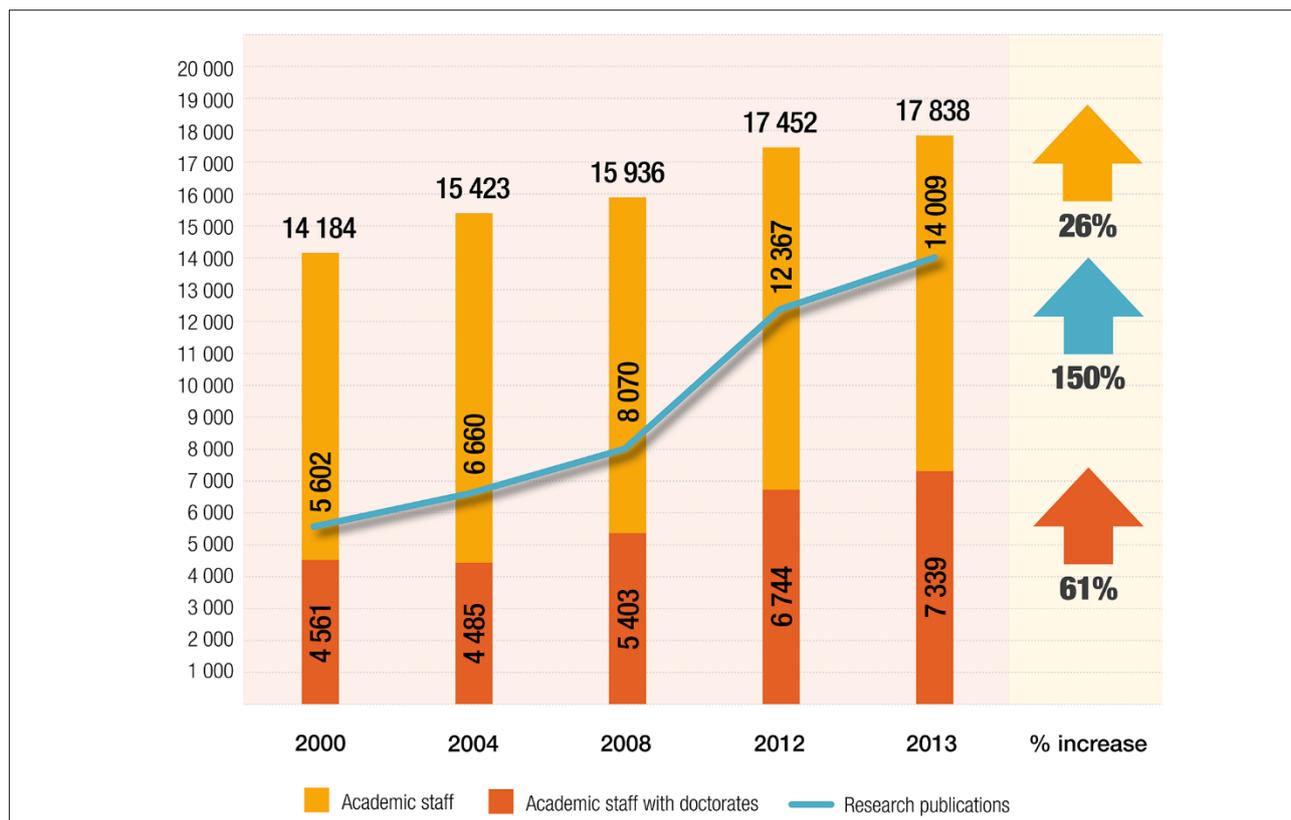
In a book on the doctorate in South Africa, Cloete et al argue that the model of doctoral education requires a radical change that would include moving from 40% full-time students to over 60%, different types of doctoral programmes and full-time students being employed as ‘pre-docs’, similar to post-doctoral students.²

One of the most vocal criticisms against the South African higher education system at the postgraduate (doctoral) level has been the charge of a lack of transformation.³ The term ‘transformation’ has become so ideologised that it has little research or policy value. Perhaps one of the most inappropriate ways to use transformation is as a static concept; for example, to demand that universities must reflect, 20 years after apartheid, the demographics of the current population.⁴ What we should learn from this charge of a lack of transformation at postgraduate level is that bad policies have long-lasting consequences and cannot be redressed or wished away in a decade or two.



Source: Centre for Higher Education Trust/Higher Education Research and Advocacy Network in Africa data (2015)

Figure 1: Doctoral graduates at seven African universities (2001, 2009, 2014).



Source: Department of Higher Education and Training's Higher Education Management Information System data for 2013. Compiled by Charles Sheppard.

Figure 2: Academic staff and research output at South Africa universities (2000–2013).

However, if transformation is understood as an indicator of change, then South African higher education has undergone seismic changes. Regarding the composition of the entire student body – a largely undergraduate population – Cooper and Subotzky⁵ declared that South Africa had experienced a ‘revolution’ and, by 2013, 74% of all higher education students were black.⁶

Some of the most substantial changes happened at the doctoral level. African doctoral graduates increased from 58 in 1996 to 821 in 2012, an increase of 706% in the post-1996 period. By contrast, white graduate numbers only grew by 71% (from 587 to 816). Over the same period, the proportion of African doctoral graduates increased from 8% to 44%, and in 2012, the number of African graduates exceeded those of whites. African female graduates, starting from a very low base of 10 in 1996, increased by 960% graduates to 106 in 2012, while African male graduates increased by 356%. By contrast, the number of white male graduates remained more or less constant – around 367 between 1996 and 2012. White female graduates increased from 219 in 1996 to 449 in 2012 (105%). If transformation is counted as improvement in percentage change, then Africans (and especially female Africans) have attained spectacular gains, particularly if contrasted to white males. We have not found another international example with such demographic changes in a national higher education system over such a short period (16 years).²

And, it should not be forgotten that from 2016, one of the world's largest science projects, the Square Kilometre Array – an international effort to build the world's largest radio telescope, with a square kilometre (one million square metres) of collecting area – will be led by scientists affiliated to South African universities.

One of the factors that sets UCT apart from the other African flagship universities mentioned above is that these flagship universities do not charge fees – they are all part of country systems in which public universities are free and those in private (no research undertaken) are not.

A very inefficient undergraduate system

The ‘best’ system described above is based mainly on the postgraduate system, which in South Africa is about 16% of the total higher education system,⁷ while at certain universities, such as UCT, it is over 30%. In the rest of Africa, the postgraduate systems comprise less than 5% of the total higher education system.²

A detailed analysis of the 2000 and 2006 cohorts shows that the proportion of intake into contact institutions of students who are sufficiently prepared to complete undergraduate curricula within the intended time, is small: only 27%, or roughly only one in every four. Performance is very poor for all groups across the three qualification types (diplomas, 3-year and 4-year degrees) with only 48% in contact universities graduating within 5 years. It is estimated that 45% will never graduate. For distance education, the figures for the University of South Africa are simply horrendous. Only 6% of students graduate within 5 years and it is estimated that 78% will never graduate. By the end of the regulation time for all three qualification types, more students have been lost to failure and dropout than have graduated – more than twice as many in the case of African students and those in diploma courses.⁸

Another method of assessing inefficiency is analysing the total number of undergraduate students entering and exiting the public university system on an annual basis. The Higher Education Management Information System (HEMIS) data show that total undergraduate enrolments in South Africa's public universities grew by 194 000 in 2013 compared to 2006, with less than 10% of the growth among first-time-entering undergraduates. The average annual growth rate for first-time-entering undergraduates between 2006 and 2013 was only 1.7%, compared to an average annual growth rate of 4.7% for the category of undergraduate students who had previously been in the university system. Undergraduate students in South Africa have high dropout and low graduation rates, which result in them remaining registered for long periods, well beyond the normal times required for the completion of their qualifications.

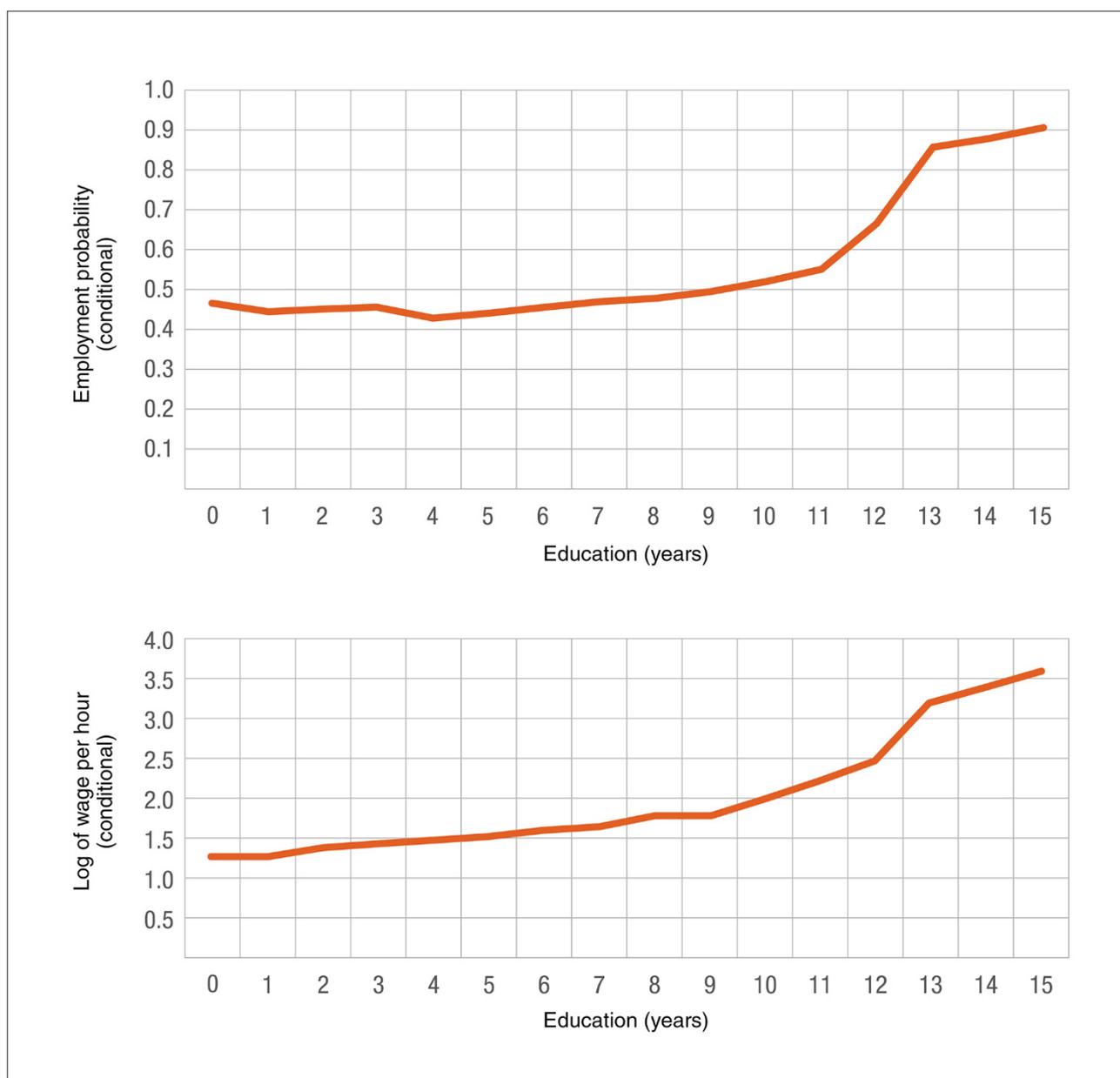
Higher education and inequality

According to both Van den Berg⁹ and Piketty¹⁰, technological innovation and globalisation have pushed up demand for highly skilled knowledge workers, even in service industries. If the supply of skills does not increase at the same pace as the growth in technology, then groups whose training is not sufficiently advanced will earn less. Furthermore, with more competition they are relegated to devalued lines of work, which increases inequality. In such economies, the ‘haves’ are the educated – and the more education, the better – while the ‘have-nots’ are those who did not finish school or did not graduate from tertiary education. The ‘college premium’ is known to all, and for many families justifies going deeply into debt to get that degree.¹¹

The effect of the kind of university system described above is reflected in a severely distorted labour market and skewed private returns (by students) to tertiary education. Van den Berg⁹ found that after controlling for a range of variables such as gender, experience, location, education does bring some rewards. However, the returns below matric are very

low. It is only after matric, and particularly at the level of degrees, that returns are extremely high, both in wages per hour but especially in employment probability (Figure 3). Van den Berg’s interpretation is that it is only certificates such as a matric (validated by a national exam) and tertiary certificates that signal to employers reliable cognitive gains. Statistically, there are still racial differences 20 years after apartheid, but for Van den Berg these differences are mainly a result of differences in quality of education. He concludes that:

The large differentials in earnings and access to jobs between the highly educated and the less educated lies at the heart of income inequality. The high wage premium to educated workers derives from a combination of a skills shortage at the top end of the educational spectrum, driving up wages of the educated, and a surfeit of poorly-educated workers competing for scarce unskilled jobs, thus dampening unskilled wages.^{9(p.214)}



Source: Van den Berg⁹

Figure 3: Conditional probability of employment and conditional log of wages by years of education.

Montenegro and Patrinos¹², in a background paper for the 2013 World Development Report, calculated private rates of returns from 800 household/labour force surveys. This study produced two surprises: firstly, that higher education has higher returns than primary education and, secondly, that the country in the world with the highest private returns to tertiary education is South Africa. The rate of return increased from 28.7 in 2000 to 39.5 in 2011, which is the same period that the Gini coefficient deteriorated from around 0.60 to 0.70.¹³ Responding to an email (14 December 2015) that sought to check whether the World Bank finding was correct, Patrinos confirmed the result and stated: 'I believe that high returns to tertiary and high levels of inequality are consistent.'¹²

The returns in South Africa are not just the highest by a small margin; the only other country with a figure over 30 was Rwanda in 2005, but they subsequently improved to 28 in 2010. Ghana and Côte d'Ivoire at 28 have the next highest returns in the world. To illustrate how big the disparity is, these are the figures for a selection of other countries: Mauritius 21, Mexico 20, Brazil 17, Portugal 14, Turkey 14, the USA 14, Argentina 12, Spain 11 and Norway 10.

Access to higher education is regarded by the haves as a means to maintaining privilege and by the have-nots as a means of getting out of poverty. But Piketty points out that in the US, the level of wage inequality results directly from a failure to invest sufficiently in higher education.¹¹ High tuition at both public and private universities keeps many individuals from receiving the training needed to shrink wage inequality and to make the country more equal and competitive globally. Given such trends, Piketty anticipates that social mobility will decline even further in the future as income increasingly determines access to US higher education. This problem is both amplified and racialised in South Africa: returns to higher education in South Africa are triple that of the USA and as in the USA, are also racially biased.

However, unlike the USA, the South African problem is exacerbated by a low participation rate, low undergraduate completion rates, and the absence of a college sector that can serve as an absorber for poor students, who are also academically and socially underprepared for graduate study. South Africa attempts to maintain a high level of quality, with very high rates of return for a completed undergraduate degree, but then also expects higher education to be a mechanism for reducing inequality. As far as I am aware, there is no system in the world that can achieve such an outcome.

The South African undergraduate system is too expensive, mainly as a result of government underfunding and inefficiencies at the undergraduate level. Thus, it cannot produce large numbers of highly skilled graduates (to drive down the exorbitant rates of return); neither can it absorb large numbers of successful (academically and materially) poor students. As the statistics from the Council on Higher Education⁸ show, what the South African undergraduate system is actually doing is taking in large numbers of students who they know have about a 30% chance of completing in 5 years. The universities have been able to maintain this unsustainable system through fee increases and a perverse incentive subsidy system.

Over the last decade, the government subsidy has decreased as a component of total university income from 49% to 40%, while the contribution from student fees has risen from 24% to 31%. It is difficult to gather information on university fees given the variation in costs across degree programmes; however, Statistics South Africa does collect information on higher education course costs from across the country and publishes this information in a 'tertiary education inflation index' annually.¹⁴ This index shows that between 2010 and 2011, the consumer price index was around 5% while the tertiary inflation index was close to 10%. From 2012 to 2014, the consumer price index hovered around 6% while tertiary inflation was between 9% and 10%. Given the fact that the block grant increases were declining at 1.35% per full-time equivalent per annum and that higher education inflation is higher than the Consumer Price Index, student fees increased at much higher levels than inflation.

There is certainly a need for a study into high tertiary inflation. Two contributors that immediately come to mind are the weakening Rand (import of books and equipment), and inflated salary packages of the ever-increasing cadre of university leadership above professorial level.

With regard to incentives, the undergraduate subsidy system pays universities 70% of the block grant subsidy for enrolments, as well as for institutional factors such as enrolments of disadvantaged students and size of institution, and 16% for graduation completion (the rest is for research and postgraduate outputs).¹⁵ In many countries there is now a debate about shifting the balance between input and output, with some countries discussing a 50-50 split. The low reward for graduation means that universities can take high-risk students, collect 70% of the subsidy and, by inflating fees, cover the cost of the inefficiency of low completion rates. What appears to be a survival strategy (a trade-off between demand for transformation and quality) is not only morally questionable, but also a lose-lose situation for the poor students and the economy.

For the poor students who do not graduate and do not pay back, the National Student Financial Aid Scheme is an extension of the social grant system, but could also be the 'revolving door' outcome against which the White Paper warned in 1997,¹⁶ where poor students are enabled to enter the higher education system, but being unable to complete their studies, are 'revolved' back into poverty, but in this case, with the additional burden of a student loan debt they are unable to repay because they lack the qualifications to secure formal employment. So, rather than higher education being an empowering mechanism, it instead disempowers poor students and puts them deeper into debt. Are we surprised that some of these students went beyond a protest march?

In 2015, both rich and poor students revolted and there is considerable anecdotal evidence that the ones who tried to burn down university administration buildings containing fee records were the ones with bad debt and bad academic records. The students had finally realised that this pretence by government and the higher education system to redress inequality through higher education was not working, and will not work. After all, even Piketty¹⁰ says that higher education does not solve inequalities; it can only keep them from becoming unsettling.

The system must change

For Piketty¹⁰, the best way to reduce inequality and increase the overall growth of the economy is to invest in higher education. He argues that not even minimum wage schedules can multiply wages by, say, factors of five or ten. To achieve that level of progress, education and technology are the decisive factors.

Partrinos¹⁷, from his study of 140 countries, makes three important policy points. Firstly, higher education returns are high and need to be funded better. Secondly, globally, and presumably even more so in South Africa, the high returns will fuel a demand for tertiary education and governments will need to seriously consider appropriate policies for financing this demand. Thirdly, in an environment of high returns to university education, any lowering of private costs means that the general taxpayer (who earns an average income) effectively pays for the education of the rich (who earn an above average income). This confirms the findings from a prominent South African economist that free higher education for all is a policy idea that will harm, rather than assist, the poor.¹⁸

So then what about free higher education for the poor? The South African government's own report makes a strong case for free higher education for the poor¹⁹ and this should be supported. But the really tough questions are: how will free education be undertaken and for how many? In most countries in the world, developed or developing, a very small proportion of the poor go to university, and ultimately complete successfully, because of lack of academic, social and material capital. There is no evidence anywhere in the world that large numbers of the poor can, through higher education alone, take one giant step into the middle class. China has proportionally invested in higher education at a rate never before observed,¹² but it is not free higher education and the university sector is an integral part of the state's development plan, while

in South Africa, higher education with its high private returns, is clearly seen as individual mobility.

To provide greater access and chances of success to poor students will force South Africa to confront the long-avoided differentiation choices. The first is that in order to maintain the best postgraduate system in Africa and to allow for successful access, universities must be differentiated into institutional types, somewhat like in California, which has the most successful higher education system in the world. In California, there are a range of institutions – from community colleges (remedial schools with some vocational offerings) and undergraduate universities (e.g. Los Angeles South West College) to world-class research universities (e.g. Berkeley and Stanford). This system is also under threat from low taxes and poor financial management.²⁰

The key for such a system is strong articulation – something South Africa has talked about for 20 years but has done very little about. Barack Obama started at Occidental College in Los Angeles, transferred to Columbia and then to Harvard. Obama's latest legacy programme is free community colleges. According to a brief issued by The White House, Obama's rationale is:

In the coming years, jobs requiring at least an associate degree are projected to grow twice as fast as jobs requiring no college experience. We will not fill those jobs – or keep those jobs on our shores – without the training offered by community colleges.²¹

In the South African context, this would require a radical rethink of our current notion of a community college, never mind a technical and vocational education and training college.

An alternative is to change the current colonial legacy of a 3-year degree with an honours degree to a 4-year system, with the possibility of a diploma or associate degree exit after two years. The key issue is that the students, as Van den Berg shows, have to leave university with a qualification. Currently, South Africa has a 'have or have not' structure, meaning high returns for degrees or unemployment. The honours degree is a major stumbling block – particularly for black students – because there is limited postgraduate funding for the honours qualification.²²

If such a model is applied to all universities, the South African higher education system could become a kind of hybrid college/university system. Admittedly, this could have unanticipated consequences, but for a start it would serve the development-equity imperative better than the current system. Perhaps more important than decolonising the curriculum would be restructuring the undergraduate tertiary landscape.

With the highest private returns to higher education in the world, free higher education for all would not only be scandalous, it would destroy the best postgraduate university system in Africa. Higher education should resist the South African Airways bailout approach to fees. The debate should not just be about different models of direct or deferred fee payments, instead the structure of the undergraduate system needs to be rethought within a framework of empirical evidence about the features, and contradictory demands, of the system.

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