Kagisano

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Student Funding

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The CHE is an independent statutory body established by the Higher Education Act, no. 101 of 1997. The CHE is the Quality Council for Higher Education, advises the Minister of Higher Education and Training on all higher education issues and is responsible for quality assurance and promotion through the Higher Education Quality Committee.

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Foreword

As higher education provision has expanded in many parts of the world, two major stress or limiting factors have emerged: how to ensure an adequate academic staff complement to meet the growing needs of higher student numbers, and, crucially, how to fund the systems and the students in order to ensure greater access to higher education while ensuring that the education offered is of the requisite quality. These have clear funding implications for the state, and for aspirant university students and their families as persistent economic difficulties have put pressure on the public purse and family income alike. These conditions are not unique to South Africa. Altbach *et al.* note that, "We live today in the midst of a profound economic crisis that will have repercussions in society at large and within higher education in ways that are not yet obvious. Many countries and universities will experience financial problems with serious consequences…

Research universities are likely to see significant constraints on their budgets as governments will be unable to provide the resources needed for their continued improvement. In many cases, the priority will be to allocate funds to ensure that access to the higher education system is not dramatically cut. In countries where student loan programs exist, either in the public or private sectors, severe constraints on their availability to students may be implemented along with increased interest rates.

The system will face pressure to establish or increase student fees for students.

- Cost-cutting practices at many universities will result in a deterioration of quality. More part-time faculty are likely to be hired, and class sizes expanded…

- ‘Freezes’ on hiring, construction of new facilities, improving information technology, and purchasing books and journals are likely developments.”[1]

South African higher education is similarly facing severe financial problems, as was dramatically evidenced in the #FeesMustFall student protests at the end of 2015, and the continuing unrest that has plagued several campuses. The pressure of years of underfunding of higher education in a context of exponential enrolment growth led to most institutions passing an increasing burden of costs onto students through high annual fee increases. Inevitably, this burst into widespread student protests across all campuses, with marches on Parliament and the Union Buildings, disruption of academic activities, and general volatility at many campuses. The demands were initially for smaller fee increases, then no fee increases, and then for free higher education – in some versions, for the poor, and in other versions, implicitly for all. These demands run counter to the trends noted above: where many governments are no longer able to subsidise higher education fully and are being forced to introduce cost-sharing models, and to rethink the notion of higher education as largely a public good, the call from students in the South African context is towards greater or full government subsidisation of tertiary studies. The major question, impelled by the push for greater subsidisation or free higher education, is how this is to be achieved in a sustainable way. Many other questions flow from that: Are there better funding models than the ones we have at the moment? Can a developing country afford to provide ‘free’ higher education? What efficiencies can be brought about to increase the available resources? Are our current mechanisms for dispensing student financial aid making optimal and fair use of the available funding? How are the demands for better funding for higher education to be balanced with other worthwhile but competing demands (such as health or basic education) in a fiscally constrained environment?

Government has found ways to ameliorate the situation in the short term

1 P.G. Altbach, L. Reisberg & L. Rumbley (2010) *Trends in global higher education: Tracking an academic revolution* (Sense & UNESCO, Rotterdam).

by finding extra funds to cover current shortfalls in student financial aid for existing students through reallocation of budgets. A Presidential Commission has been established to consider the matter and make recommendations for the future. This is by no means an easy task, and without being resolved, the situation is likely to deteriorate into ongoing and increasingly violent student protests, with severe consequences for the academic programme and for the quality of our universities. As Jansen puts it, "… the financial straw that is breaking the academic camel's back is government funding. There is every indication in the recent Budget speech of Finance Minister Pravin Gordhan that we are back where the crisis started last year with the #FeesMustFall movement. The student politics of the present will not tolerate a fee increase next year or any time in the foreseeable future; that is the one problem. The government capacity to make up the gap between a 0% fee increase and what universities need to function remains even more limited than in previous years. Which means universities will again be called on to find R300-million from sharply declining revenues as more top institutions slide towards survival status and, eventually, bankruptcy."[2] In addition, student expectations of free higher education have been raised, while growth targets for enrolments in higher education have been set in the National Development Plan.

The situation is dire, and cool heads, informed analysis and imaginative ideas are needed to contribute to finding medium to long-term solutions to the current funding crisis in an effort to ensure that the higher education our current and future generations of students receive is the best it can possibly be, and that, as one of the contributors to this volume put it, the values of efficiency (and quality), access, fairness and equality are reconciled in an appropriately balanced way.

In an effort to contribute ideas towards potential solutions, the CHE hosted a Colloquium on Funding on 3 December 2015. An open call was made for position papers proposing solutions to the higher education funding crisis, with a particular focus on student funding. The papers were to take as their starting point a chapter on funding developed by a task

2 Jonathan Jansen (2016) 'The Big Read: Stand up and stop the rot' in *Times Live,* 3 March.

team for a review of higher education over the last two decades organised by the CHE,[3] which is reproduced in this volume. That chapter provides an economic study of the current higher education funding situation and develops scenarios for the following decade based on output from the schooling system, projections of enrolments and graduations, growth targets and the likely funding envelope in each. Its conclusions are sobering, and highlight the need for fresh thinking on higher education funding. The position papers were therefore to consider where funds could be sourced; how they could be better allocated and distributed; and what approaches would best serve to achieve the goals of higher education. Most of the papers that were presented are collected in this volume;[4] they represent the ideas, analyses and opinions of individuals rather than of the CHE, but they will inform ongoing efforts by the CHE to provide advice on a variety of matters affecting higher education, most notably on student funding, and university fees. A report on the workshop which seeks to distil the emerging issues and ideas, and which captures the discussions held in response to the various presentations, forms the first contribution in this issue of *Kagisano*.

The papers presented at the colloquium represent the views of individuals, and none are the official views of any organisations with whom they are associated. The intention of the colloquium was not to achieve consensus or to provide recommendations, but rather to provide a space for a diversity of voices and fresh perspectives on a very difficult issue. A number of key issues emerged around four main questions: 1. Is there a case for a greater share of state funding going to higher education? And if so, how should any new money be shared between financial aid and institutional subsidies? 2. What possible sources of additional funding are there? 3. Should the goal be free higher education for the poor, or for all? Should higher education be free or affordable? and 4. What return can we expect from increased investment in higher education?

The ideas put forward in the different papers are interesting and challenging, and sometimes at odds with each other. They range from

3 CHE (2016) *South African higher education reviewed: Two decades of democracy.* (CHE, Pretoria).

4 The presentations by P. Pillay and D. Parker, Deputy-director General of Higher Education, are discussed in Chapter One, but are not included in this volume.

exploring private-public partnerships, to creating credit markets, to overhauling the entire student funding model in favour of an income-contingent loan scheme. In all the papers there is an overwhelming concern for how a severely constrained funding environment will affect the quality of higher education offered, and jeopardise the sustainability of South Africa's universities. What is clear across all the contributions is that the centre of the current situation cannot hold, that the need to consider feasibility is fundamental, and that an arduous road of research, analysis, debate, re-imagining, advocacy and communication, with careful implementation lies ahead, while the pressure from the barricades is to find instant solutions to intractable problems.[5]

Narend Baijnath
CEO, CHE

5 Thanks are due to CHE staff, especially Denyse Webbstock for chairing the colloquium and for editing this publication together with Genevieve Simpson and to Marianne Engelbrecht for her help with organisation.

A report on the colloquium

Ian Scott

1. Introduction and background

Purpose of the colloquium

The Council on Higher Education's colloquium on funding in higher education was held against the backdrop of the widespread 2015 student protests against the price of higher education in South Africa, which led to a freeze on fee increases for 2016, promises of increased state funding for universities and the National Student Financial Aid Scheme (NSFAS), and subsequent demands from some student groups for free higher education.

These events have precipitated an unprecedentedly strong focus on the financial accessibility of higher education in South Africa, a critical element of the wider issue of equity of access and outcomes. This colloquium was arranged by the Council on Higher Education (CHE) – in accordance with its mandate to foster critical debate on higher education – in order to explore possible systemic solutions to the funding predicament confronting all higher education stakeholders. It was organised around the presentation of papers by nine participants with expertise in the economics of higher education who responded to a call for papers extended by the CHE.

Aspects of the context

Some pertinent aspects of the context that were taken into account at the colloquium were as follows:

- There are major differences in funding needs and sources of revenue between institutions as well as between students.
- Notwithstanding this, there have been significant changes, affecting all universities, in the proportion of funding received from the various sources of institutional revenue. In particular, the proportion provided by state funding has decreased, and the proportion from student fees has risen. The rise in fees, coupled with increasing enrolment, has created strong pressure for continual growth in the total funding made available to NSFAS by the state.
- The real growth in fees has increased the difficulty experienced by students in funding their higher education studies. While a proportion of students continue to be able to source adequate funding from their families, private or institutional scholarships and bursaries, and commercial loans, enrolment growth has led to an increasing proportion of the student intake being unable to access such sources and hence having to rely predominantly on NSFAS. This has implications for the NSFAS approach to distributing the state funds available for student financial aid.
- There has been clearer recognition of the financial obstacles facing different student groups, two groups in particular. First, the need for financial aid for students from indigent families – currently specified as those with an annual family income of R122 000 or less – has long been accepted and acted on through NSFAS. The main issue in this case is the extent of financial support required by students in this group to be able to sustain the minimum conditions for effective university study, a common criticism being that NSFAS distributes its funds too thinly. In contrast, the needs of the second group – those from families with incomes above the NSFAS threshold but under (it is estimated) about R500 000 per annum – have gone largely unmet nationally. A family in this group cannot afford to pay fully

for higher education for any of its members from its own resources, does not qualify for NSFAS support, and is also largely unable to access private-sector bursaries and loans. Now termed 'the missing middle', this group is a critical one because, together with the first one, it is expected to represent an increasing proportion of higher education enrolment as the system grows.

In opening the colloquium and outlining its purpose, the CHE's CEO, Professor Narend Baijnath, noted that the nature and scale of these challenges called for fresh thinking and systemic solutions. The aspiration that higher education should be accessible to all who can succeed in it was blocked by persistent inequalities. However, this goal was now being expressed so strongly, particularly by student and youth formations, that there was a compelling need for the viability of the current higher education funding system to be reconsidered. The pressure to find solutions would be likely to grow rapidly: for example, would fee increases ever be accepted again?

Professor Baijnath put forward some key issues that should inform the wider debate:

- It is necessary to clarify the goal. In particular, there is a critical difference between 'free higher education for all' and 'free higher education for the poor', with major implications for resources.
- There is likely to be conflict between developmental objectives, particularly between increasing access and improving success.
- There will be conflicting priorities within the Post-School Education and Training (PSET) sector and within the education system as a whole: for example, does the emerging TVET sector, or Basic Education, have a greater claim on new resources than higher education?
- The need for a long-term view must be recognised, but this conflicts with the demands being made for immediate change.
- South Africa's overall economic outlook constrains what can be achieved.

2. Emerging themes

In view of the purpose and scope of the colloquium, the papers presented may be grouped into two broad categories by theme:

1. Analysis of the context and dimensions of the higher education funding challenge, pointing to the priority that it should be accorded and the implications for possible solutions.
2. Proposed approaches to responding systemically to the higher education funding challenge: identifying and addressing its essential characteristics.

These categories are by no means fully discrete; the presentations are grouped by their main theme.

The accounts of the individual presentations in this report will be under these thematic headings rather than following the order in which they were delivered. Key points raised in the discussions will be outlined under the relevant paper or theme. The accounts refer to the presentations and the papers on which they were based, or, in the cases of the Garwe, Hull and Van der Berg papers, on post-colloquium revisions.

3. The presentations

Theme One

Analyses of the context and dimensions of the higher education funding challenge, pointing to the priority that it should be accorded and the implications for possible solutions.

Four presentations are included under this heading:

Dr Diane Parker (Deputy Director-General: Universities, at the Department of Higher Education and Training). *Higher education funding challenges and the call for free education.*

Professor Pundy Pillay (School of Governance, University of the Witwatersrand). *Financing of universities Promoting equity or reinforcing inequality?*

Professor Charles Simkins (Helen Suzman Foundation – main author) and **Ms Jenny Glennie** (South African Institute for Distance Education). The *Funding* chapter of the CHE's *Higher education reviewed: Two decades of democracy.*

Dr Nico Cloete (Centre for Higher Education Transformation). *The ideology of free higher education in South Africa: The poor, the rich and the missing middle.*

Dr Diane Parker

Dr Parker set the scene for the colloquium with a slide-based presentation that was informative in terms of data, background and, most helpfully, the Department's views on the funding challenge. Her presentation fell into two broad sections: an account of pertinent aspects of the conceptual and policy underpinnings of the government's approach to financial aid for higher education students since the political transition; and a brief assessment of the current position from the standpoint of the Department, focusing on shortcomings and possibilities of improvement.

The question of whether there is an entitlement to free higher education has gained much significance in the protests and debates relating to the funding challenge. Dr Parker stated that the Constitution does not declare access to higher education to be a fundamental right; rather, it has to be earned. Moreover, the government had consistently taken the position that, as higher education is both a public and a private good, its costs must be shared among the beneficiaries, principally between the students and the state. She traced the policy on this back to the 1997 White Paper on higher education and the 2001 National Plan for Higher Education. The 2013 White Paper on the Post-School Education and Training sector introduced the goal of free higher education for the poor, but the idea of free higher education for all students had never been a policy aspiration. NSFAS was designed on this basis, as a progressive financial aid mechanism.

Dr Parker confirmed that the Department believed that a cost-sharing funding model should be retained. However, in the light of the perspectives raised by #FeesMustFall and related movements, it was recognised that a national dialogue on financial aid policy, including key matters such as the

NSFAS model and who should be entitled to state support, was strongly indicated. However, a point of departure for the Department was that it was essential to consider these matters in the context of the PSET sector as a whole.

The second section of the presentation dealt with aspects of the current position, in relation to NSFAS and the overall state subsidy for the educational function of the universities. In relation to NSFAS, Dr Parker noted that the level of under-funding had grown appreciably because of the rate of increase in fees, to the extent that, despite injections of funds, the number of students supported by the scheme had declined. The shortfall had been exacerbated by the significant increase in enrolment of students who required financial aid. The additional amount required to fully support all eligible students (estimated as making up 25.5% of the undergraduate population) would be R10.7 billion in 2016, sources for which would not readily be found.

At the same time, real per capita student subsidy had also declined, partly because enrolment growth had outstripped budget allocations and partly because South Africa was now allocating higher education a lower proportion of GDP (0.62% in 2014, excluding NSFAS allocations) than was the case in many comparable countries (the 2011 average for Africa being 0.78%). The drop in subsidy had been a primary cause of fee increases, which in turn raised pressure on NSFAS. This situation constituted a clear case for increasing state spending on higher education, but again, in the current economic climate, sourcing new funds meant competing with other pressing social needs. Dr Parker noted that the amount of additional recurrent funding needed to reach subsidy levels that were likely to be acceptable to the parties concerned was estimated at approximately R20 billion per annum.

Points that arose in the discussion following Dr Parker's presentation included the following:

- University fees were affected by a range of factors, including the institution's immediate socio-economic environment and its particular programme mix, so care needed to be taken to avoid

superficial or invalid comparisons.

- The statutory minimum NSC requirements for university entrance, particularly the Bachelor's and Diploma passes, were possibly misleadingly low and might be increasing demand for university places in an unrealistic way.
- The pressure on NSFAS funding was being greatly increased by the current low and declining level of recovery of loans; this was a matter that the scheme should take decisive action on.

Dr Parker concluded by affirming that the Department was attending to the funding challenge as a priority, and that major initiatives would be taken to seek solutions in 2016.

Professor Pundy Pillay

The need for a system-wide perspective on education funding, as highlighted in Dr Parker's presentation, was emphasised and elaborated in Professor Pillay's presentation. A central theme was that the higher education funding challenge must not be considered in isolation from other social needs or given undue priority under pressure from the vigour of current demands. In fact, if the principal goal is to reduce educational and social inequalities, the case for seeking more state money for higher education, in competition with other areas of need, is not strong, particularly in the context of South Africa's current economic outlook. Moreover, the case is further weakened by the evidence of substantial systemic inefficiencies in the higher education sector: external inefficiencies such as the evident mismatch between graduate outcomes and the needs of the economy, and internal inefficiencies manifested in, for example, 'high drop-out and repetition rates, and long completion times' as well as insufficiently productive administrations. The return on the state's investment in higher education must be questioned. Reducing the wastage in the system would release resources for productive use.

Professor Pillay acknowledged that the rapid increase in higher education enrolments made a case for more resources for higher education. However, given the constraints on the provision of state funding, the key question was

where such resources should come from. In considering this, it was necessary to deal separately with university subsidies and student financial aid.

In relation to subsidies, Professor Pillay refuted the contention that higher education was significantly under-funded in comparison with international norms. He argued that comparison with OECD countries was not valid and that South Africa's state expenditure on higher education was comparable with that of a range of other middle-income countries. Moreover, the rate of increase in state funding that higher education had received was close to that of the national budget as a whole. In these circumstances, it was not realistic to expect a higher share of the national budget, and the only alternatives lay in additional taxation. He discussed the tax options available, including a graduate tax, a wealth tax and an increase in general taxation. All the options were problematised but he concluded that the only viable possibility would be an increase in personal and corporate income tax, particularly if the progressivity of the system could be extended through higher rates on the highest earners.

In terms of student financial aid, Professor Pillay critiqued the effectiveness, equity, efficiency and sustainability of NSFAS, and proposed three interlinked interventions to replace it:

- An income-contingent fee scheme, under which students would pay fees on a sliding scale in accordance with their family income or, in the interests of practicability, the category of school they attended.
- Converting NSFAS from a loan scheme to providing grants for the poor, on the grounds that requiring poor students to take out loans does little to promote equity, putting a burden on the poor.
- Implementing measures to ensure that universities use state resources in the most efficient way possible, in order to lessen or remove the need for additional resources.

In concluding, Professor Pillay emphasised that at present inequality in basic education was perpetuating inequality in post-school education and consequently in life chances. It was therefore necessary for basic education and other fundamental social needs to be given priority in the allocation of any new state resources.

The discussion and questions on this presentation focused on the feasibility and desirability of the proposals made, including critique of the practicability and possible regressivity of income-contingent fees, the risks of abuse, and the difficulty of achieving efficiency gains within the existing structure of the higher education system. In response, Professor Pillay acknowledged the shortcomings but argued that the funding and wider equity challenges would not be met by a 'more-of-the-same' approach, and that what was required was 'unconventional thinking that does not pander to vested interests in our society'.

Professor Charles Simkins and Ms Jenny Glennie

Professor Simkins and Ms Glennie represented the task team that had produced the Funding chapter of the CHE's *South African higher education reviewed: Two decades of democracy*, the subject of the presentation. Professor Simkins was the main presenter. In view of the length, density and wide scope of the chapter, the presentation focused on only one section, *viz*. three ten-year scenarios (2013-2023) that the task team had developed as a key instrument for accurately and realistically assessing options for the future funding of the higher education system, the implications for the development of the system, and what conditions would be necessary for implementing the chosen option.

The presenters' preliminary remarks included the following:

- While the chapter contained an historical overview (as appropriate in a review), it was predominantly forward-looking, using historical data as the basis for projections intended to inform choices and decision-making about the future development of the system.
- It is essential that such decisions (including those on the current funding challenge) be based on sound data and transparent projections that realistically indicate the parameters of what is possible, as opposed to considering solutions that are 'outside the budget'.
- It is similarly essential to work from a general equilibrium model based on an integrated system, to avoid the risk of serious errors and undesirable consequences.

The model

The task team's model for projections was based, *inter alia,* on the following,*:*

- It accepted the current higher education funding model, involving cost-sharing among the main players, *viz*. Treasury, the Department (DHET), the universities and the students.
- It was built using the main processes governing higher education size and costs, including: the output of school-leavers from the NSC examinations; the rates of progression from school to university; and the patterns of progression through higher education.
- The future availability of state funds for higher education was also projected. This 'funding envelope' assumed continuation of funding at a constant proportion of GDP and an average economic growth rate of 3.5% (which has turned out to be optimistic).
- All funding projections were carried out in constant 2013 prices.
- No changes in student performance patterns or in the quality and efficiency of the educational process were assumed.

The scenarios

Scenario 1: This scenario is based primarily on current patterns and growth rates remaining constant, as well as 7.5% per annum real growth in the universities' third-stream income. It shows that these patterns would result in an average annual enrolment growth rate of 6% between 2013 and 2023, with total enrolment reaching 1.7 million in 2023. It also shows, however, that the cost of this growth – in terms of institutional and NSFAS grants required from the state – would far outstrip the state funding projected to be available, which would increase at a real rate of only about 2.7% p.a. The projected shortfall would be over R26 billion in 2023. The study concludes that Scenario 1 would be unaffordable, and would have disastrous financial and academic consequences for higher education.

Scenario 2: This scenario is based on the amount of state funding projected to be available, using current economic data and assuming economic growth of 3.5% p.a. and real growth in third-stream income of

2.5% p.a. This scenario was therefore expected to be affordable. However, it allows for only a very low rate of growth in student enrolment, just under 1% p.a., and would lead to somewhat lower growth in graduates, at 0.9% p.a. The study concludes that such low growth would not be acceptable socially, politically or in terms of requirements for economic development.

Scenario 3: This scenario represents a middle road. It assumes an enrolment growth rate (3.1% p.a.) that would enable the Department's enrolment target of 1.6 million by 2030 to be met. It also assumes that all universities would grow their third-stream income by 5% p.a. in real terms. Achievement of this scenario would, however, come at a cost and would involve compromise by all parties:

- The Treasury and the Department would need to provide additional resources for higher education, with state expenditure equating to a greater proportion of GDP than at present.
- The universities would need to accept greater austerity – managing demand and cost-containment rigorously without sacrificing quality and standards – and commit to a 5% p.a. real growth in third-stream income, a rate that has not been achieved across the sector to date.
- The students would need to accept lower continuation rates between school and university, particularly in relation to degree studies (since the current growth rate would not be sustainable), and limit their expectations of fee reductions or substantial increases in NSFAS awards (which are assumed in the scenarios to rise at the same rate as enrolment growth plus 1.75% p.a.).

It was recognised that changes in key parameters (such as the economic growth rate), not foreseeable at the time the scenarios were developed, would affect the projections somewhat. The figures and conditions set out in the chapter nevertheless represented a realistic assessment of the possibilities and constraints relating to the funding challenge.

In response to discussion and questions, Professor Simkins summarised key implications of the study as follows:

- There are distinct limits on what can be done to reduce financial obstacles to access; in particular, making higher education free to all is not achievable in the current context.

- Realistic scenarios indicate that it will become harder to gain access to university.
- There is a case for considering regulation of fees, since ad hoc responses such as the recent freeze on fee increases should not happen again.
- There is an urgent need to re-think the NSFAS model and package.
- It is necessary to apprise key stakeholders – particularly students and their parents or sponsors – about the issues involved in the funding challenge, so that they may make informed decisions on household choices such as which institutions to apply to. Such decisions need to be based on sound knowledge of the actual costs of different options, and of the implications of taking out loans from NSFAS or other sources.
- University salaries can grow at only a moderate rate.
- Effective management of the limited resources available is imperative, even though it will not be comfortable.

Dr Nico Cloete

Dr Cloete could not attend the colloquium but his paper on the ideology of free higher education had been circulated in advance. Because of time constraints, the paper was not read in full on his behalf but key points were presented by Dr Denyse Webbstock of the CHE.

The paper directly addresses an aspect of the student protest movement that has become increasingly significant but is seldom, if ever, clearly defined, i.e. is the goal of the movement free higher education for the poor or free higher education for all? There are clearly key subsidiary questions in either case, particularly regarding what is meant by 'the poor' and 'all'. The paper addresses the former, but defining the latter is not relevant to the argument.

The central theme of the paper is best captured in its own words: "The media and student spokespeople slip and slide effortlessly between 'free higher education for the poor' and 'free higher education for all'. These are two vastly different concepts".

The importance of clearly distinguishing the concepts lies not only in matters of practicability, especially affordability, but in their different consequences for the society, especially who benefits. The distinction between them is thus ideological.

The author unequivocally takes the position that free higher education (for all) is neither feasible nor desirable. The first section of the paper elaborates on this position, the main elements of the argument being as follows:

- The cost of providing higher education free to all students is entirely beyond the means of any developing country. Proponents of free higher education draw primarily on examples from the most developed countries. In Africa, early post-independence provision of free higher education was confined to very small numbers of students, and proved to be unsustainable.
- There is much evidence, particularly from Africa and Latin America, that providing free public higher education benefits the rich far more than the poor. This is commonly because students from the wealthier classes are predominantly in the best position to compete for access to selective public universities, while all but the most gifted students from poorer backgrounds are relegated to private fee-paying institutions of low quality. The paper refers to two studies specifically: Archer, who argues that this situation is regressive, in that the poor subsidise the rich;[1] and Barr, who argues that even in OECD countries, state higher education subsidies predominantly benefit the rich.[2]

The paper considers possible ways ahead, none of which would be straightforward. The key points made are:

- That the group termed the 'missing middle' must be included amongst those who are most in need of financial support and most likely to benefit from this; and
- That any viable and equitable solution must entail the rich having to

1 S. Archer (2015) 'Free higher education is an inequality engine' in *Business Day*, 20 October.
2 N. Barr (2004) 'Higher education funding' in *Oxford Review of Economics and Politics* 20 (2), pp. 264-283.

pay more for higher education.

The conclusion is also best expressed in the paper's words: "… in a developing country, [the call for free higher education] is financially, empirically and morally wrong – the poster should read 'affordable higher education for all' – with a clear understanding that affordable means different costs for different groups in society."

Theme Two

Proposed approaches to responding systemically to the higher education funding challenge: identifying and addressing its essential characteristics.

Five presentations are included under this heading:

Dr Chelete Monyane (NSFAS). *Can Social Impact Bonds (SIB) be a solution for the higher education funding crisis in South Africa?*

Mr John Kruger (Department of Monitoring and Evaluation, the Presidency). *Approaches to student funding: Credit market, social protection and pyramid inversion.*

Dr Evelyn Garwe (Zimbabwe Council for Higher Education). *Responsive and sustainable higher education funding: Lessons from Zimbabwe.*

Professor Servaas van der Berg (University of Stellenbosch). *Funding university studies: Who benefits?*

Dr George Hull (University of Cape Town). *Reconciling access, efficiency, fairness and equality: Towards income-contingent student loans with universal eligibility.*

Dr Chelete Monyane

Dr Monyane's presentation advocated the use of Social Impact Bonds as a means of accessing substantial additional funding from the private sector to bridge the gap between the resources currently available for higher education, particularly state resources, and the growing demand for additional funding, particularly for student financial aid.

Social Impact Bonds (SIBs) are defined as "an innovative method of financing social programmes in which governments partner with service

providers and private sector investors to fund social programmes. Investors are repaid if and when improved social outcomes are achieved. Thus, government pays only if the services are successful at meeting the needs of its citizens." (Joseph 2013 in Monyane 2015).

By means of SIBs, "private funding is used to scale-up services and test innovations". If the interventions are successful and hence serve to reduce government expenditure, the investors gain a return on their investment from a share of the savings. SIBs thus have the role of "transferring the risk of program failure to the private sector" (Horesh 2013 in Monyane 2015), and can provide the means to implement policy intentions in ways that are beyond what government itself can resource.

Dr Monyane argued that the current higher education funding crisis offered a good opportunity to explore the value of public-private partnerships because all the conditions required for SIBs to operate effectively were present. These included: a compelling need for resources beyond the means of the state; a specified beneficiary target group; a data system that could be used to set and measure quantifiable performance targets; and scope for innovative approaches. Moreover, there was a need for universities to reduce the cost of higher education by improving the effectiveness of their delivery and minimising wastage, and private-sector involvement could improve efficiency.

He acknowledged that there were no known examples of SIBs being successfully applied to higher education, and the presentation did not attempt to outline any specific forms in which the SIB approach could be used. Rather, the intention of the presentation was to raise the possibility of public-private partnerships having a significant role in mitigating the funding crisis.

Mr John Kruger

As a backdrop to his presentation, Mr Kruger provided a contextualising view of the 2015 student protests as being a powerful indicator of the importance of higher education in the lives of contemporary youth. He compared these protests with other recent social struggles in South Africa and found key points of commonality, including contestation for a scarce

and valuable resource. The battle is not so much amongst those who need the resource as with those responsible for providing it, because the pressing need is to make it more accessible.

Mr Kruger raised two key points that react to commonly-held views and also contrast with positions taken by several other presenters at the colloquium. These two points refer to (a) the view that no comprehensive response to the higher education funding challenge is possible because of the inadequacy of the resources available to the state, and (b) the issue of whether measures to address the challenge should be universal or limited to the poor.

In relation to the financial constraints, Mr Kruger argued that funding students is wrongly regarded as a budget problem, when it is, and must be seen to be, primarily a credit-market problem. At present, state higher education spending – including student loans – is classified as current expenditure, whereas an alternative and more productive classification would be as investment in the future development and wellbeing of the country. If the latter view is taken, the challenge is not about redistributing the funding currently available, with all the difficulties inherent in confronting competing priorities, but rather "to build a really effective and fair 'market' for student debt".

A key obstacle to this is that the private credit market is not servicing the need at all adequately, and is unlikely to do so in future, because of factors such as high cost and a lack of collateral among those who most need the service. The presentation argued that it must therefore fall to the state to compensate for this market failure by creating a credit system that is affordable for the main target groups, efficient in recouping loans through the tax system, and made fair by such means as income-contingent repayments.

Mr Kruger's paper discusses various forms that such a system could take, including a model that is close to the current NSFAS but much larger, and he raises the possibility of aiming to ultimately achieve what would effectively be a fee-free system, along the lines of the approach used in Nordic countries. The amount and possible sources of whatever state

funding would be required are not specified, but the point is made that there are approaches – such as "a benefit and tax system [that mimics] a loan system" – in which operating costs could be greatly reduced.

This is relevant to the second key point discussed in the presentation, *viz*. the tension between targeted, means-tested student financial support and a universal loan scheme. The presentation discussed some key pros and cons of these two approaches, drawing on commentary from Fourie (2015), Barr (2005) and Piketty (2014) on the implications of the different approaches for fairness and efficiency – for example, the regressive effects of a universal system and the high costs of means-testing. The presentation also raised the relationship of student funding to wider social protection; key issues here include "how society supports a portion of the population during a phase of the life-cycle where they do not earn sufficiently for their own upkeep", and the competing needs of other categories of youth such as TVET students and the unemployed.

The presentation closed with two caveats: the importance of avoiding an undue focus on higher education when the need to correct the current 'inverted pyramid' should have similar or higher priority; and the likelihood that the process of achieving agreement on how the funding challenge should be addressed would be difficult and protracted.

Dr Evelyn Garwe

This presentation was based on a 'paradigm shift' in Zimbabwe's higher education funding approach that was introduced in 2006. The change was driven by two main factors. The first of these was a decade-long financial predicament, which developed into a funding crisis. It was brought about by a combination of growth in demand for higher education, an increasing number of qualifications being offered, rising costs per graduate, and a severe shortage of state funds. The second driver was student unrest, which had persisted for an even longer period. While the need to address these conditions was imperative, the funding reform also took account of the central objectives of the higher education system, *viz*. access, equity and quality.

The new model had four key features:

- *Cost-sharing leaning heavily towards higher contributions by students:* While Zimbabwe had never provided free higher education, the proportion of the state-regulated tuition fees that students had to bear had risen over time, and was set at 100% (required as an upfront payment) in 2006. Flexible payment arrangements were possible but the standard requirement was generally enforced. However, the fees continued to be set considerably lower than the cost of instruction, so all students did in fact benefit from state subsidy in this way.
- *Involvement of private players:* The establishment of private higher education institutions was permitted, with no state regulation of fees or state financial support for students. However, a number of private universities were subsidised by their sponsors (e.g. religious bodies) and provided their students with financial aid in a range of forms.
- *Cadetship scheme for students facing financial hardships:* This scheme became the primary mechanism for promoting equity. The tuition and accommodation costs of eligible students (identified through means-testing) were borne by the state in return for working for government after graduation. The scheme was confined to students at public institutions, as students going to private universities were deemed to have done so by choice.
- *Limited and targeted fiscal support only to public universities:* This enabled state higher education funding to be reduced substantially.

Dr Garwe indicated that the outcomes of the new funding model were regarded as highly successful. The universities reduced their costs, diversified their revenue sources, and introduced new modes of delivery. Rapid increases in enrolment were curbed. The ensuing improvement in student performance and virtual elimination of student unrest were attributed to an increase in students' commitment to their work, arising from having to take responsibility for financing their studies themselves. There had also been negatives: the means tests used were vulnerable to

abuse, and there was concern about increasing drop-out rates.

Questions and comments on this presentation focused on whether the outcomes of the new model were in fact desirable or not. In particular:

- Seeing reduction in demand for higher education as a success was questionable when there were shortages of high-level skills across the region. What were the effects on equity?
- Similarly, should the minimising of student protest be considered desirable?
- Dr Garwe had indicated that only 60% of 'deserving students' were being accommodated in higher education in Zimbabwe, with many of the others being sent to other countries. This raised questions about access.

Zimbabwe nevertheless saw this model as being right for its context. Perhaps the key message to have come out of its experience is as follows: "Reliance on government for providing the bulk of higher education funding to all students (including those who can afford it) may be considered to be an irresponsible and unsustainable option resulting in misdirecting scant resources away from other competing and critical national initiatives."

Professor Servaas van der Berg

The greater part of this presentation was devoted to a detailed and innovative analysis of the extent to which different categories of student – based primarily on household income – benefit from the subsidies provided for universities by the state. The analysis aimed to inform key questions about how the responsibility for funding higher education should be distributed, and in particular who can fairly be expected to pay the costs for which the individual student is currently liable. The final section of the presentation comprised some broad conclusions on these issues.

At the outset, Professor van der Berg discussed the nature of higher education's contribution to the society and to the students who participate in it. He examined to what extent higher education could be considered a merit good (one like primary education which is critical to the society but would be under-consumed if it were not made compulsory – a

definition that higher education does not meet), a public good (some of the characteristics of which do apply to higher education) or a private good (sought by individuals because of the benefits it confers on them). On the evidence of the major advantages that higher education gives to individuals in terms of earnings and life chances, Professor van der Berg classified higher education in South Africa as primarily a private good. This carries implications for who should pay for it.

Professor van der Berg then presented the findings of a study undertaken to determine the proportions in which different categories of student (in terms of household income) currently attend university, and hence the extent to which the different categories benefit from university subsidies. The research method used was a fiscal incidence analysis. To minimise the possible bias and margin of error that could affect the analysis, Professor van der Berg adopted two different approaches with different sources of data, and compared the findings.

First, an analysis was done based on 2006 and 2011 World Bank data, showing estimated shares of university subsidy by decile of the population according to household income. Notwithstanding possible exaggeration of the amount of subsidy going to the upper deciles, the figures "imply extreme bias towards spending on the rich if all students are equally subsidised". For example, the 2011 data show about half of the subsidy benefit going to the richest decile.

Secondly, an innovative approach was used to produce comparative data, using SACMEQ III, a 2007 survey of Grade 6 students, together with the 2007 Community Survey, to estimate (a) the proportion of each decile that would get a 'university exemption' (the statutory minimum requirement for entering degree studies), and (b) the proportion of each decile likely to actually enter a university.

The incidence curves generated by these three sets of data are similar, and collectively indicate that "access to university is extremely skew", and that the beneficiaries of university subsidies are predominantly in the richest deciles.

In these circumstances, the question must be: What can justify large

subsidies for university students? Professor van der Berg's response is that, in the interests of equity, there must be accessible and affordable routes to higher education qualifications for students in all the socio-economic categories.

At the same time, however, the extent to which higher education is a private good means that financial support for students should come in the form of loans. This in turn means that there needs to be an effective credit market that is affordable for low-income groups. Since it is evident that the commercial sector will not meet this need, state intervention is required.

The presentation closed with a brief account of what kind of systemic intervention should be considered. The need for a robust funding system would inevitably grow. It was clear, however, that the response to the funding challenge "cannot be free university studies for the few who do qualify to go to the university, as that is beyond the fiscal capacity of the country, and is inequitable in its effect".

Dr George Hull

To provide a backdrop for his presentation, Dr Hull outlined some of the multiple and often conflicting demands on South African higher education and its funding system: growth in numbers and competitiveness, widening access, cost-effectiveness, an equitable distribution of responsibility for funding, and fostering social cohesion.

He identified four key values that arise from these imperatives and must underpin the higher education funding model if it is to serve its purpose: Efficiency, Access, Fairness and Equality. He argued that acceptance of these values, with shared understanding of their meaning, was necessary both for designing an effective model and for gaining public support for it, especially from the student body. Most importantly, the success of the model would depend on reconciling these often-competing values satisfactorily, and finding means of expressing this reconciliation in practice.

The presentation set out to define the specific meaning attached to each of the four values in the context of a funding approach, to explore how they might be reconciled within the specific features of a funding model, and to identify concrete measures that would be necessary for successful implementation of the proposed model.

The first of the values, *Efficiency*, was described as having three manifestations in a funding model.

- Allocative Efficiency involves ensuring an effective mix of programmes that meets student and labour-market needs and matches supply and demand as closely as possible. It is strongly facilitated by a tuition-fee system that allows fees to differ between programmes and between institutions. This represents the Efficiency argument for retaining the charging of tuition fees on a competitive basis.
- Intra-sectoral Efficiency involves, among other things, ensuring a proper balance of funding sources that accords with the public good and private good roles of higher education. The implication for the funding model is that there must be a fair balance between state and student contributions.
- Inter-sectoral Efficiency refers to ensuring an effective allocation of state funding across all sectors and government functions. This clearly affects the proportion of state funding that should be allocated to higher education in competition with other areas of need.

The second of the values, *Access*, was used in the presentation primarily to mean equality of opportunity. In addition to 'formal' equality of opportunity – the absence of legal or other formal barriers to inclusion - 'substantial' equality of opportunity was defined as "the principle that there must be no social barriers preventing individuals from becoming equally qualified for a university place or job for which they have equal natural aptitude". In the funding context, the Access value must refer to the realisation of both formal and substantial equality of opportunity.

The distinction between Access and the third of the values, *Fairness*, was described as follows: the Access value concerns whether a given individual will receive a university education, whereas Fairness concerns how the benefits and costs of higher education are allocated among members of society. In this context, Fairness - and the way it interacts with the other values – is a complex concept, warranting the extensive discussion it

receives in Dr Hull's paper. It also has significant implications for the funding model. For example, in relation again to higher education being both a public and a private good, "Fairness therefore tells us it would be wrong for university tuition to be fully publicly funded, as this would amount to intrinsic benefits and a competitive advantage in the employment market for one group in society (those who complete a university degree) being funded by another group (those who don't complete a university degree) which does not receive equivalent benefits". Thus the Fairness value requires a mixed funding model.

Before turning to the fourth value, Dr Hull focused on the interaction between the first three values, exploring how they might be reconciled in practical form in a funding model. Four different models were considered in this regard: Free Higher Education, which failed to accord with the Fairness and (allocative) Efficiency values; Differential Fees, which was at odds with Fairness in particular; Graduate Tax, which also fell short on Fairness and (allocative) Efficiency; and Income-contingent Loans, the model that best reconciled the three values.

An Income-contingent Loan (ICL) is, "a loan whose rate of repayment is determined neither by its size nor by the interest rate on the loan, but by the level of income of the individual who takes out the loan" (Barr 2009, in Hull 2016). ICLs are provided by government, require no security, and are repayable as a specified percentage of the beneficiary's income. Thus, "How much of the loan the graduate pays back, and how quickly, is determined entirely by the level of income they achieve." In summary, "By allowing the retention of fees - thus fostering Fairness and Efficiency - but using the consumption-smoothing device of income-contingent student loans to ensure manageable payment - thus fostering Access - ICL reconciles the three values of Efficiency, Access and Fairness more successfully [than the other models]."

Detailed analysis of these three values indicated that the properties of an appropriate funding model would include the following:

- Cost-sharing through state subsidies and student fees;
- Tuition fees rising to a level where they contribute more to tuition costs than subsidies do;

- The rise in fees being compensated for by income-contingent NSFAS loans of sufficient size and availability to meet the need, and with improved repayment conditions.

The last of the four values to be considered was *Equality*. In addition to its conventional meanings, the Equality value, as used in the presentation, embraces the goal of social cohesion, in the sense of attainment of "a cohesive society of equals". The presentation argued that this value added a critical additional dimension to the funding model needed in South Africa, viz. that the income-contingent loan scheme should be open to all students entering undergraduate education in South Africa. The argument was as follows.

Pursuing "a cohesive society of equals" requires the removal of practices resulting in "exclusion, stigma, hierarchy and domination". However, two elements of the existing funding model – means-testing and the requirement for household contributions to complement financial aid – act against this goal. First, as well as being expensive and often insufficiently accurate, means-testing is commonly experienced by those subjected to it as stigmatising and engendering a sense of inferiority to more affluent peers as well as university staff. Secondly, the household contribution requirement carries a substantial risk of 'domination', of senior family members having undue power over choices that have a major effect on the student's future, with potentially adverse consequences for the individual and the public good.

Reconciling Equality with the other three values requires removing the need for household contributions and means-testing. This in turn means that loans must be available for the full amount the borrower needs and that the loan system must be open to all students. This would be particularly significant for the students in the 'missing middle' but there would be no impediment to students from any socio-economic category availing themselves of the facility.

The presentation recognised that implementing this funding model, whether through expanding NSFAS or by other means, would have substantial financial implications that might be seen to be entirely unrealistic. The presentation therefore proposed six measures that, taken together, "could make universal student loans an affordable policy even

without any substantial increase in the proportion of GDP spent on higher education". They are as follows:

- Collection of NSFAS debt via the South African Revenue Service (SARS): to ensure efficiency of recovery.
- No conversion of loan into bursary: in the interests of fairness as well as maximising recovery.
- An interest rate above the government's cost of borrowing (but below commercial rates): to minimise abuse through arbitrage, as well as for reasons of affordability to the state.
- Recoverable loans counted as an asset in the public accounts: at present, student loans are classified in the national accounts as expenditure, as if they were grants. This practice means that the amount available for loans is severely and artificially limited by the caps imposed on non-recoverable spending.
- A temporary graduate tax: a tax on current graduates – justified by the fact that they enjoyed higher levels of subsidisation than do current students – intended to raise capital for the establishment of the new loan system and to sustain it until it is in full operation.
- Universal eligibility to be phased in gradually, as resources allow: prioritising urgent developments in the shorter term, such as including the 'missing middle'.

Questions and commentary on this presentation focused particularly on the apparently radical and counter-intuitive aspects of the proposed funding model, and the negative perceptions that these might engender among the public. For example, increasing fees and interest rates, and reversing the practice of partial conversion of loans into bursaries, would be likely to be seen as drastically increasing the financial burden on the poor. This could provoke strong reactions that might well obscure the compensatory measures that have been built in, such as that the income-contingent loan scheme would ensure fairness in repayment. There would also be ongoing inequalities that would affect the perceived or real fairness of the system; for example, economically disadvantaged students would be the ones most likely to take extra years to complete their studies, and to have therefore

incurred more debt at the time of graduation than well-prepared students who had elected to fund their studies through the loan scheme.

In responding, Dr Hull argued that the equity element of the funding model should be forward-looking, based on the student and his or her future capacity, rather than looking back, at the environment and home circumstances from which the student had come. It was fully agreed, however, that the success of any future funding model would rest on effective communication and consultation with all the stakeholders, particularly the student body, as it would be essential to reach a high level of shared understanding.

4. General discussion on possible funding models

Questions and comments relating to specific presentations have been noted in the relevant summaries. Denyse Webbstock led a general discussion on the presentations, focusing on the range of possible funding models that had been put forward. This section notes the four topics on which the bulk of the general discussion focused, together with (edited versions of) some illustrative comments.

The importance of innovative thinking about models

- The scale and complexity of the funding challenge call for willingness to be open-minded about possible solutions, to think about new models and entertain what may seem like radical ideas.
- A business-as-usual approach will not produce solutions.

Expectations of the funding model: calls to be realistic

- We need to be very careful about what we consider to be the ideal model to work towards. For example, the much-admired Nordic model of a fee-free system carries inherent disadvantages, such as horizontal inequity.
- It is essential to take account of the particularities of our own

context, even in basic matters such as what financial aid is used for. Many students in higher education "don't think only of themselves" but of their family's needs too.

- A financial aid system cannot in itself deal with our systemic inequalities. We should not expect too much of it, or "want it all". Rather, it will be important to establish justified priorities (such as meeting the needs of the 'missing middle').
- Similarly, establishing a workable model will involve trade-offs, compromises and reconciling competing aims. For example, some element of unfairness may need to be accepted in the interests of the greater good.
- We cannot use a funding model to try to micro-manage people's behaviour. For example, trying to regulate to what extent a parent provides financial support for a son or daughter is not the business of a financial aid system.
- A funding model cannot compensate for general limitations in the higher education sector. For example, enrolment cannot keep growing at the current rate without resulting in increasing the dropout rate.
- We cannot predict the future, so have to "take a bet on what will work". It is not possible to extrapolate from current conditions without risk. For example, will the higher education earnings premium continue?

Increasing efficiency and cost-saving: significance and caveats

- Recognising the importance of the affordability of the funding model and the difficulty of sourcing additional funding, a number of participants referred to the desirability of freeing up resources through increasing efficiency, but there were few specifics.
- It is important to keep developing educational technology as a means of redress and cost-saving.
- While new affordances allow for promising new approaches, like the flipped classroom, we must not misunderstand the possibilities of educational technology, particularly for cost-saving.

Communication and consultation

- Finding technical solutions to the funding challenge will be only a part of the task. The bigger part will be communication and consultation with the diverse stakeholder groups, to reach shared understanding of what is realistically possible.
- This will mean relying not only on the economists but "bringing in the anthropologists and the sociologists".

5. In conclusion

It was not the intention of the colloquium to seek consensus or recommendations on the funding challenge. However, it may be valuable to consider key questions and issues that emerged, as outlined in the following observations.

Is there a case for a greater share of state funding going to higher education? And if so, how should any new money be shared between financial aid and institutional subsidies?

- The case for increasing subsidies rests particularly on reversing the recent decline in their value and raising higher education's share of GDP to a level similar to that in comparable countries.
- The case for substantially expanding the state financial aid system is based on an intersection between broad social justice and national development needs. It is also affected by political considerations.
- Views expressed at the colloquium indicate that, in addition to some principled objections to higher education getting more state funding in competition with other educational and social needs, there is considerable scepticism about the likelihood of any substantial additional funding being forthcoming from the national budget in the current economic climate. Four of the presentations in fact proposed alternative means of generating financial aid funding: through credit markets, public-private partnerships, and

re-engineering the state loan scheme.

- Aside from the effects of political pressure, it is evident that, to be successful, a case made for recurrent additional funding would need to be strategic and rigorous. It is not clear who would be responsible for producing such a case.

Possible sources of additional funding for higher education

- A range of possible sources, state and non-state, were put forward in the presentations, none of them readily accessible. It is evident that this critical issue requires further research and analysis.
- The Simkins task team has done most valuable work in quantifying the resources needed for different scenarios and outlining the conditions required for achieving them. These financial realities have major implications for the design and practicability of an effective funding model, and emphasise the importance of favouring sources of revenue that do not rely predominantly on the national budget.

Clarifying the goal: Free higher education for the poor, or for all? Free or affordable?

- As Cloete's paper clearly articulated, the end goal of the current student protests is not clear. It shifts erratically between 'for the poor' and 'for all'. On the other hand, the government view, as expressed by the DDG at the colloquium, is that 'free for all' has never been contemplated as a policy goal.
- None of the colloquium participants expressed the view that free higher education for all was viable in the current South African context. Some made categorical statements that it was not. A number were opposed to the idea in principle, emphasising that it was in fact necessary for the wealthier segments of society to pay considerably more in order to cross-subsidise the poor. In contrast, one participant believed that a fee-free system, along the lines of those in Nordic countries, could be legitimate as an ultimate goal.
- The distinction between 'free' and 'affordable' was in fact addressed,

directly and indirectly, with more nuance at the colloquium, and emerged as a substantive issue. For those who proposed alternative forms of funding based on loans, higher education would not be free for anyone, but the accessibility, size and repayment conditions of the loans was the key issue in terms of equity and effectiveness. A critical difference between the views was whether the loan scheme would be targeted (as now in NSFAS) or open to all undergraduates. There are ideological underpinnings to the alternative perspectives but the issue of means-testing – as a necessary tool for focusing resources on those most in need, or a humiliating, divisive and counter-productive process – is a key manifestation of the differences, with major implications for funding models.

What return could we expect from increased investment in higher education?

- The question is noteworthy because it was scarcely addressed at the colloquium in any explicit way. The issue of the effects of poor student performance on cost per graduate, as well as other indicators of the effectiveness of the use of resources, was referred to in one or two of the presentations, but cost considerations and projections generally assumed no future change in current patterns or productivity.
- It may be, however, that the internal efficiency of the higher education sector – in particular, the relationship between improved funding (for institutions and students) and improved graduate output – will become a significant consideration in negotiations on additional higher education funding with the Treasury and other stakeholders.
- In any event, an account of what return on investment might be expected should presumably form part of any case made for additional funding.

6. Further Steps

The colloquium raised a range of issues and topics that warrant further reflection, research and refinement, ideally in forms that can be fed into the deliberations of formal bodies established by government to address the funding challenge, as well as into the public debate. The CHE will play a major role in furthering such work.

Funding

From *South African higher education reviewed: Two decades of democracy* (CHE: 2016)

Charles Simkins*

1. Introduction

Purpose

The purpose of this study is to illuminate the funding situation of universities as it may evolve over the next ten years. In doing so, it considers policy aims, the functioning of the system and resource constraints. On the projection assumptions, the analysis indicates the choices facing the main actors: the National Treasury; the Department of Higher Education and Training (DHET); the universities and students.

The introductory part of this chapter considers values applicable to funding and the demographic context of higher education. Section 2 puts the current circumstances of universities into a recent historical perspective, paving the way for Section 3, which constructs three scenarios, each with different levels of funding, student enrolments and university staffing. Taken together, the scenarios show the expected pressures on the system, which will require changed behaviour on the part of the major actors. Section 5 considers four productivity growth measures which will make available

* The task team for the funding chapter of the CHE's review comprised Jenny Glennie (leader), Glen Barnes, Gerald Ouma & Charles Sheppard, with Simkins as main author. Other contributors to the chapter were Ian Scott, Rolf Stumpf & Denyse Webbstock.

resources stretch further. The last section draws conclusions.

The study in applied economics undertaken for this chapter takes a general equilibrium approach to higher education funding. This means that all the major variables are considered together and brought into relationship with one another. The aim is to avoid a narrow focus on individual variables, an approach that easily leads to policies with unintended consequences.

Values

Two key economic and social values inform this study. The first is that of ***economic efficiency***; there must be investment in raising the average levels of human capital, particularly in terms of formal education and training, in each successive cohort of the South African population as a complement to investment in physical capital.[1] Ever since the boom of the mid-1930s, South Africa has experienced difficulty in achieving this goal. The situation was worsened by the inefficient allocation of resources under apartheid. Economic inefficiency leads to wasted resources and lost opportunities; in terms of education, the inefficiency lay primarily in the failure to optimise the development of knowledge and skills across the population. The second (and equally important) value is ***equality of opportunity*** which, applied to education, means that every person should be able to acquire the education that their interests and talents make worthwhile. It is here that particular aspects of the broader concepts of redress and transformation in higher education find their application.

Investing in human capital development is like investing in other areas: it produces a return. In terms of education, every person, irrespective of their capacity, will reach a point where diminishing marginal returns set in, such that there will be limits on the further value of the type and quantity of formal education that should be provided. Equality of opportunity does not mean equality of outcome since there is a range of interests and capabilities among learners. Neither does equality of opportunity depend on introducing completely free higher education.[2] If higher education is

1 Educated, trained and experienced people generally earn more than their less-educated, untrained and inexperienced counterparts. The capital value of the difference in earnings over a lifetime represents the human capital embodied in an individual or group of individuals.

2 Completely free higher education requires no obligation to pay for higher education at the time of delivery or later. It contrasts with a situation in which no payment for higher education is made at the time of delivery, but which entails repayment of a loan once earnings commence.

not completely free, equality of opportunity requires a well-functioning credit market in which students can borrow on reasonable terms, repaying as graduates out of an enhanced income stream later on. A good credit market is one that advances loans to all students who qualify, while avoiding unsustainable levels of student indebtedness.[3] This enables access for all who qualify educationally for higher education, while drawing on future income streams when graduates start to work. The return flows from graduates can then be added into new allocations for student loans, making a loan scheme less onerous on the state than a corresponding bursary scheme without return flows.

The twin values of economic efficiency and equality of opportunity constitute the backdrop against which the material in the rest of the chapter should be viewed.

Demographic context

In addition to the values outlined above, a major contextual factor underlying this study is the demographic context of South Africa. The South African population increased eightfold between 1900 and 2000 and so the economy could grow extensively, if increasingly inefficiently, in the twentieth century on the back of a rapidly expanding labour supply. From the beginning of the 1970s, however, it became apparent that South Africa lacked a sufficiently educated population to achieve economic growth. Moreover, in the last thirty years, demographic circumstances have changed, with fertility rates dropping rapidly. Table 1 sets out a projection of the South African 20-24 year-old age group (approximately the average age of participants in higher education) for the period 2013-2023.

From this table, it is evident that the growth of the cohort will slow appreciably, especially on the 'without migration' assumption.[4] This implies that growth will depend on increasing average levels of education and training rather than on the same level of education and training spread over more people.

3 Unsustainable debt is here taken to be debt that cannot be repaid within fifteen years on a reasonable income-contingent repayment scheme.

4 The 'with migration' estimates are based on net immigration of 200 000 per year; 60% male, 40% female. This is close to the estimates contained in Statistics South Africa's 2013 mid-year population estimates.

Table 1: Demographic projections for 20-24 year-old age group, 2013 -2023

	With migration	Without migration
2001	4 486 136	4 486 136
2013	5 091 638	5 091 638
2018	5 211 661	5 074 802
2023	5 507 504	5 307 308
Annual growth (averaged)		
2013-2023	0.79%	0.42%

Source: UNAIDS, Spectrum/EPP 2013

The structure of the chapter

Section 2 contains a summary of developments affecting funding since 1994 and a detailed account of the population flows through the education system over the years following the restructuring of the higher education sector. The account references the output of senior secondary schools (Appendix) and traces inflows of students into higher education, enrolments, progression rates and graduates. It then traces developments in university funding (both block and earmarked grants) and allocations through the National Student Financial Aid Scheme (NSFAS). The purpose of Section 2 is to contextualise the current state of the system and to provide a base for a ten-year projection from 2013.

Section 3 considers some of the funding implications attendant on the 2013 White Paper.[5] It reports demographic projections for the ten years from 2013 to 2023, following the same pattern as the historical analysis: the senior secondary school system, first-time enrolments in higher education, total enrolments and graduates. It constructs three scenarios, each of which comprises a connected cluster of factors; that is, university funding, enrolment and staffing.[6] Common to all three scenarios is an assumption that the long-term growth rate of the economy is 3.5% per annum. This is divided into a 1.75% per annum increase in real incomes and (implicitly) a 1.75% per annum growth in employment.[7]

The first scenario assumes an improvement in secondary school throughput alongside the maintenance of the current rates of transition

5 DHET (2013) *White Paper for Post-school Education and Training: Building an expanded, effective and integrated post-school system.*

6 Universities are funded in three ways: by state grants, by tuition fees and by 'third-stream' income which comprises all other forms of revenue. In addition, the state makes grants to the National Student Financial Aid Scheme.

7 The real growth in wage income between 2000 and 2012 is reported by the Reserve Bank as 1.78% per annum.

from the National Senior Certificate (NSC) to first-time enrolment in higher education.[8] A funding envelope is defined by assuming that state grants to universities will be a constant proportion of gross domestic product (GDP). The projected costs of the first scenario are compared with the funding envelope. The comparison leads to the conclusion that the first scenario will lead to increasing shortfalls in state funding as far as both grants to universities and allocations to NSFAS are concerned. Such funding shortfalls will have a number of negative consequences, such as limiting the access to higher education of prospective academically deserving students, undue pressure on universities in maintaining academic standards, and downward pressure on student throughput rates arising from potentially insurmountable difficulties in maintaining acceptable levels of teaching and learning support.

This outcome of the first scenario leads to the development of two further scenarios. The second scenario can be accommodated in the funding envelope, but it leads to an unduly slow growth rate in student enrolments at universities, which would, in turn, have unacceptable social and economic consequences for the country.

A compromise third scenario is then defined, which entails an increasing share of GDP being allocated to higher education, a rising gross enrolment ratio, but greater competition for university places among those who obtain a National Senior Certificate qualifying them to embark on study at a university.[9]

The three scenarios constitute the heart of the analysis in Section 3 and the study as a whole. Based on the analysis of these three scenarios, the capacity of the state to steer the higher education system through the challenges of the next ten years is discussed.

Homer relates the story of Odysseus sailing home from Troy. At a certain point, he encounters a narrow and hazardous sea lane. On one side is Scylla, a six-headed monster that would swoop down and consume sailors if ships passed on its side of the lane. On the other side is Charybdis, a pair of clashing rocks and a whirlpool that would suck in ships and destroy

8 Details of the improvement are set out in the Appendix.

9 The use of UNESCO's indicator of participation, the Gross Enrolment Rate or GER, i.e. the total headcount enrolled in some form of higher education over the national population of 20-24 year-olds of the population, has become widespread. CHE (2015) *VitalStats*. Public higher education 2013, p. iii.

them. Odysseus chose the Scylla route, reckoning that the loss of six sailors was not as bad as the termination of the entire enterprise. By contrast, this study looks for a middle passage, just out of the reach of both Scylla (very large numbers of students, but inadequate funds to provide high level university education) and Charybdis (adequate funds to maintain a high standard of academic services but rendered to a very much smaller number of students). As is the case with most compromises, the choice of a middle passage, as will be seen later in the study, will require mind-shifts and attitudinal adjustments from the various constituencies and stakeholders relevant to higher education.

Spending an increased proportion of GDP on higher education as foreseen in Scenario 3's 'middle passage' would need to be accompanied by cost-saving measures and more prudent forms of expenditure within higher education. Section 4 considers the steering capacity of the state and the adaptability of the current system. Section 5 considers four possible sources of cost saving: a shift in the balance of enrolments to distance education, which is here assumed to be less costly over the long term than traditional forms of 'face-to-face' education; leveraging higher levels of resources from the private sector; expanding cost-saving technological innovation; and the introduction of reform in curriculum structure as means of maximising the effective use of academic resources. Implications for universities and the Department of Higher Education and Training are drawn from the analyses as a whole. Section 6 draws a number of overall conclusions based on the previous analyses.

Throughout, student enrolments are defined as headcount enrolments rather than full-time equivalent student enrolments. In the university funding model, teaching input units are calculated using full-time equivalent student enrolments in a so-called funding matrix, which is discussed in more detail later.[10] Teaching input units are assumed to be a constant proportion of headcount enrolments.

10 Since part-time students are less demanding of teaching resources than full-time students.

2. Historical overview

Key developments affecting funding since 1994

There have been four main developments affecting funding over the last twenty years.[11]

(i) Mergers of universities and technikons into a unified higher education system

As discussed in detail in the Overview, the South African higher education system has undergone major reorganisation since 2004. There are now eleven traditional universities, six comprehensive universities and six universities of technology, plus a further three new universities: one in the Northern Cape, one in Mpumalanga, and one focused on the Health Sciences established from the former Medical University of South Africa (Medunsa) in Gauteng.

This restructuring of the higher education institutional landscape has had two implications for funding. First, the previous funding system which was in force until 2004, differentiated between universities and technikons, whereas the new funding system, fully operational since 2007, treats all universities in terms of one set of rules, except in the case of research output norms set by the DHET. Secondly, earmarked funding was implemented to steer the system, with allocations intended to assist with the costs of merging and other developmental ends. Allocations from earmarked funding in many cases involved the submission of detailed project proposals to the DHET. This requirement highlighted serious managerial and administrative shortcomings in some universities that were often also those most in need of such funding. As a consequence, a proportion of the funding in this category was not fully taken up by institutions, meaning that the problems to be resolved by such funding allocations in many cases remained. The differences between block grant funding and earmarked funding are discussed later in greater detail.

11 See DHET (2013) *Report of the Ministerial Committee for the Review of the Funding of Universities.*

(ii) Reform of the way in which universities are funded

The South African Post-School Education (SAPSE) funding formula, introduced in the 1980s and now replaced, essentially had a 'follow the student' approach. Funding allocations to universities were based on student enrolment numbers of two years earlier, as well as course success rates. There was a difference in funding level between students in the natural sciences and the humanities, and the formula contained several so-called cost components graduated partly on the basis of historical cost. The formula generated an entitlement for each university and technikon which was then brought into alignment with available state funds by means of an 'a-factor'; this represented the proportion of entitlements that could actually be funded. Attempts were made to keep the a-factors constant across universities and technikons. However, this became increasingly difficult as the provision for growth in student enrolments in the SAPSE formula made the formula allocations sensitive to unbridled increases in student enrolments at some universities, which necessitated lower a-values for those.[12]

In 2004, the SAPSE system was replaced with a 'state steering mechanism' approach. University funding was to be based on block and earmarked grants. Block grants have four components: teaching input (based on enrolments); teaching output (based on graduations); research output (based on approved publications and advanced postgraduate research degree graduates) and institutional factors (based on institution size and proportion of historically-disadvantaged student numbers). Block grants are consolidated into a single transfer that can be used for any legitimate university purpose. Earmarked funds, on the other hand, must be spent on the purposes for which they are designated. In recent years, earmarked provision has been made for interest and redemption of government loans, infrastructure, teaching development, research development, foundation courses, multiple campuses in the case of some newly-merged institutions, clinical training of health professionals and veterinary science.

The bulk of the block grant (67% in 2012) is made up of the teaching input

12 By contrast, the new funding system distributes available state funds by a system of 'funded places'. Universities can admit more students than there are funded places, but no teaching input grant is allocated for the excess.

grant. The teaching input grant is calculated using a funding grid which has subject matter categories along one axis and levels of qualification registered for along the other. The grid assigns a funding weight to each cell and every year each university is offered funding for a certain number of places (full-time student equivalents) distributed across the cells in the funding grid. This offer, negotiated between universities and the DHET, constitutes the heart of the steering mechanism. The teaching output, research output and institutional factor grants are based on historical data.

(iii) The National Student Financial Aid Scheme (NSFAS)

This scheme has its origins in the Tertiary Education Fund for South Africa (TEFSA), started in 1991 with a capital of R25 million. In 1999, the National Student Financial Aid Scheme Act was passed and NSFAS became the successor organisation.[13] Funds awarded by NSFAS have expanded massively during the past number of years: in 2012, R5 871 million was awarded to students at universities and a further R1 822 million to those in further education and training colleges.[14] At the outset, TEFSA was purely a loan scheme, but soon bursary elements emerged, both in the form of rebates for academic success and bursaries for specific purposes. In 2012, 53% of funds awarded by NSFAS took the form of bursaries.

In 2012, NSFAS had the following components:

- Generally available awards
- A final-year programme rebate, consisting of 100% rebates of final-year loans to students who completed their qualification
- An allocation for teacher education, funded by the Department of Higher Education and Training
- An allocation for disabled students
- An allocation from the National Skills Fund
- An allocation from the South African Institute of Chartered Accountants
- The Funza Lushaka scheme, for training teachers in under-supplied subjects, funded by the Department of Basic Education
- An allocation from Sectoral Education and Training Authorities (SETAs)

13 DHET (1999) *National Student Financial Aid Scheme Act.*

14 In 1992, TEFSA awarded loans to 10 828 students and in 1997 to 28 076 students. In 2007, NSFAS awarded loans to 57 837 students and in 2012 to 199 479 students. In 2013, NSFAS allocations increased further to R6 729 million to university students and R1 953 million to TVET students (NSFAS (2013) *Annual Report, 2013;* NSFAS (2014) *Annual Report, 2014*).

- A range of smaller schemes, some of which are funded by other government departments.[15]

(iv) The funding of foundation courses in extended curriculum programmes

These date back to the early 1980s when racial segregation in university enrolments started to be relaxed. They were a response, chiefly by institutions designated as 'white' under apartheid, to a situation where students' knowledge and skills on entry were diverse as a result of the segregated school system. Initially, they were funded primarily by donations from external funders, supplemented in some cases by internal university allocations. The end of apartheid has not abolished inequality in school quality despite much greater resource inputs – in general, there is still a large gap between the preparedness for higher education of learners from top-quintile schools and those from the remainder, although the racial contours of inequality have been softened somewhat. Accordingly, most universities have found it necessary to continue – and in fact intensify – a variety of forms of academic support to students aimed at mitigating the 'articulation gap' between schooling and the demands of higher education.

Foundation courses, forming an integral element of planned extended curricula, have constituted the major strategy for addressing the articulation gap. The state has accepted responsibility for funding them, and an earmarked allocation of R235 million was made for them in 2014, intended to enable about 15% of the student intake to benefit from this provision.[16] Differentials in capacity and commitment between, and even within, universities have meant that the effectiveness of this provision has been uneven across the sector.

The influence of post-apartheid transformation objectives on funding

(i) The integration and articulation objective

First, the system of apartheid-structured inequality of opportunity through a multiplicity of segregated and initially differentially-funded institutions often led to educational 'dead-ends' – points beyond which students could not progress. The post-apartheid vision has been one of co-

15 See Table 10.

16 DHET (2013) *Ministerial Statement on University Funding: 2014/15 and 2015/16.*

ordinated institutions with a high degree of articulation between different institutional and qualification types, i.e. the construction of pathways along which students could progress as far as they could and wanted to, facilitated both through the restructuring of the institutional landscape and the development of a coherent National Qualifications Framework (NQF). Articulation of this kind is as yet an imperfectly realised objective, but it has been included as a criterion for the accreditation of qualifications, and further development to ensure articulation between sectors is an ongoing project. An aspect of particular significance for the vision of the post-school sector is effective articulation between Technical and Vocational Education and Training (TVET) college programmes and higher education. The need for this is strongly emphasised in the White Paper for the post-school system.[17]

(ii) Increasing access

Secondly, high levels of poverty and socio-economic inequality have made the financing of students from poor households a necessity. NSFAS has been the primary vehicle for the dispensing of the state's obligations in this regard. In so far as it makes loans, it draws on the expected future increment of earnings from qualified graduates. Bursaries, on the other hand, inject an immediate capital transfer from the state to the individual student, until now through the university concerned. In 2011, NSFAS made 221 653 awards to students in universities, compared with a total undergraduate enrolment of 703 747. This number decreased in 2013 as NSFAS made 194 923 awards, with a total enrolment of 800 955. NSFAS awards were thus made to 31% of all undergraduate university students in 2011 and 24% in 2013.

(iii) Improving success

Thirdly, as discussed above, underpreparedness of students entering universities has been, and remains, a widespread problem. In accordance with policy on state funding for foundational provision that was introduced in 2004, foundational provision has over the last decade been integrated into 'extended curriculum programmes', which are now offered by almost

17 DHET (2013) *White Paper for Post-school Education and Training.*

all the universities. However, application of this kind of provision has been particularly challenging in institutions where the majority of the intake are poorly prepared; in these cases foundation courses, with their present limited scope, cannot be offered on a scale that can effectively address the articulation gap, and this has implications for failure rates and the overall quality and outcomes of the institution's programmes. This problem has spread to more universities as enrolments have grown across the system, leading to an increase in the proportion of underprepared students in the intake.

One solution to the problem of widespread underpreparedness has been proposed by a CHE task team: a four-year degree to replace three-year degrees as the norm, with the proviso that students may be exempted from certain modules if they demonstrate the necessary competence at the outset of their studies, enabling them to shorten their studies by up to year.[18] The task team's study concludes that the proposed curriculum structure would increase retention in the system and, by improving pass rates, would increase graduation rates. The projections show that, if the forecast benefits of mitigating the articulation gap are realised, the resulting improvement in efficiency will reduce the cost per graduate, despite the costs of the additional provision required. This would be achieved because currently the majority of the intake (some 70%) are taking an additional one or more years to graduate, or are not graduating at all, and the state is having to bear the high costs of extensive repeating of courses and other forms of inefficiency.[19]

The *Report of the Ministerial Committee for the Review of the Funding of Universities* was released in early 2014. This report contained many recommendations for change in the details of state funding, but concluded that the overall system was sound.[20] The Minister has not yet introduced formal proposals for changes to the existing funding model emanating from this Review. As will be evident later, this study concurs with the finding that the overall funding system for universities now in place has been a sensible one.[21]

18 CHE (2013) *A proposal for undergraduate curriculum reform in South Africa: The case for a flexible curriculum structure.*

19 The report estimates that, assuming the current student intake, a four-year curriculum would increase total enrolments by 16% because of increased retention, creating upward pressure on the block grant to universities, but that it would improve graduate output by 28% (CHE (2013) *A proposal for undergraduate curriculum reform in South Africa*, p. 22).

20 Such details are not contemplated in this study.

21 See section entitled "The steering capacity of the state and the adaptability of the current system".

Historical outcomes and constraints

Table 2 provides a snapshot of the highest level of education among 29-year olds in 2011 in South Africa, 29 being the age by which students in higher education could be expected to have completed at least a first degree. In this table, an entry does not necessarily mean that all the persons indicated successfully completed that year of study, but merely that they had been educationally active at that level. Some could be expected to go on to undertake higher level qualifications.

Table 2: Highest level of educational activity reported by 29-year olds in South Africa, 2011

Less than Grade 9	168 047
Grade 9	60 305
Grade 10	96 451
Grade 11	139 082
Grade 12	343 102
NTC 1-3	7 586
NTC 4-6	9 494
Certificate/diploma with less than Grade 12	5 127
Certificate with Grade 12	22 222
Diploma with Grade 12	27 254
Higher diploma	21 838
Post higher diploma	2 735
Bachelor's degree	20 533
Bachelor's degree and postgraduate diploma	5 188
Honours degree	9 370
Higher degree	4 437
Other	3 492
Unspecified	18 016
Total	**964 279**

Table 3: Summarising the data above leads to the following aggregated distribution

	Number	Proportion (Per cent)
Up to completed primary	228 352	23.70%
Incomplete senior secondary	235 533	24.40%
Grade 12	343 102	35.60%
Technical (NTC 1-6)	17 080	1.80%
Certificate/diploma with less than Grade 12	5 127	0.50%
Higher education	113 577	11.80%
Other and unspecified	21 508	2.20%
Total	**964 279**	**100%**

Source: 2011 Census, interactive tabulation

The following observations are pertinent:

- The number of people who have not progressed beyond Grade 9, which marks the end of the compulsory phase of education, is substantial, and is double the number with a higher education qualification.
- The number of people who reached Grades 10 and 11 but not Grade 12 is also substantial. This clearly indicates a problem with progression through senior secondary school, as is evidenced by the high dropout rates during the senior secondary school phase (Grades 10-12) as shown by numerous other studies.
- Despite efforts to improve enrolments in the existing further education and training (FET) colleges and other institutions offering technical qualifications, the numbers with secondary-level and further education technical qualifications (NTC 1-6) are small, making up only 1.8% of the total.
- The number of 29-year olds who reached Grade 12 is large, making up 35.6% of the total, and is triple the number with higher education. This comparison could, however, be misleading since not all those indicating Grade 12 as their highest educational level would actually have written the (National) Senior Certificate examination and, in addition, not all who take this examination manage to pass, or to pass well. It is therefore estimated that not many more than half of those indicating Grade 12 as their highest educational level would be eligible to go on to higher education.

However, a trend towards higher school retention and pass rates for the NSC examinations, coupled with low absorption rates into formal economic activity for young South African school-leavers, points to considerable latent pressure on higher education resources. The FET/TVET sector is becoming an increasingly strong competitor for resources and, as is evident in Table 2 and as set out in the 2013 *White Paper for Post School Education and Training*, it is desirable to expand technical education, especially during the senior secondary and lower higher education phases. Such expansion would increase demand for higher education. Removing undesirable constraints, such as resolving imperfections in the credit market and reducing the existing high unemployment levels, would further increase the demand and pressure on higher education resource provision.

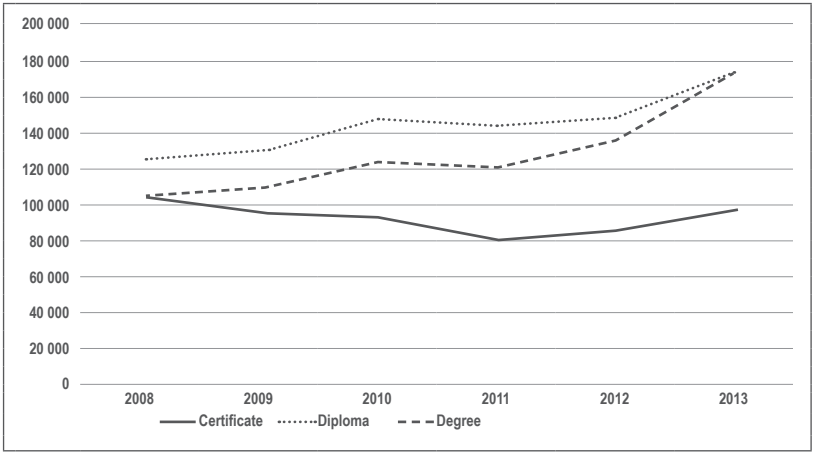
Key pressures affecting higher education

(i) Senior secondary school output

The expected increase in the number of learners arriving at the gate of the higher education system will exacerbate the pressure for access. As this chapter's focus is higher education, the modelling of the performance of the senior secondary system which informs the analyses here, is placed in an Appendix for reference. Figure 1 graphs performance in the National Senior Certificate since its introduction in 2008. In this graph, trends are depicted in NSC passes which provide admission to:

- higher education study at certificate level, which, despite a decrease during the middle of the period 2008-2013, reverted in 2013 more or less to where the figures for 2008 were;
- higher education study at diploma level, which shows a steady upward trend during the period 2008-2013; and
- higher education study at degree level, which shows an accelerated increase for this period compared with eligibility for diploma study and with eligibility for certificate-level study.

Figure 1: National Senior Certificate passes enabling continuation to certificate, diploma and degree studies



Source: DBE National Senior Certificate technical reports

Proportionally more holders of the NSC were thus eligible for degree study as opposed to only diploma and certificate study at a university in 2013 than was the case in 2008.

(ii) University intake

Table 4 sets out the undergraduate intake into South African public universities by type of qualification. The proportion of the intake entering certificate and diploma programmes fluctuated between 40 and 45% of total first-year enrolment between 2008 and 2011. However, the proportion of NSC passes allowing study for higher education certificates and diplomas varied between 65 and 68% between 2008 and 2010. This indicates that a relatively small fraction of school-leavers with certificate and diploma passes gained entry to higher education, in contrast with the position of holders of Bachelor passes. The 'relative probability' column of Table 4 computes the probability that the holder of an NSC pass for degree study will enter higher education compared with the corresponding probability for holders of NSCs for higher certificate and diploma studies. The result is stark and shows that holders of NSC passes for degree study are nearly three times more likely to go on to higher education than holders of NSC passes for certificate and diploma study, who are also entitled to do so. This indicates a lack of articulation between the mix of qualifications offered in the post-school sector and the new NSC, leading to unfulfilled expectations among many holders of National Senior Certificates.[22]

Table 4: First-time undergraduate entrants, 2008-2013

Year	Certificate/ Diploma	Degree	1st-time cert&dip entrants/ cert&dip NSC passes previous year	1st-time degree entrants/ Bachelor NSC passes previous year	Relative probability[23]
2008	68 921	83 047			
2009	70 106	94 472	30.1%	88.1%	2.93
2010	70 485	98 457	31.4%	89.8%	2.86
2011	71 967	107 037	30.3%	84.7%	2.79
2012	67 946	101 821			
2013	64 466	93 933			
Averages	1.5% annual growth	4.6% annual growth	30.6%	87.5%	

Source: HEMIS data, extracted annually

22 These estimates are only approximate, since not everyone goes immediately from school to university and mature age entrance to university is possible. Despite this, the overall trends would be reliable enough to support the conclusions made here. The continuation rates in the fourth and fifth columns of Table 4 are also only approximations. This is the case since it is assumed in Table 4 that learners with NSC passes for degree study will in fact register for degrees only, even though they are entitled to register for diploma and certificate study in higher education as well. (Equally, those with NSC passes for diploma study are entitled to register for certificate study at a university). Accordingly, the percentage of those with NSC passes for degree study going on to university may be higher than in the fourth column of Table 4 and the percentage of NSC diploma and certificate passes going on to university may be lower than in the fifth column of Table 4.

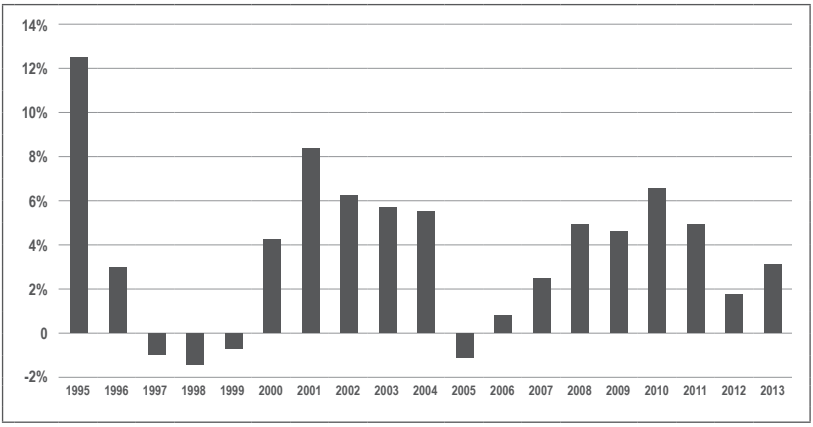
23 The relative probability is the ratio of degree continuation rate to the diploma/certificate continuation rate.

(iii) Enrolments

Figure 2 sets out annual student enrolment growth rates between 1995 and 2013.

A clearly discernible and consistent trend in student enrolment growth rates is not immediately apparent from Figure 2. However, the period 2008 to 2011 witnessed average student enrolment growth rates for the whole higher

Figure 2: Enrolment growth rates 1995-2013



Source: SAPSE 1995-1999 & HEMIS 2000-2013, extracted annually

education system of close to 5% and higher. Such growth rates are difficult to sustain while maintaining academic standards and academic services of high quality without a commensurate increase in resource provision. That this has not been the case is evident from the deteriorating staff-student ratio for universities during the past number of years.

Table 5 sets out student enrolments in 2001 and between 2007 and 2012 for various types of qualifications. Enrolments at universities other than UNISA, and UNISA student enrolments are first given separately and thereafter in combined format. At the end of each of these three sets of data, the average annual student enrolment growth for the period 2007-2012 is given.

Table 5: Headcount student enrolments in 2001 and 2007-2012 in various qualification types

Set A	Contact universities						
	Dip/Cert 1-2 year	Dip 3 year	Degree 3 year	Degree 4 year	Under-graduate	Post-graduate	Total
2001	27 416	109 111	99 271	120 741	356 539	80 762	437 301
2007	50 280	139 216	125 605	110 977	426 078	86 753	512 831
2008	51 220	143 407	126 522	114 309	435 458	91 421	526 879
2009	50 660	153 035	133 324	127 053	464 072	99 720	563 792
2010	45 741	160 421	141 547	134 409	482 118	104 903	587 021
2011	40 996	163 158	146 981	141 224	492 359	114 848	607 207
2012	31 839	165 498	152 144	148 894	499 538	110 832	616 061
Average annual growth rate							**3.7%**

Set B	UNISA						
	Dip/Cert 1-2 year	Dip 3 year	Degree 3 year	Degree 4 year	Under-graduate	Post-graduate	Total
2001	14 601	22 482	73 328	19 953	130 363	17 049	147 412
2007	13 098	52 182	99 481	33 974	198 735	23 644	222 379
2008	19 625	57 058	104 074	37 183	217 940	27 201	245 141
2009	26 915	48 756	102 902	41 774	220 347	29 027	249 374
2010	20 170	59 616	109 718	55 260	244 764	33 707	278 471
2011	20 208	65 552	115 123	73 505	274 388	33 084	307 472
2012	30 830	53 113	112 964	86 428	283 335	38 644	321 979
Average annual growth rate	18.7%	0.4%	2.6%	20.5%	7.4%	10.3%	7.7%

Set C	ALL		
	Undergraduate	Postgraduate	Total
2001	486 902	97 811	584 713
2007	624 813	110 397	735 210
2008	653 398	118 622	772 020
2009	684 419	128 747	813 166
2010	726 882	138 610	865 492
2011	766 747	147 932	914 679
2012	781 710	149 476	931 186
Average annual growth rate	4.6%	6.2%	4.8%

Source: HEMIS data

These data sets indicate that the average annual growth rate in student enrolments for the entire higher education system for 2007 to 2012 amounted to nearly 5%, as was already evident from Figure 2. They also indicate that while contact student enrolments in the period 2007 to 2012 grew by an average annual figure of 3.7%, the corresponding figure

for UNISA is 7.7%. This could be due to a number of factors such as cost and accessibility, but it certainly is an indication that UNISA is increasingly providing for expansion in the system that cannot be accommodated at the same rate by the contact institutions.

(iv) Student progression

Table 6 sets out the cohort progression rates for 2006 first-time entrants (2005 entrants in the case of UNISA) into three-year degrees, four-year degrees and three-year diplomas, with UNISA and other institutions reported separately.[24]

The final dropout rates at the contact universities, Column 6, and at UNISA, Column 8, can be compared with an OECD average of 30%.[25] However, a major contextual difference is that OECD countries have participation rates three to four times higher than South Africa's, so a very much higher proportion of the population in the OECD is succeeding in higher education.

From this Table, it is evident that in terms of graduations and accompanying dropouts, the South African higher education system suffers from significant output inefficiencies. The factors contributing to the high dropout figures are insufficiently researched, although the *Proposal for undergraduate curriculum reform: The case for a flexible curriculum structure* provides some coverage of these.[26] A range of factors beyond the control of higher education, such as: the lack of meaningful career and study guidance in our school system; the poor quality of teaching offered at many schools, especially in socio-economically deprived areas, which results in severe levels of underpreparedness for university level studies among large numbers of students; financial hardships suffered by many students despite being recipients of NSFAS financial aid; and the demands of independent study at university level contribute to these high dropout rates. In addition, there are few meaningful alternatives to university study, and these were further reduced with the incorporation of teacher education colleges into universities in the late 1990s and early 2000s.

24 Dropout rates may be biased upwards, since some students not graduating in 2011 (or 2012 in the case of UNISA) may have re-registered in the following year. This bias is more marked in the case of UNISA, where stopouts are common. Accordingly, UNISA has adopted a methodology of its own. See Barnes (2013) 'The context of the DHET 2006 cohort retention results for UNISA' (unpublished paper).

25 OECD (2010) 'How many students drop out of tertiary education?' in *Highlights from education at a glance 2010.*

26 CHE (2013) *A proposal for undergraduate curriculum reform in South Africa.*

Table 6: Cohort progression rates – 2006 first-time entrants to contact universities and 2005 first-time entrants to UNISA

Cumulative percentages	Year							
	1	2	3	4	5	6	7	8
Three-year degrees								
Contact universities								
Graduates			28.9%	46.7%	54.5%	57.8%		
Dropouts	21.1%	29.0%	34.3%	37.4%	38.7%	42.2%		
UNISA								
Graduates			1.7%	4.7%	8.2%	10.9%	12.7%	14.0%
Dropouts	38.1%	54.3%	62.8%	66.9%	69.1%	71.7%	73.9%	86.0%
Four-year degrees								
Contact universities								
Graduates				35.2%	49.2%	54.6%		
Dropouts	19.7%	30.1%	35.6%	38.5%	40.2%	45.4%		
UNISA								
Graduates				3.9%	8.1%	11.5%	14.2%	16.1%
Dropouts	33.5%	50.6%	59.3%	63.8%	66.6%	68.8%	71.1%	83.9%
Three-year diplomas								
Contact universities								
Graduates			17.5%	31.0%	39.0%	42.9%		
Dropouts	26.2%	37.8%	46.2%	50.3%	51.7%	57.1%		
UNISA								
Graduates			0.2%	0.8%	1.7%	2.7%	3.8%	4.6%
Dropouts	64.7%	75.8%	82.3%	85.5%	86.6%	87.5%	89.4%	95.4%

Source: Sheppard tabulations from HEMIS data for CHE 2013

Until recently, not all universities were devoting adequate resources and attention to proven academic support interventions for students. While such interventions may lead to improved student retention figures and improved student graduation rates in time, the current indications are that without a systemic intervention, poor throughputs are likely to remain.

(v) Graduates

Table 7 sets out the number of graduates in each year from 2007 to 2012. As in the previous case, the data is first presented for contact universities, then for UNISA, and finally in combined format. The figures at the end of each of these data sets reflect average annual growth rates in graduates for the period 2007 to 2012.

The number of awards of certificates, diplomas and degrees at all levels increased at an average rate of 4.7% per annum for contact institutions, 14.7% for UNISA, and 6.0% for the entire university system. These figures confirm that UNISA graduates have increased at a considerably faster rate than non-UNISA graduates, reflecting a rising share of UNISA enrolments in total enrolments, and overall rapid growth in the system in the last decade, increasing pressure on the higher education system.

Table 7: Graduates, 2007-2012

Set A	Contact institutions					
	Dip/Cert 1-2 year	Dip/Cert 3 year	Degree 3 year	Degree 4 year	Post-graduate	Total
2007	14 895	24 547	24 302	22 121	26 412	112 277
2008	14 954	24 601	24 961	23 040	27 763	115 319
2009	16 145	25 671	24 510	24 940	30 913	122 179
2010	15 352	25 849	25 726	28 534	31 791	127 252
2011	15 399	28 193	26 624	28 233	35 368	133 817
2012	16 578	29 624	28 524	29 184	37 330	141 240
Average annual growth	2.2%	3.8%	3.3%	5.7%	7.2%	4.7%

Set B	UNISA					
	Dip/Cert 1-2 year	Dip/Cert 3 year	Degree 3 year	Degree 4 year	Post-graduate	Total
2007	2 115	1 862	4 157	1 712	4 495	14,341
2008	3 893	2 642	4 448	2 145	4 795	17,923
2009	8 223	1 541	5 275	2 464	5 172	22,675
2010	7 070	3 613	5 725	1 314	8 351	26,073
2011	5 665	3 755	6 031	3 659	7 698	26,808
2012	6 099	3 814	6 354	4 073	8 193	28,532
Average annual growth	23.6%	15.4%	8.9%	18.9%	12.8%	14.7%

Set C	ALL					
	Dip/Cert 1-2 year	Dip/Cert 3 year	Degree 3 year	Degree 4 year	Post-graduate	Total
2001	12 237	18 999	21 667	17 002	23 413	93 318
2007	17 010	26 409	28 459	23 833	30 907	126 618
2008	18 847	27 243	29 409	25 185	32 558	133 242
2009	24 368	27 212	29 785	27 404	36 085	144 854

Set C (continued)	ALL (continued)					
	Dip/Cert 1-2 year	Dip/Cert 3 year	Degree 3 year	Degree 4 year	Post-graduate	Total
2011	21 064	31 948	32 655	31 892	43 066	160 625
2012	22 677	33 438	34 878	33 257	45 523	169 773
Average annual growth						
2001-2007	5.6%	5.6%	4.6%	5.8%	4.7%	5.2%
2007-2012	5.9%	4.8%	4.2%	6.9%	8.1%	6.0%

Source: HEMIS data

Table 8: Block and earmarked grants to universities and NSFAS allocations for 2007-12 in thousands of Rand, current prices[27]

	Block grant	Earmarked grant	Subtotal	NSFAS	Total
2007	10 100 192	2 956 655	13 056 847	1 098 696	14 155 543
2008	11 451 502	2 827 888	14 279 390	1 306 383	15 585 773
2009	12 700 520	2 794 033	15 494 553	1 426 668	16 921 221
2010	14 532 751	3 543 917	18 076 668	1 565 597	19 642 265
2011	16 386 794	3 392 659	19 779 453	2 616 390	22 395 843
2012	17 433 861	3 646 820	21 080 681	3 377 902	24 458 583
Annual increase					
Nominal	11.5%	4.3%	10.1%	25.2%	11.6%
Real	5.4%	-1.5%	4.0%	18.3%	5.4%

Source: DHET, *University State Budgets 2004-12*, Section 2, adjusted for consistency of definition.[28]

Funding: block and earmarked grants to universities

Funding is a key factor determining the possibilities in higher education. Table 8 sets out block grants and earmarked funding to universities since 2007.[29]

The share of state allocations to higher education dropped slightly between 2007 and 2008, but it has since risen.

If allocations to NSFAS are excluded, block grants have constituted an increasing proportion of total grants to universities in recent years, moving from 77.4% in 2007 to 82.7% in 2012. Earmarked grants have declined slightly in real terms. This follows since infrastructural grants are not

27 The block grant is taken as the sum of the teaching input, institutional, teaching output and research output grants. All other grants are regarded as earmarked. Current prices refer to actual prices in any given year, and are used to calculate nominal growth rates. Constant 2013 prices use the prices in 2013 to value items in all other years. Constant prices strip out inflation and are used to calculate real growth rates.

28 The 2012 definition of the block grants was used throughout.

29 The data for earmarked grants includes allocations for infrastructural renewal which should, together with NSFAS allocations, be excluded from the earmarked allocations. However, it could be argued that to obtain an accurate picture of block grant versus earmarked funding, all allocations that are earmarked for a specific purpose in higher education and over which a university council has no discretion, constitute earmarked funding.

normally made available annually but in intermittent tranches which can cover 2 to 3 years at a time. The real increase in NSFAS allocations has been rapid, especially between 2010 and 2012.

The average real growth of 4.0% per annum over the period for grants to universities (i.e. NSFAS excluded) has had to cater for the growth in the system, which from Table 5, amounted to an average annual increase in student enrolments of nearly 5%. The per unit growth in the four grants making up the total block grant is set out in Table 9.

Table 9: Block grant components of the funding model for 2007- 2012

	Teaching inputs				
	Units	**Grant R '000**	**Grant per unit**	**Nominal growth per unit**	**Real growth per unit**
2007	876 259	6 772 475	7 729		
2008	905 000	7 746 610	8 560	10.8%	5.6%
2009	940 000	8 497 186	9 040	5.6%	-1.4%
2010	983 663	9 792 984	9 956	10.1%	2.1%
2011	1 027 326	10 909 568	10 619	6.7%	2.3%
2012	1 071 824	11 658 601	10 877	2.4%	-2.4%
Average growth	**4.1%**				**1.2%**

	Research outputs				
	Units	**Grant[30] R'000**	**Grant per unit**	**Nominal growth per unit**	**Real growth per unit**
2007	14 547	1 236 836	85 026		
2008	15 243	1 347 782	88 418	4.0%	-0.9%
2009	15 015	1 540 604	102 603	16.0%	8.4%
2010	15 679	1 836 716	117 144	14.2%	5.8%
2011	17 429	2 224 568	127 638	9.0%	4.5%
2012	18 659	2 226 579	119 331	-6.5%	-11.0%
Average growth	**5.1%**				**1.1%**

	Institutional factors		
	Grant R'000	**Nominal growth**	**Real growth**
2007	705 298		
2008	806 746	14.4%	9.0%
2009	884 912	9.7%	2.4%
2010	849 701	-4.0%	-11.0%
2011	946 582	11.4%	6.8%
2012	1 011 573	6.9%	1.8%
Average growth			**1.6%**

Source: DHET, University State Budgets 2004-12, Section 3

Table 9 indicates that the real growth in unit allocations was moderate (and negative in the case of teaching output). Financing system expansion in the form of providing for increased student enrolments accounts for most of the real increase in grants shown in Table 8. Significantly, research outputs increased by an average of 5.1% per annum, but research output funding only increased in real terms by an average of 1.1% per annum. This could be indicative of a disjuncture between policies of government departments such as DHET and the Department of Science and Technology (DST), and the effective support of these policies through targeted implementation measures.

The National Student Financial Aid Scheme: universities

Student financial aid is an increasingly important factor to consider. Table 10 sets out key statistics of NSFAS funding that is allocated to qualifying students.

Table 10: NSFAS: universities, 2009-2012 (Aggregate values in thousands of rand: Current Prices)

Set A	New grants to NSFAS[30]	Awards	Number of awards	Growth in number of awards	Average Award in Rand	Nominal growth in the average award
2009	2 205 953	2 818 220	135 862		20 743	
2010	2 516 221	3 343 531	148 873	9.60%	22 459	8.30%
2011	3 875 159	4 833 866	221 653	48.90%	21 808	-2.90%
2012	5 579 188	5 871 490	216 028	-2.50%	27 179	24.60%
Average				**16.70%**		**9.40%**

Set B	Recoveries	Bursaries	Per cent of awards in the form of bursaries
2009	580 129	1 277 598	45.3%
2010	704 339	1 529 453	45.7%
2011	719 435	2 521 348	52.2%
2012	296 401	3 118 515	53.1%

Source: NSFAS Annual reports, 2011, 2012 and 2013

Table 10 shows that there was a rapid increase in the number of student financial aid awards made between 2009 and 2012. There was also an uneven growth in the size of the average award, so that the average annual real increase has been in excess of 20%. This is an unsustainable rate of growth. Moreover, the proportion of awards that has taken the form of bursaries has increased significantly. Bursary allocations have risen from 0%

30 Includes grants from sources other than DHET.

in 1991 to about 25% in 2000, 45% in 2009 and 53% in 2012. As a result, income from loan recoveries is very low and, as is evident from Table 10b, fell sharply in 2012. This is most likely due to the absolving of final-year students from any loan repayments, provided that they passed.[31] This is not a sustainable situation in a context of increasing pressure on NSFAS funds. In addition, given that allocations generally cover only a portion of the full cost of study, awardees continue to be underfunded.[32]

NSFAS funds are divided into award categories. Table 11 analyses awards by category and shows that there is considerable variation in average award size across them.

Table 11: Number of awards per category

	2009	2010	2011	2012	Average size of grant in 2012
DHET					
General	106 682	109 798	126 557	99 938	R25 359
Final year programme			24 684	29 203	R37 140
Teacher allocation	3 898	4 672	5 099	4 198	R27 149
Disabled students	762	1 040	1 104	1 176	R37 867
Historical debt relief			3 521		
National Skills Fund	1 890	3 885	24 491	38 987	R22 019
SA Institute of Chartered Accountants	782	774	837	807	R40 121
SETAs				3 071	R18 404
DBE					
Funza Lushaka	9 190	10 074	8 893	11 702	R56 980
Other	12 658	18 630	26 467	26 946	R19 035
Total	135 862	148 873	221 653	216 028	

Source: NSFAS Annual Reports

In recent years, FET/TVET colleges have emerged as a substantial competitor to universities for NSFAS funds. An amount of R1.807 billion was awarded to students at FET colleges in 2012/2013, all of which took the

31 Different loans have different rules about conversion. Up to a maximum of 40% of a general loan is converted into a bursary when a student passes all of the courses they were registered for in that year. Students who apply at their institution's Financial Aid Office to be on the NSFAS Final-year Programme have their final-year loans converted into a 100% bursary if they pass their final-year courses and qualify to graduate (see www.nsfas.org.za).

32 See CHE (2014) *VitalStats. Public Higher Education 2012*, Figure 153, which indicates the average full cost of study in 2012 was R55 843.

form of bursaries.[33] This development will undoubtedly put pressure on the student financial aid available for the higher education system.

Sources of university funding

Table 12 divides recurrent funding of universities into three revenue streams, these being government subsidies (1st stream income), tuition fees (2nd stream income) and so-called 3rd stream income representing all other forms of university income.

Table 12: Sources of university funding (Current prices in thousands of Rand)[34]

	State grants	Fees	Third-stream	Total
2007	11 491 425	7 776 841	10 862 153	30 130 419
	38.1%	25.8%	36.1%	
2012	19 891 962	15 467 386	14 545 547	49 904 894
	39.9%	31.0%	29.1%	
Nominal value increase	11.6%	14.7%	6.0%	10.6%
Real annual increase	5.5%	8.4%	0.2%	4.5%

Source: DHET tabulations

The recurrent income of the universities increased at an average annual rate of 4.52% between 2007 and 2012.[35] Table 12 shows that state grants and fees increased somewhat as a share of total income between 2007 and 2012. The share of third-stream income, however, has dropped from 36% in 2007 to 29% in 2012, and aggregate third-stream income has only barely kept up with the rate of inflation. Of the third-stream income in 2010, 35.6% could be used for general purposes. The remaining 64.4% could be used only for specified purposes.

The increase in the proportion of total income made up by tuition fees from nearly 26% in 2007 to 31% in 2012 is a cause for concern. When viewed together with the decline in third-stream income during this period it appears as if universities have offset declining third-stream income by substantial increases in tuition fees, as is evident from the high real annual increase in tuition fee income of 8.4% during this period. Such increases

33 NSFAS (2013) *Annual Report*, 2013, p.71.
34 Recurrent funding only. See CHE (2014) *VitalStats*.
35 See Table A.1 in the Appendix.

will undoubtedly have a negative effect on the ability of large numbers of students to finance their studies and could result in more students dropping out of their studies for financial reasons than would have been the case in the past. A strong case can be made that universities should not seek to 'balance their books' primarily through tuition fee income, which currently appears to be the case.

A summary of the current situation

There was a sharp upward movement of 60% in the number of National Senior Certificate passes satisfying the requirements for degree study between 2008 and 2013. The corresponding increase in NSC passes for diploma study was 35%.[45] These increases have occurred as the NSC system, with its first cohort produced in 2008, has taken root.

This has put upward pressure on first-time student enrolment numbers, which increased at 4.6% per annum between 2007 and 2011. Overall student enrolment rates over the same period grew at 4.3% per annum in universities other than UNISA, and 8.4% per annum at UNISA.

The number of graduates grew at 6.1% at the same time, which is likely to be a reflection of earlier growth in the system. Even so, the supply of graduates remains tight, with low levels of unemployment among them, as the 2011 census indicates that virtually all new economically active graduates are absorbed into employment within a year of graduation.

Block and earmarked grants grew at a real rate of 4.0% per annum, which is, however, less than the student enrolment growth rate. This is indicative of increasing pressure on universities to maintain academic standards and standards in other services and functions. The number of student awards by NSFAS rose much more rapidly (16.7% per annum between 2009 and 2011) albeit unevenly, from year to year, with the average real grant size increasing by 3.5% per annum between 2009 and 2011. Such growth is unlikely to be sustainable.

In addition to the above it should be noted that the private higher education sector has grown significantly in recent years. Student enrolments are estimated to be approximately 10% or slightly more of public higher

education sector enrolments, i.e. 90 000 to 100 000.[36] Private higher education institutions receive no state funding at all, whether in the form of state subsidies or in the form of NSFAS funding for students.

3. Scenarios for the next ten years

Introduction

(i) The White Paper for Post-School Education and Training

The Department of Higher Education and Training published its *White Paper for Post-school Education and Training: Building an expanded, effective and integrated post-school system* in January 2014. It anticipates that there will be 1.6 million university students in 2030, up from 931 186 in 2011. This implies an average annual growth rate in student enrolments of 3.05%.

The White Paper makes no attempt to project the fiscal requirements of its proposals; nor are the proposals of the chapter on universities prioritised. Objectives listed in the White Paper for which new funding for universities is required, include:

- expansion of programmes in specific areas required for national needs;
- grants for three new universities;
- more foundation programmes;
- academic staff development;
- new student housing in terms of improved student housing norms;
- increase in research capacity; and
- progressively introducing free undergraduate higher education for the poor.

(ii) Purpose and interpretation of the projections

In order to assess where the system is going, or might go, projections have been constructed in this chapter for the decade from 2013 to 2023. The main purpose of projections is not to predict, but to take the various pressures on the system into account by means of plausible assumptions and so to create

36 DHET (2014) *Statistics on post-school education and training: 2012*; numbers are based on a count of figures provided in these institutions' annual reports.

a deeper sense of the structure of any funding challenges that pertain. Many of the tables in this section are projection versions of the tables depicting historical trends given earlier.

The projections shown in the tables that follow should not obscure the fact that there are substantial stochastic elements in the system such as secondary school progression rates, National Senior Certificate passes, first-time enrolments, total enrolments, graduation rates, fiscal envelopes and economic growth rates, all of which are capable of showing fluctuations from trends. Separating noise from signal in the ensuing modelling exercises is not always an easy task, and the funding system thus needs effective error correction capabilities. One such mechanism consists of the discretionary entrance criteria applied by individual universities. Another, not yet fully developed, would consist of measures to correct for initial estimates in the components of the block grant funding formulas.

The three scenarios mentioned earlier are developed below. As was indicated earlier, the first scenario assumes an improvement in secondary school throughput and maintenance of the current rates of transition from the National Senior Certificate to first-time enrolment in higher education. The funding implications of the first scenario lead to the development of the two further scenarios. The second scenario fits into an appropriate funding envelope, but it leads to an unacceptably slow growth rate in student enrolments at universities. A compromise third scenario entails an increasing share of GDP being allocated to higher education.

A first look at the next ten years: Construction of the first scenario

(i) Parameters of Scenario 1 (Scylla)

An initial ten-year projection can be carried out on the following assumptions:

- Trends in pass rates in the NSC examination as set out in the Appendix will continue.
- First-year enrolments will run at a constant 87.5% of NSC passes for degree study in the preceding year (this figure constitutes the average for 2009-11).
- The baseline for diploma/certificate enrolments will be taken as 2013,

in which first-year enrolments are assumed to be 30.6% of 2012 NSC passes for diploma/certificate study. The continuation rate of NSC passes for diploma/certificate study is assumed to rise thereafter by 1.5% per annum, so that the diploma/certificate first-year enrolment rate will be 31.1% of NSC passes for this type of study between 2013 and 2014, and 31.5% between 2014 and 2015 and so forth.

The relative probability in Table 13 below represents the rate of continuation to first-time enrolment from a Bachelor's NSC pass, divided by the rate of continuation from an NSC pass for diploma or certificate study to first-time enrolment in a certificate or diploma programme. Table 13 sets out the projected first-time enrolments and the associated relative probabilities.

Table 13: First-time enrolments 2013-2023[37]

Scenario 1	Certificates/ Diplomas	Degrees	Total	Relative probability
2013	82 987	119 041	202 028	2.54
2015	94 740	151 191	245 932	2.46
2017	98 221	169 523	267 744	2.64
2019	106 539	172 618	279 157	2.47
2021	115 526	187 025	302 551	2.45
2023	122 513	193 746	316 259	2.37
Annual growth				
2013-2023	4.0%	5.0%	4.6%	

Using first-time entrants as given in Table 13, and the cohort survival figures of Table 6, total university enrolments can be projected.[38] The initial projection yielded too few enrolled students, suggesting that the dropout figures in Table 6 may be overestimated. Adjustments in enrolments have thus been applied based on the assumptions below to achieve a more acceptable fit of projected to historical figures.

37 These figures for the annual growth in student enrolments reflect growth rates for first-time entering student enrolments only and should not be confused with the growth rates for total student enrolments discussed earlier.

38 The methodology for deriving the expected number of students given in the cohort tables constructed by Sheppard which were discussed earlier, is straightforward. Define the nth year survival rate (l_{n-1}) as the number of students remaining in the system at the end of the nth year of study (i.e. students who have neither graduated nor dropped out) divided by the size of the relevant intake (S_{t-n-1}). Then the total expected enrolment is $\Sigma\, S_{t-n-1}\, l_{n-1}$ with $l_0 = 1$. As an example, the number of students enrolled in 2012 is the number of entrants in 2007 multiplied by the five-year survival rate plus the number of entrants enrolled in 2008 multiplied by the four-year survival rate plus the number of entrants enrolled in 2009 multiplied by the three-year survival rate plus the number of entrants enrolled in 2010 multiplied by the two-year survival rate plus the number of entrants enrolled in 2011 multiplied by the one year survival rate plus the number of entrants enrolled in 2012.

Key assumptions are that the following ratios remain constant:

- One and two-year certificate/diploma enrolments to three-year diploma enrolments.
- Four-year degree to three-year degree enrolments.
- Postgraduate to undergraduate enrolments.

No changes in the performance patterns or in the quality and efficiency of the educational process are assumed. Table 14 sets out the ensuing total enrolment projections for all universities other than UNISA, and for UNISA separately, and contains historical as well as projected estimates based on the above assumptions. These are used as a basis for deriving projected subsidy and other costs.

From Table 14 it is evident that total enrolments are projected to increase by an average of 6% per annum during the period 2013 to 2023, which can be compared with the historical average annual increase in total enrolments of 4.8% for 2007 to 2012 given in Table 5. The projected enrolment patterns for 2013 to 2023 would thus require a substantial increase in funding for higher education if existing academic standards and standards of other services were to be maintained.

Using first-time entrants and the cohort graduation rates of Table 6, one can project total numbers of graduates. The initial projection yielded too few enrolled students, again suggesting that the graduation rates in Table 6 may be underestimated. Adjustments in enrolments have been made to provide a closer fit of projected to historical figures. Table 15 presents the results in which the column 'grand total' in the data for UNISA in Set B reflects the graduate totals obtained by adding the entries in Set A to the corresponding ones in Set B.

Table 14: Projected enrolments 2013 to 2023: Scenario 1[39]

Set A	Contact institutions						
	Dip/Cert 1-2 year	Dip/Cert 3-year	Degree 3-year	Degree 4-year	Subtotal Under-graduate	Post-graduate	Total
2013	21 692	166 084	162 774	156 167	506 717	118 197	624 914
2015	50 239	190 893	199 627	192 482	633 241	147 710	780 951
2017	52 084	214 545	237 980	232 531	737 141	171 946	909 088
2019	56 496	230 843	256 129	252 632	796 100	185 699	981 799
2021	61 261	250 305	269 398	265 785	846 749	197 513	1 044 262
2023	64 966	268 581	284 832	280 460	898 839	209 664	1 108 503
Average growth							
2001-2007							2.7%
2007-2013	-13.1%	3.0%	4.4%	5.9%	2.9%	5.3%	3.3%
2013-2023	11.6%	4.9%	5.8%	6.0%	5.9%	5.9%	5.9%

Set B	UNISA						
	Dip/Cert 1-2 year	Dip/Cert 3-year	Degree 3-year	Degree 4-year	Subtotal Under-graduate	Post-graduate	Total
2013	21 692	54 519	122 341	89 727	288 279	39 318	327 597
2015	24 764	62 120	145 152	125 034	357 070	48 701	405 771
2017	25 674	69 203	168 649	152 456	415 981	56 736	472 716
2019	27 848	75 512	184 768	176 411	464 539	63 358	527 898
2021	30 197	82 604	200 364	188 900	502 065	68 476	570 541
2023	32 023	88 533	211 626	197 213	529 395	72 204	601 599
Average growth							
2001-2007							7.1%
2007-2013	8.8%	0.7%	3.5%	17.6%	6.4%	8.8%	6.7%
2013-2023	4.0%	5.0%	5.6%	8.2%	6.3%	6.3%	6.3%

Set C	ALL		
	Under-graduate	Post-graduate	Total
2013	794 996	157 515	952 511
2015	990 311	196 411	1 186 722
2017	1 153 122	228 682	1 381 804
2019	1 260 639	249 057	1 509 696
2021	1 348 813	265 990	1 614 803
2023	1 428 234	281 868	1 710 102
Average growth			
2001-2007	4.2%	2.0%	3.9%
2007-2013	4.1%	6.1%	4.4%
2013-2023	6.0%	6.0%	6.0%

39 Historical estimates based on HEMIS data. Occasional students excluded. The subdivision of 2001 estimates into categories is not the same as in later years. Caution must therefore be observed in comparing categories of enrolment between 2001 and later years.

Table 15: Graduates 2013-2023: Scenario 1

Set A	Contact institutions						
	Dip/Cert 1-2 year	Dip/Cert 3-year	Degree 3-year	Degree 4-year	Subtotal Under-graduate	Post-graduate	Total
2008	14 954	24 601	24 961	23 040	87 556	27 763	115 319
2009	16 145	25 671	24 510	24 940	91 266	30 913	122 179
2010	15 352	25 849	25 726	28 534	95 461	31 791	127 252
2011	15 399	28 193	26 624	28 233	98 449	35 368	133 817
2012	16 578	29 624	28 524	29 184	103 910	37 330	141 500
2013	17 757	31 056	30 423	30 136	109 372	39 811	149 182
2014	18 003	31 091	29 934	32 982	112 010	45 132	157 143
2015	20 272	33 753	32 040	32 707	118 772	49 751	168 523
2016	20 651	36 009	37 904	36 168	130 732	54 217	184 949
2017	21 017	39 405	41 411	43 858	145 692	57 914	203 606
2018	21 515	41 957	45 453	47 151	156 075	60 478	216 553
2019	22 797	43 470	47 689	51 734	165 690	62 546	228 236
2020	23 854	44 734	48 627	53 410	170 624	64 440	235 065
2021	24 719	46 393	49 336	54 262	174 711	66 526	241 236
2022	25 290	48 432	50 758	54 807	179 287	68 578	247 865
2023	26 214	50 490	52 479	56 694	185 878	70 618	256 496
Average annual growth							
2013-2023							5.7%

Set B	UNISA							
	Dip/Cert 1-2 year	Dip/Cert 3-year	Degree 3-year	Degree 4-year	Subtotal Under-graduate	Post-graduate	Total	Grand Total
2008	3 893	2 642	4 448	2 145	13 128	4 795	17 923	133 242
2009	8 223	1 541	5 275	2 464	17 503	5 172	22 675	144 854
2010	7 070	3 613	5 725	1 314	17 722	8 351	26 073	153 325
2011	5 665	3 755	6 031	3 659	19 110	7 698	26 808	160 625
2012	6 099	3 814	6 354	4 073	20 339	8 193	28 356	169 856
2013	6 532	3 872	6 677	4 487	21 568	8 336	29 904	179 087
2014	6 623	3 569	6 012	5 637	21 841	9 289	31 131	188 273
2015	7 458	3 641	6 146	6 601	23 846	10 325	34 171	202 694
2016	7 597	3 841	6 560	7 680	25 678	11 339	37 017	221 966
2017	7 732	4 198	7 172	9 081	28 182	12 029	40 211	243 816
2018	7 915	4 517	7 928	10 225	30 585	12 726	43 311	259 864
2019	8 386	4 877	8 617	11 277	33 157	13 433	46 590	274 826
2020	8 775	5 207	9 235	12 226	35 444	13 936	49 379	284 444
2022	9 304	5 663	9 897	13 169	38 032	14 921	52 953	300 817
2023	9 644	5 850	10 183	13 556	39 233	15 308	54 541	311 037
Average annual growth								
2013-2023							6.1%	5.7%

Table 15 should be compared with the analysis performed in Table 7 on historical graduate figures. Table 7 also showed an historical average annual growth in graduates for the entire university system of 6% compared to the figure of 5.7% given above in Table 15 for 2013 to 2023. A consideration of Tables 5 and 7, and 14 and 15, shows that with an average annual growth in enrolments for 2013 to 2023 of 6% compared to the historical figure for 2007 to 2012 of 4.8%, no gains in the number of annual graduates would be achieved, and for the period of 2013 to 2023, the outputs in terms of graduates would grow only by an annual figure of 5.7%. The increases in enrolments during 2013 to 2023 are thus not matched by a corresponding increase in graduates.

(ii) The funding envelope[40]

The October 2013 *Medium Term Budget Policy Statement* projects national government spending to rise from R452.5 billion in 2013/2014 to R550.1 billion in 2016/2107 in nominal terms. Using the inflation rate in the projections, this means that real national government spending will rise by no more than 1.02% per annum over the next three years. This is due to fiscal austerity being considered necessary to prevent national debt from rising to unsustainable levels. The International Monetary Fund's (IMF) October 2013 *World Economic Outlook* projects the South African average economic growth rate to be 3.49% in 2017 and 2018, and it will be assumed that this growth rate will be maintained between 2018 and 2023. It is assumed that funding for public higher education will account for a constant proportion of GDP between 2017 and 2023.

40 The funding envelope refers here to the amount of government funding that is projected to be available for higher education over the period. All funding projections are carried out in constant 2013 prices.

Table 16: The funding envelope (constant 2013 prices in thousands of Rand)

	Block grant	Earmarked grant	Total	NSFAS new	NSFAS recovery	NSFAS awards
2013	19 313 622	4 040 029	23 353 651	6 180 267	328 334	6 508 601
2015	19 709 629	4 122 866	23 832 495	6 306 988	335 066	6 642 054
2017	20 605 550	4 310 275	24 915 824	6 593 678	350 297	6 943 975
2019	22 068 915	4 616 382	26 685 297	7 061 948	375 174	7 437 122
2021	23 636 205	4 944 228	28 580 433	7 563 474	401 819	7 965 292
2023	25 314 802	5 295 357	30 610 159	8 100 616	430 355	8 530 971
			2.74%			**2.74%**

According to these projections, the funding available for the entire higher education system, including NSFAS, will grow at an average real rate of 2.74% per annum between 2013 and 2023.

(iii) Projections of funding required under the first scenario

On the basis of an average annual economic growth rate of about 3.5%, as estimated above, the first scenario assumes that the value of the unit grants for teaching input and teaching output will rise at 1.75% per annum for the 2013 to 2023 period. This is the same as the rate of growth of individual and household income if the economic growth rate is 3.5% per annum: half of the increase in economic growth is apportioned to rising average incomes, while the other half is apportioned to expanding employment in the economy as a whole. This assumption means that university salaries will keep up with the average growth rate in average individual incomes for the country at large.

It is further assumed that:

- The unit grant for research output will remain constant in real terms.
- The number of teaching input units will grow at the rate of growth in enrolments, teaching output units will grow at the rate of growth of graduates, and research output will grow at the combined rate of teaching input and teaching output grants, since these grants together provide the primary funding for the employment of academic staff.
- The institutional grant will grow at 1.75% between 2013 and 2023, and the earmarked grant will grow at 7.5% per annum. This implies that

these components of state subvention to the universities will decline relative to the teaching input and output grants, since enrolments and graduations will rise at a faster rate under this scenario.

- NSFAS awards will rise at the same rate as enrolment growth plus 1.75% per annum.

Table 17 displays the results based on these assumptions.

Table 17: First scenario costs (constant 2013 prices in thousands of Rand)

Set A	Grant amounts required						
	Teaching inputs	Teaching outputs	Research outputs	Institutional	Earmarked	Total university grants	NSFAS Awards
Unit grant	11 498	19 974	126 143				
Annual increase							
Unit	1.75%	1.75%	0.0%				
Total grant increase				1.75%	7.5%		
2013	13 035 142	2 927 517	2 460 661	1 107 070	3 991 095	23 521 485	6 568 812
2015	16 813 699	3 430 409	3 120 651	1 146 156	4 612 209	29 123 125	8 772 093
2017	20 268 877	4 272 054	3 783 011	1 186 623	5 329 984	34 840 548	10 948 092
2019	22 926 710	4 985 411	4 302 684	1 228 518	6 159 462	39 602 785	12 820 924
2021	25 388 701	5 498 626	4 761 315	1 271 892	7 118 029	44 038 563	14 698 970
2023	27 836 314	6 047 731	5 223 262	1 316 798	8 225 772	48 649 877	16 685 030
Annual increase	7.88%	7.52%	7.82%	1.75%	7.50%	7.54%	9,77%

Set B	Shortfall		
	University grants	NSFAS	Total
2013	167 834	60 211	228 045
2015	5 290 630	2 130 038	7 420 668
2017	9 924 724	4 004 117	13 928 841
2019	12 917 489	5 383 802	18 301 290
2021	15 458 129	6 733 678	22 191 808
2023	18 039 718	8 154 059	26 193 777

Note: The shortfall is calculated on the following basis:

- **University grants**

  The shortfall here is the difference between the demand for university grants, as shown in Table 17 Set A, and the university grant funding envelope, shown in Table 16, in thousands of Rand. For example, the shortfall in university grants in 2023 is projected as 48 649 877 (the 2023 entry in the 'Total university grants' column

of Table 17 Set A) minus 30 610 159 (the 2023 entry in the fourth column of Table 16), which comes to 18 039 718 (the 2023 entry in the 'University grants' column of Table 16 Set B).

- **NSFAS**
  The shortfall here is the difference between the demand for NSFAS funding (at the current inadequate level), as shown in Table 17 Set A, and the NSFAS funding envelope, shown in Table 16. For example, the NSFAS shortfall in 2023 is projected as 16 685 030 (the 2023 entry in the last column of Table 17 Set A) minus 8 530 971 (the 2023 entry in the last column of Table 16), which comes to 8 154 059 (the 2023 entry in the NSFAS column of Table 17 Set B).

As is clear from Table 17, the first scenario is far too generous and does not contain costs sufficiently compared with the funding allocations given in the funding envelope in Table 16. Simply put: Scenario 1 is not affordable. It would have disastrous financial consequences for universities and would have a concomitant fallout with regard to academic standards and services. In terms of Homer's story of Odysseus sailing to Troy, we have encountered Scylla.

The remaining two scenarios are developed next.

The second (Charybdis) and third (middle) scenarios

(i) Overview

As noted earlier, additional scenarios have been developed to aid consideration of future growth and funding possibilities. Table 18 sets out three projections of aggregate funds required by universities in accordance with three scenarios over the period 2013 to 2023. Throughout, fees are assumed to rise at 1.75% per annum, so that they form a constant proportion of average household income.

Summary figures for the *first scenario*, the details of which have been set out above, are provided to allow for ready comparison. The first scenario assumes constant continuation rates from NSC passes to university and is based on 7.5% per annum real growth in third-stream funding. As is evident from the historical analysis of the universities' three income streams, this may not be feasible.

The *second scenario*, which is financially more conservative, grows state funding at the rate of 2.74% per annum to accord with the funding envelope set out in Table 16, and is based on a 2.5% real growth in third-stream funding.

The *third scenario* grows student enrolments at the average annual rate implicit in the White Paper goals. Enrolments are thus assumed to grow at an annual rate of 3.05% as calculated earlier. The target enrolment in 2023 is therefore 1 292 320, which would yield the White Paper's anticipated enrolment figure of 1.6 million by 2030. The third scenario is based on a 5% real growth in third-stream funding.

As is evident from the analysis of historical income patterns for universities, in all three scenarios third-stream income needs to rise considerably faster than between 2007 and 2012. This will pose a serious challenge to universities, especially to those that have not been able to achieve meaningful levels of third-stream income in the past owing to capacity constraints coupled to their geographic locations.

In the second and third scenarios, it is assumed to be inevitable that the degree continuation rate will drop in 2014. This follows since it is simply not possible for the universities to absorb the 22% increase in NSC passes for degree study between 2012 and 2013 by accommodating the same increase in their first-year intake.

(ii) Aggregate university income required under the three scenarios

The implications of the three scenarios for aggregate university income required are set out in Table 18.

Comparing the outcomes of the three scenarios with the historical analysis of income sources of universities in Table 12, it is evident that in all the scenarios, the proportion of income from government subsidies is set to increase from nearly 40% to 42% and in the case of Scenario 1 to nearly 43%. The proportion of income due to tuition fees declines slightly from 31% in 2012 to 30%, while third-stream income declines from 29% of total income in 2012 to 27%, even in Scenario 1.

Table 18: Three projections of aggregate university income required (constant 2013 prices in thousands of Rand)

Set A	First scenario: aggregate university income required				
	State grants	Annual increase	Fees	Third stream	Total
Annual increase				7.50%	
2013	23 521 485	3.93%	16 893 092	15 636 463	56 051 040
2014	26 283 520	11.74%	19 372 220	16 809 198	62 464 938
2015	29 123 125	10.80%	21 789 972	18 069 888	68 982 985
2017	34 840 548	8.50%	26 267 762	20 882 014	81 990 324
2019	39 602 785	6.31%	29 712 222	24 131 777	93 446 784
2021	44 038 563	5.51%	32 902 877	27 887 285	104 828 725
Annual growth					
2013-2023	7.54%		7.88%	7.50%	7.63%
Percentage of total income					
2013	42.0%		30.1%	27.9%	
2023	41.6%		30.8%	27.6%	

Set B	Second scenario: aggregate university income required				
	State grants		Fees	Third stream	Total
Annual increase			2.50%		
2013	23 353 651	3.18%	16 893 092	14 909 186	55 155 929
2015	23 832 495	1.02%	17 239 469	15 663 963	56 735 927
2017	24 915 824	3.49%	18 023 106	16 456 951	59 395 881
2019	26 685 297	3.49%	19 303 071	17 290 084	63 278 452
2021	28 580 433	3.49%	20 673 936	18 165 395	67 419 765
2023	30 610 159	3.49%	22 142 158	19 085 018	71 837 335
Annual growth					
2013-2023	2.74%		2.74%	2.50%	2.68%
Percentage of total income					
2013	42.3%		30.6%	27.0%	
2023	42.3%		30.6%	27.0%	

Set C	Third scenario: aggregate university income required				
	State grants		Fees	Third stream	Total
Annual increase				5.0%	
2013	23 353 651	3.18%	16 893 092	15 272 824	55 519 567
2015	24 843 970	3.14%	17 971 129	16 838 289	59 653 388
2017	27 075 609	5.66%	19 585 407	18 564 213	65 225 229
2019	30 229 188	5.66%	21 866 579	20 467 045	72 562 813
2021	33 750 075	5.66%	24 413 447	22 564 917	80 728 440
2023	37 681 051	5.66%	27 256 957	24 877 822	89 815 829
Annual growth					
2013-2023	4.9%		4.9%	5.0%	4.93%
Percentage of total income					
2013	42.1%		30.4%	27.5%	

These trends can be corroborated from Figure 3 below, which represents the evolution of required university income from 2013 to 2023 in each scenario. From Figure 3, it is clear that from the point of view of aggregate university income, Scenario 3 is indeed the 'in-between' scenario and requires appreciably less overall income than would be the case for Scenario 1.

Figure 3: Aggregate university income required by scenario

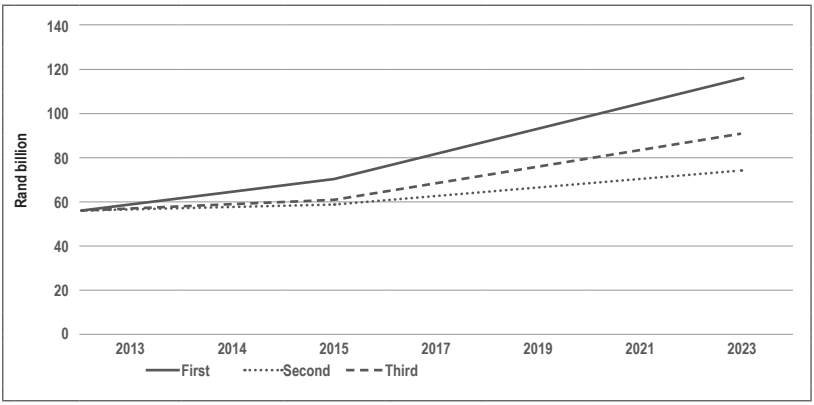
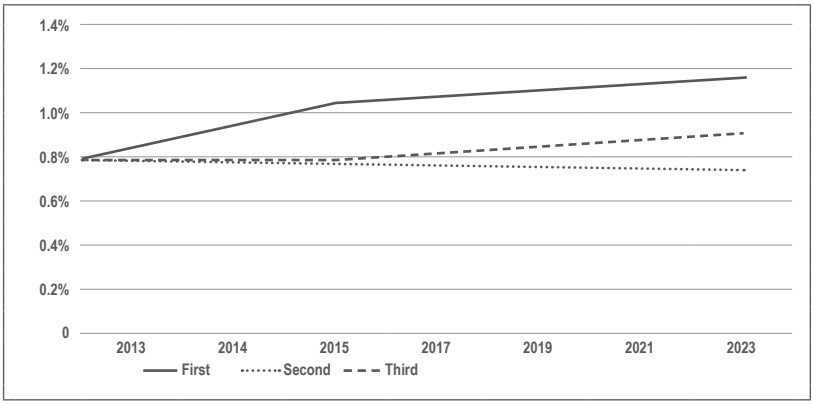


Figure 4 below represents the required evolution of state grants (block, earmarked and NSFAS) under the three scenarios. The state grants are depicted against proportion of GDP for each scenario. Scenario 1 would require a higher education state budget of close to 1.2% of GDP in 2023, which should be compared with current figures in the region of 0.8% of GDP. Scenario 3 would require a more modest increase in the proportion of GDP spent by government on higher education, amounting to about 0.9% in 2023.

An increase in the proportion of GDP spent by government on higher education tacitly assumes some form of re-prioritisation of government's spending priorities in favour of higher education, inevitably at the expense of some other existing priorities. Interestingly, Scenario 2 leads to a proportion of GDP spending on higher education in 2023 which is very close to existing levels.

Figure 4: Higher education state expenditure/GDP by scenario



(iii) Enrolments

The projected student enrolments, tuition fees and required total income per student according to the three scenarios are set out in Table 19.

Table 19: Three projections of student enrolments, tuition fees and required total income per student (constant 2013 prices)

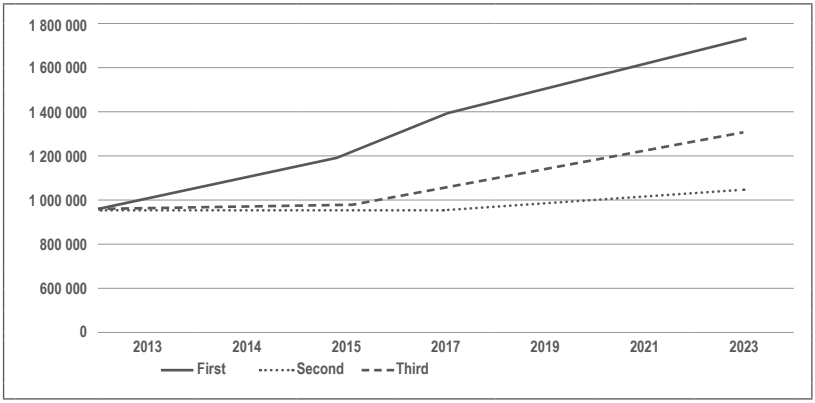
	Average fee (Rand)	First scenario		Second scenario		Third scenario	
		Students	Required income per student	Students	Required income per student	Students	Required income per student
Annual increase	1.75%						
2013	17 735	952 511	59 487	952 511	57 906	952 511	58 288
2015	18 361	1 186 722	58 854	938 893	60 429	978 740	60 949
2017	19 010	1 381 804	60 161	948 097	62 647	1 030 282	63 308
2019	19 681	1 509 696	62 868	980 801	64 517	1 111 054	65 310
2021	20 376	1 614 803	66 053	1 014 633	66 447	1 198 160	67 377
2023	21 095	1 710 102	69 715	1 049 631	70 801	1 292 094	69 512
Annual growth							
2013-2023	1.75%	6.03%	1.60%	0.98%	2.03%	3.10%	1.78%

From Table 19 it is evident that with annual tuition fee increases of 1.75%, the annual average growth income required per student in Scenario 3 falls between the corresponding values for Scenarios 1 and 2. This is mainly due to the student enrolments for Scenario 3 falling between the corresponding

values for Scenarios 1 and 2, with Scenario 1 yielding a relatively high enrolment figure and Scenario 2 a very much lower one.

The evolution of student enrolments in each of the three scenarios is graphed in Figure 5, which shows the 'middle' position of Scenario 3.

Figure 5: Student enrolments



(iv) Graduates

Table 20 sets out the projected number of graduates, from diplomas and certificates to doctorates, for each of the three scenarios, assuming no improvement or decline in efficiency in graduate production.

Table 20: Graduates 2013-2023, by scenario

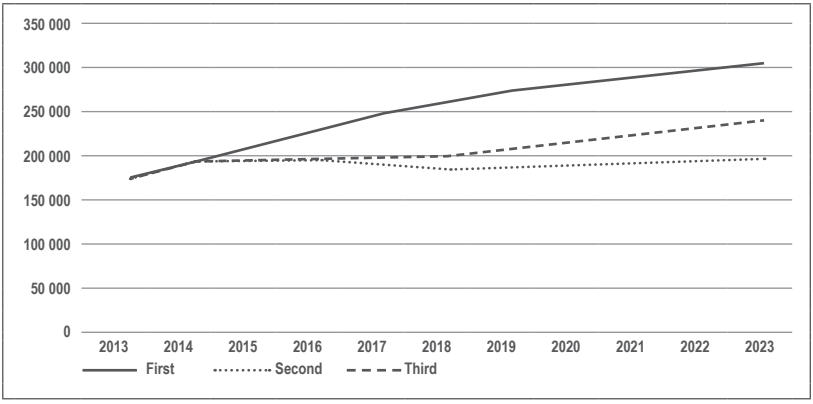
Set A	First scenario	Second scenario	Third scenario
2013	179 087	179 087	179 087
2014	188 273	188 273	188 273
2015	202 694	191 904	193 957
2016	221 966	195 534	199 641
2017	243 816	192 899	201 086
2018	259 864	186 816	198 834
2019	274 826	188 567	204 912
2020	284 444	189 241	209 963
2021	292 781	190 210	215 471
2022	300 817	192 464	222 602
2023	311 037	195 435	230 785
Annual growth			
2013-2023	5.68%	0.88%	2.57%

Set B	Third scenario graduate output by qualification level in 2023	
	2023	Percentage of output
Dip/Cert 1-2 years	26 606	11.5%
Diploma 3 years	41 803	18.1%
Degree 3 years	46 495	20.1%
Degree 4 years	52 124	22.6%
All first qualifications	167 029	72.3%
Postgraduate	63 756	27.6%
Total	**230 785**	**100%**

These estimates assume that graduation rates remain constant at the historical levels shown in Table 6. To the extent to which there is improvement or decline in throughput in relation to enrolments, Table 20 will contain under- or over-estimates. Nevertheless, in accordance with its design, Scenario 3 yields an average annual growth rate in the number of graduates of 2.6% compared to the figure of 5.7% for Scenario 1.

Figure 16 presents the information in Table 20 graphically for each of the three scenarios.

Figure 6: Graduates 2013-2023: by scenario

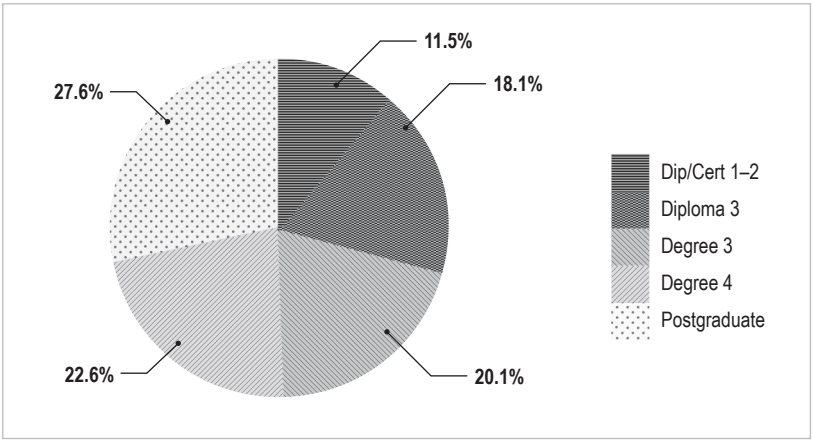


The distribution of graduates under Scenario 3 in 2023 shows that nearly 28% of all graduates will be postgraduate. This may seem high but it includes lower, intermediate and advanced postgraduate qualifications, so it is difficult to ascertain whether projections in government plans such

as the National Development Plan for doctoral graduates have a realistic chance of being realised.

Figure 7 displays a pie chart of the distribution of graduates in 2023 for the third scenario, as given in Set B of Table 20.

Figure 7: Distribution of graduates for the third scenario, 2023



Implications of the three scenarios

(i) Size and cost

The *first scenario* assumes access to higher education at the current rate by the growing number of eligible candidates with Bachelor passes from the NSC. This scenario does not seem to be a feasible one. It requires unsustainably rapid growth, both in state funding and in third-stream income. Student enrolments grow at 6.03% per annum and state grants grow at 7.75% per annum between 2013 and 2023. To keep pace, third-stream income should grow at 7.5% per annum.

In the *second scenario*, state grants grow at the much more modest rate of 2.74% per annum between 2013 and 2013. However, this means that student enrolments can grow only at the rate of 0.98% per annum over the same period, which is inadequate to meet the anticipated demand for higher education from school leavers qualifying for access. According to Homer's story of the journey of Odysseus to Troy, with this scenario we have encountered Charybdis.

In the *third scenario*, student enrolments will rise at 3.1% per annum between 2013 and 2023. This would require state grants to grow at 4.9% per annum over the same period. This represents an attempt to find a middle way.

The first scenario means that state expenditure on higher education (including NSFAS) would rise from 0.78% of GDP in 2012 to 1.21% in 2023. The second scenario would mean that in 2023 the corresponding level would be 0.73%, lower than in 2011 as a result of projected budget austerity between 2013 and 2016. The third scenario would mean that 0.9% of GDP would be spent on higher education in 2023.

In the first scenario, the gross enrolment ratio would rise from 18.7% in 2013 to 31.1% in 2023, which does not seem feasible given that this ratio has languished around 18% since 2001. The ratio would rise to 19.1% in 2023 under the second scenario, which does not represent a significant improvement on the present value.[41] Scenario 3 would yield a gross enrolment ratio (GER) of 23.5% in 2023, which represents a significant but realistic improvement on the present position. Under this scenario, the absolute level of the gross enrolment ratio would rise at an average rate of 0.48% per annum.

The implications for the continuation rates from the NSC to first year higher education study for each of the scenarios are set out in Table 21.

Table 21: Continuation rates, 2012-2013 to 2022-2023[42]

	First scenario		Second scenario		Third scenario	
	Degree	**Dip/Cert**	**Degree**	**Dip/Cert**	**Degree**	**Dip/Cert**
2013	87.5%	30.6%	80.1%	28.4%	79.9%	28.4%
2015	87.5%	30.6%	57.2%	20.9%	62.0%	22.7%
2017	87.5%	30.6%	58.9%	22.2%	65.7%	24.8%
2019	87.5%	30.6%	56.5%	21.9%	65.9%	25.6%
2021	87.5%	30.6%	54.0%	21.6%	66.0%	26.4%
2023	87.5%	30.6%	53.6%	22.1%	68.2%	28.1%

41 In 2013, the GER was 20%. See CHE (2015) *VitalStats*.

42 These ratios are calculated by subtracting the enrolments of students already in the higher education system from total enrolments, thus defining first-time enrolments, and then dividing the number of first-time enrolments by the relevant number of applicable passes in the NSC in the previous year.

Figure 8 graphs the evolution of continuation rates for the Bachelor's degree.

Figure 8: Bachelor's degree continuation rates by scenario

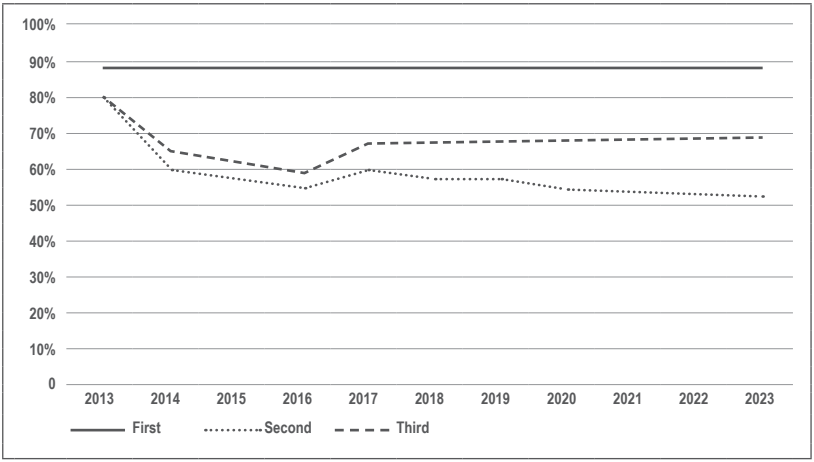
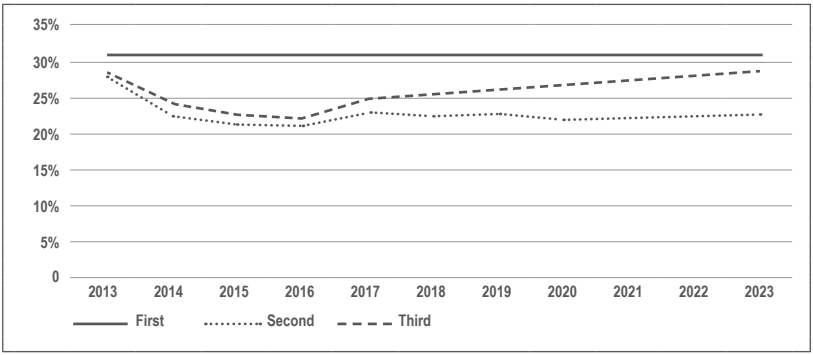


Figure 9 graphs the evolution of diploma and certificate continuation rates.

Figure 9: Diploma/Certificate continuation rates by scenario



The first scenario's continuation rates, by design, remain constant. The continuation rates for the Bachelor's degree are high and not likely to be sustainable.

The second scenario's continuation rates for holders of a Bachelor's pass decline

steeply from 87.5% in 2012 to 59.7% in 2014 (not shown in Table 21) and decline further to 53.6% in 2023. This would be unacceptable for both socio-political and economic reasons. The diploma and certificate continuation rate drops from 30.6% in 2012 to a low of 20.7% in 2016 (not shown in Table 21) and rises to 22.1% in 2023. From a socio-political and economic perspective this is also too low.

The third scenario's continuation rates for holders of a Bachelor's pass drop from 87.5% in 2012 to 61.0% in 2016 (not shown in Table 21), but rise again slowly after that to 68.2% in 2023. This would be more acceptable from a socio-political and economic point of view and would also be more attainable than the continuation rates for Scenario 1. The continuation rates for diploma and certificate study are 22.6% in 2016 and 28.1% in 2023. As in the case of the Bachelor's degree, these rates are also more feasible. It is assumed throughout that first-time enrolments in diplomas and certificates will rise faster than first-time enrolments in degrees.

It can be expected that the lower the continuation rate for the Bachelor's degree, the greater will be the 'downward-raiding' by Bachelor's pass holders entering diploma and certificate study as they find entrance into degree study more competitive. This applies in particular to the second and third scenarios. In this respect as well, Scenario 3 strikes a 'happy medium'.

(ii) Academic staff requirements[43]

The consequences of the three sets of assumptions reflected in the scenarios can be traced out for staffing overall and for academic staff (or more formally, instructional and research staff) in particular, as this category is likely to constitute a key constraint experienced by universities. New academic staff recruits are required in order to:

- Replace academic staff members who exit from the system. While no attrition data are available, an estimate of 5% per annum is assumed, implying an average career length of twenty years.
- Add to the academic staff establishment to keep the student-staff ratio constant as the system expands. No reduction in this ratio is projected, even though this would be desirable in the longer term, given the pressures exerted on maintaining acceptable student-staff ratios in higher education institutions during the past few years.

43 See Chapter 7 on academic staffing at universities in CHE (2016) *South African higher education reviewed: Two decades of democracy.*

Table 22 sets out the required annual recruitment needs for academic staff for each of the three scenarios.

Table 22: New academic staff recruits required

	First scenario		Second scenario		Third scenario	
	All	New	All	New	All	New
2013	20 804	1 340	20 804	1 340	20 804	1 340
2015	25 920	3 645	20 507	885	21 377	1 343
2017	30 180	3 276	20 708	1 366	22 503	1 917
2019	32 974	2 899	21 422	1 413	24 267	2 067
2021	35 269	2 917	22 161	1 462	26 169	2 229
2023	37 351	2 848	22 161	748	28 221	2 404
Mean 2013-2023		**2 985**		**1 209**		**1 858**

Universities have, on the whole, become stricter with regard to desired academic qualifications for the appointment of new academic staff. Most have started requiring PhDs for appointment to the level of senior lecturer or above, with the exception of some of the more professionally-oriented fields. If it were desired that all newly-appointed academic staff required PhDs, the 'New' columns would also represent the number of new PhDs required each year just for universities: an annual mean of 2 985 for the first scenario, 1 209 for the second scenario and 1 858 for the third scenario. These estimates compare with 1 878 PhDs awarded in 2012 for all purposes.[44]

(iii) Special infrastructural needs

a. Redress funding for historically disadvantaged universities

Redress funding for seven historically disadvantaged universities was identified as a special need by the Ministerial Committee for the Review of the Funding of Universities.[45] The needs are quantified in Table 23.

44 See CHE (2014) *VitalStats*, Figure 30.

45 The seven institutions are: University of Fort Hare, University of Limpopo, Mangosuthu University of Technology, University of Venda, University of the Western Cape, Walter Sisulu University and University of Zululand. See DHET (2013) *Report of the Ministerial Committee for the Review of the Funding of Universities.*

Table 23: Catch-up costs for seven historically disadvantaged universities (millions of Rand)

Infrastructure backlogs	4 094
Maintenance	758
Municipal expenses	63
HEQC recommendations	956
Teaching, learning and research	1 050
Student housing	11 210
Total	**18 131**

Source: Report of the Ministerial Committee for the Review of the Funding of Universities, 185-186

The item 'HEQC recommendations' refers to recommendations made in respect of these seven institutions as part of the institutional audits conducted by the HEQC in the period 2005-2012.

The total required for redress funding is substantial, particularly for a higher education budget which is already under pressure in terms of matters such as the increasing need for more student financial aid and expectations of some form of free higher education for the poor. In addition, the implementation of the recommendations contained in the *White Paper for Post School Education and Training* would require significant additional expenditure, especially on training, which will make finding 'new' funds for higher education very difficult.

To place the amount of R18.131 billion in perspective, even if, under third scenario assumptions, 40% of the total earmarked grant were devoted to infrastructure, and 75% of this were allocated to the seven universities, the above infrastructural backlog could not be eradicated in the next decade.

b. The construction of housing for students in the sixteen other universities[46]

The Ministerial Committee for the Review of the Provision of Student Housing of 2011, estimated the costs of developing adequate residential accommodation at all universities over a fifteen-year period to be between R4.7 billion and R5.6 billion a year in 2013 prices. Against this can be offset the amount required to reduce the backlog in student housing infrastructure in the seven historically disadvantaged universities. It is,

46 DHET (2011) *Report of the Ministerial Committee for the Review of the Provision of Student Housing at South African Universities*. This report considered the 23 universities that existed in 2011.

however, a virtual certainty that given the student housing needs in these seven universities, little new student housing could be provided for in the other sixteen universities in the next decade. There will, therefore, be continued reliance on the private sector to offer student accommodation, with all the consequential challenges this holds for universities as well as for individual students.

c. Implications of enrolment growth for infrastructure

There will also be a need for infrastructure other than student housing to cope with increased student numbers. This could be met, in part, by the introduction of a trimester system, which would use existing assets more intensively. However, in the absence of additional academic staff, the effects of doing so on the other core functions, namely research and community engagement, have not been investigated.

(iv) Conclusion

The analysis of the three major scenarios set out in this section shows that universities will experience increasingly tight financial constraints over the coming decade. Demand for places will rise in relation to the number of students who can be financed. Cost containment will be paramount and universities will need to make every effort possible in this respect without jeopardising the quality of higher education.

The possible means of substantially improving internal efficiency in higher education, particularly through improving the current low throughput and graduation rates, are not examined analytically in this chapter, but are referred to briefly in section 5 below.

4. The steering capacity of the state and the adaptability of the system

The discussion of the adaptability of the present higher education system that follows has two dimensions: a technical consideration of what can be altered in the system to adapt to changing circumstances; and the constraints that value commitments put on these adaptations.

Against this background, the components of the funding system are considered in turn.

(i) The block grant

The principal degrees of freedom include:

- The number of places funded each year under the teaching input grant, and their distribution across subject categories and types of qualification as set out in institutional enrolment plans. While universities are not prevented from exceeding the numbers of students approved by the DHET, the fact that so-called over-enrolments will not be funded by the state is a powerful disincentive for departing from the DHET-approved enrolment plan. This follows since the tuition fee income received from such over-enrolled students does not cover the full cost of providing university education for the student.
- The weights within the funding grid. The original funding grid and its cell entries are based on data analysis conducted in the late 1990s and early 2000s, which can, and should, be reviewed from time to time to allow for changes in relative costs and priorities.[47]
- The relative pricing of units counted under each of the four components of the block grant. Changing the relative pricing of these four components, particularly the first three, will change the weights of teaching input, teaching output and research output in determining the size of block grants to individual universities.

47 An example of such an exercise is contained in the DHET (2013) *Report of the Ministerial Committee for the Review of the Funding of Universities.*

Table 9 above suggests that the parameters driving the block grant did not vary much between 2007 and 2012. Real growth of unit prices varied from 1.2% per annum for teaching inputs to 1.1% per annum for research outputs, and -1.8% per annum for teaching outputs. The drop in the real unit value of the teaching output grant signals a weakening of emphasis on the efficiency objective. The number of teaching input units increased by 4.1% per annum, the number of teaching outputs by 4.3% per annum and the number of research outputs by 5.1%, reflecting increased activity in postgraduate studies and research. The weightings for different knowledge fields in the funding grid have not been substantially altered since the inception of the new system, although the Funding Review has proposed changes in some fields such as engineering and computer studies.

The most obvious steering measure to bring university funding into line with available state resources is to tie the expansion of study places to the rate of growth of the funding envelope. Doing so would ensure that academic and other service standards in universities would not be affected negatively by a growth in student numbers. However, while some adjustment of this kind seems unavoidable over the next few years, effecting such adjustments in practice is difficult to achieve for the following reasons:

- Students acquire 'rights' to continued enrolment as they progress through their years of study and these rights need to be accommodated in projecting the number of students enrolling for their second and subsequent years. This means that, in effect, the only policy variable for the total number of teaching input units is the number of first-time entrants. However, the whole burden of adjustment cannot be borne by this factor since this would create undesirable year-on-year fluctuations in the probability of holders of NSC passes, which qualify them for entry into higher education, from actually proceeding into higher education.
- Another form of adjustment would be to adjust average unit prices, but there are limits on how far this can be done. A sharp downward adjustment, or a sustained smaller adjustment, would require universities to embark on contested and often undesirable retrenchments of staff, including academic staff, resulting in

many negatives for institutions and students alike. Sharp upward adjustments are less likely and are also not desirable, since they create expectations and would lead to commitments in regard to staff expenditure that may not be sustainable.

Another way of reducing costs per student is to negotiate more distance and fewer contact students, since the former currently carry half the input subsidy of the latter. The trend between 2008 and 2012 was in this direction, but the fact that the average throughput rate for distance education students tends to be substantially lower than for contact students means that, while such a step would increase access, it would not be matched by a concomitant level of student success.[48] If this step were to be pursued, it could not be expected that UNISA should bear the full burden of such student enrolment increases. Increases in distance education student places could be negotiated with the other universities as well, as is foreseen in DHET's *White Paper for Post School Education and Training*, 2014 and the DHET's Draft Distance Education Policy in 2012.

An increase in the size of the teaching output unit grant relative to the size of the teaching input unit grant could provide a spur to greater efficiency on the part of the universities. This would entail reversing the trend between 2007 and 2012 in which, as was seen before, the teaching output grant declined in relation to the teaching input and research grants.[49] However, such an adjustment would have considerable implications for quality assurance across the sector.

(ii) The earmarked grants

The principal degrees of freedom include: the number of areas identified by the Minister of Higher Education and Training for earmarked grants; the relative amounts allocated through the various earmarked windows; and the proportion of total funds allocated between the block grant and the earmarked grants. If NSFAS allocations are excluded, between 2007 and 2012 the proportion of funds allocated as earmarked grants dropped

48 For example, the 5-year completion rate of the 2006 UNISA intake, in respect of all standard Bachelor's degrees and national diplomas, was 6% (CHE (2013) *A proposal for undergraduate curriculum reform in South Africa,* p. 45).

49 See Table 9.

from 22.6% of the total to 17.3%. This comparison is complicated by the institutional restructuring grant associated with the mergers and incorporations of universities and campuses of universities. These were short-term earmarked grants, compared with some of the other grants, which have medium- and even long-term expected lifetimes. Table 24 compares the allocation of earmarked grants in 2007 and 2012.

Table 24: Allocation of earmarked grants across categories, 2007 and 2012

Grant description	2007	2012
Interest and redemption on loans	4.6%	0.5%
Institutional restructuring	32.5%	
Former VISTA development grant	4.3%	
Multi campus grant		5.5%
Teaching development	20.5%	18.7%
Research development	4.2%	6.6%
Infrastructure development	24.1%	37.5%
Foundation programmes	6.2%	7.3%
Clinical training of health professionals		13.8%
Veterinary science	2.9%	4.6%
Other	0.6%	5.5%
	100.0%	**100.0%**

Source: DHET, University State Budgets 2004-12, Section 2

Considerable flexibility has been shown in the allocation of earmarked grants, although the basis on which the Minister assigns weightings to the various earmarked grants or introduces new ones (as in the increase from 2007 to 2012 in the category 'other') is not evident. The changes in the earmarked grant component have largely resulted from changing circumstances. The reduction in the share of interest and redemption on loans is, for example, a result of no new loans being extended and underwritten by the state. Institutional restructuring, as mentioned earlier, was fully underway in 2007, but has since run its course. Some elements of the old SAPSE funding system have re-emerged, as in the case of the grants for veterinary science and clinical training of health professionals. Infrastructural development has moved up as a priority, not surprisingly in the light of the many years of neglect by the state in providing meaningful funding for this area of expenditure, as well as the rapid expansion of student enrolments during that period.

(iii) NSFAS

The fundamental problem which NSFAS has been faced with since its inception is that the funds available for awards are inadequate for creating reasonable equality of opportunity, despite very rapid growth in NSFAS funding over the last twenty years. The Ministerial Committee on NSFAS observed that:

> Current estimates are that NSFAS has less than half of the funds it needs to meet the demand for financial aid from qualifying applicants, even at current participation rates… Underfunding [in terms of award sizes] contributes to many of the secondary impediments.[50]

Unless loan recovery rates improve dramatically, the gap will not be closed over the coming decade, even under the second scenario. In fact, it will widen.

Nonetheless, the allocation of funds by NSFAS occurs within a framework which has some degree of freedom. The loan/bursary mix is one of them. The higher the loan component in NSFAS awards, the higher future loan recoveries can be, which can then be recycled into the system. A possible route to making NSFAS funding stretch further is to increase recoveries by abolishing all the bursary components and reverting to the pure loan fund that TEFSA was at the outset. While recognition of achievement is desirable, making provision for the conversion of loans into bursaries means that the most able students (with the highest earning-power in later life) are exempted much of their repayments, leaving repayments to be recovered from weaker graduates who take longer to complete their studies, and from dropouts. As indicated earlier, the bursary component has in fact been strengthened significantly during recent years, and has adversely affected the already low level of loan recoveries and hence the replenishment of student financial aid funds. It seems that pruning rebates in the form of loans being converted to bursaries is essential for the sustainability of NSFAS.

Although investigated in the past, consideration should again be given to obtaining finance from commercial banks for the least risky student loan components. Commercial banks could, for instance, prioritise the awarding of loans to final-year students. In order to keep interest rates down, commercial loans could be given repayment seniority over NSFAS loans,

50 DHET (2013) *Report of the Ministerial Committee for the Review of the Funding of Universities*, p. xiii.

with the first repayments being made to the commercial banks.

Moreover, the loan size entitlement criteria in relation to household income can be adjusted. Also, NSFAS should have loan balance limits for individual students, such that loans can be repaid within a reasonable time-frame, say not more than fifteen years. A special supplementary grant may then have to be paid to NSFAS to be passed on as a grant to students from the poorest households to enable them to complete their studies within a reasonable time without becoming over-indebted.[51]

At present, claims on NSFAS are related to the level of student fees, which vary significantly between universities. The Ministerial Review Committee on University Funding found that fee increases from 2005 to 2012 in all but one university were higher than the rate of inflation, and that the proportion of fees in university income had risen from 24% in 2000 to 30% in 2010.[52] The knock-on effect of such tuition fee increases on NSFAS funding is obvious. The Ministerial Committee recommended that no cap be placed on fees, but noted that tuition fee increases well above inflation will add further stress to NSFAS and will require matching (and higher) increases in the allocation of funds to NSFAS if the scheme is, at the very least, to maintain its levels of support to students qualifying for financial aid. Furthermore, consideration should be given to those students who do not fall within the current means eligibility criteria, but who do not qualify for bank loans.

5. Possible productivity improvements

As the analysis above has indicated, the first and second scenarios are not deemed to be feasible, the first because of its very high cost and the second because of the limitations it would impose on system growth and individual opportunity. Scenario 3, representing a compromise position, thus appears to be the most practicable of the three.

However, it is evident that implementing Scenario 3 would not, in itself,

51 Students with household incomes less than the income tax threshold who reach the loan ceiling before completing their qualification could be offered grants to complete within a reasonable time. The cost of such a measure is sensitive to interest rates, but is likely to be modest.

52 DHET (2013) *Report of the Ministerial Committee for the Review of the Funding of Universities,* Figure 9 and Table 94.

address all the pressures on the system and could indeed introduce others. It also involves considerable cost. It is, therefore, necessary to consider what strategies could be followed to achieve significant productivity improvements and thus to strengthen the practicability of the scenario. Broadly, there are three areas in which improvements could be sought: first, changing the mix of modes in which higher education is delivered; second, finding sources of provision outside the public sector; and third, effecting internal efficiencies in the educational process in higher education. Some possibilities are discussed below for illustrative purposes.

Changing modes of delivery

Two possibilities are discussed in this section: changing the mix of contact and distance education; and more extensive use of technological innovation in the delivery of higher education.

(i) Contact and distance higher education

Students are classified as 'contact' or 'distance' for the purposes of the teaching input subsidy. Distance education students attract half the subsidy that contact students in the same cell of the funding grid attract, up to and including the honours degree. It follows that, from the point of view of the state, distance education makes less demand on the public purse, so increasing the proportion of distance education students in an expanding system would reduce the subsidy required. In the following analysis, enrolments in the two categories are taken from the University State Budget workbooks. The numbers reported there are not headcount numbers but student units to which the contact and distance weightings have already been applied. The gap between student headcounts and student units is not great in the case of contact students, but the student unit numbers should be doubled to give an indication of the headcount in the distance education sector. Moreover, the numbers reported are not actual enrolments, but the enrolment targets or student numbers approved by the DHET for state funding purposes. So-called over-enrolled student numbers would thus not be taken into account, nor would under-enrolments. Table 25 reports the student-unit statistics for 2008 to 2012.

Table 25: Contact and distance student units, 2008-2012

	Contact		Distance	
	non-UNISA	UNISA	non-UNISA	UNISA
2008	808 551	777	12 941	82 121
2009	834 640	769	18 676	86 275
2010	874 581	516	17 019	91 547
2011	911 429	615	18 816	96 466
2012	949 522	571	18 171	103 560
Average growth	4.1%	-7.4%	8.9%	6.0%

Source: DHET, University State Budgets 2004-12, Section 3

In terms of weighted student units, Table 25 shows distance education enrolments rising at a faster rate than contact education enrolments. If student units as defined above are seen as indicative of student enrolments themselves, predominantly contact universities contributed 14.9% to total distance education student enrolments in 2012. These enrolments have thus far been concentrated at a small number of universities. The Department of Higher Education and Training is now encouraging universities to extend distance education provision, as long as it meets quality requirements set by the DHET in its programme and qualification mix approval process and by the HEQC in programme accreditation.[53] If this trend were to continue, the demands on subsidy would be reduced. One of the complexities, however, is that the increasingly widespread use of technological innovation is rendering the distinction between traditional contact education (learning from live lectures) and distance education (learning from e-linked materials and mailed printed materials) less clear-cut. There is now a continuum from completely on-line modes, where lectures, tutorials, assignments, tests and examinations are all conducted by electronic means, to 'blended' or 'hybrid' modes, where on-line interaction is combined with face-to-face teaching and assessment. Consequently, maintaining the distinction between contact and distance education for funding purposes could be challenged in the future.

As pointed out previously, the mode of educational delivery is here considered from the point of view of student enrolments. From the point of view of graduate production, it needs to be borne in mind that distance education graduation rates are significantly lower than contact education

53 See DHET (2012) *Draft Policy Framework for the Provision of Distance Education in South African Universities.*

graduation rates, and that good-quality online distance education provision may not be less costly than contact education.

(ii) Implications of extending technological innovation: costs, staffing, infrastructure and effectiveness

a. Costs

South Africa is not the only country to struggle to afford its higher education, and a substantial international literature has been developed in recent years on an approaching crisis in higher education, mainly occasioned by reduced public funding levels.[54] There is a wide range of material on the possibilities of cost-saving through the expanded use of technological innovation, some of which is relevant to the South African context.[55] While some regard the use of educational technology as a potential cost-saving strategy, there is no consensus on this.

In these circumstances, South African higher education must weigh and test options carefully in the light of local conditions. Given funding constraints, everything that is done must lead to clear cost reduction or quality improvement to make it worthwhile.

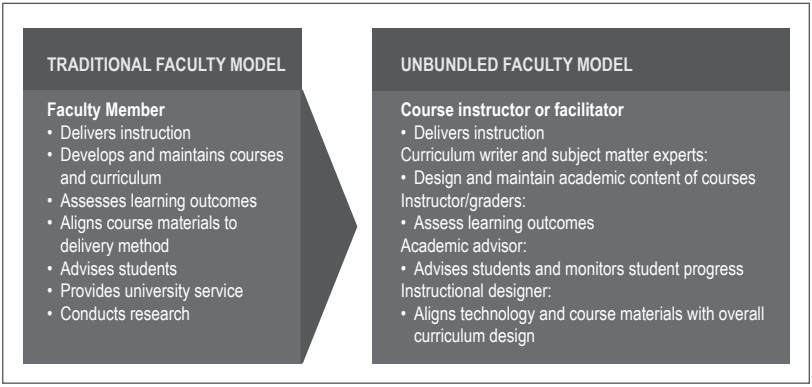
b. Implications for academic staffing

Change in delivery mode also has substantial implications for academic staff roles. Bowen (2013) and Carey and Trick (2013) observe that the unbundling and re-bundling of functions in the move from face-to-face teaching and learning to online/hybrid teaching and learning will have radical consequences for the structure, composition of employment and status system of universities. Figure 10 illustrates what is at stake:

54 M. Barber, K. Donnelly & S. Rizvi (2013) 'An avalanche is coming: Higher education and the revolution ahead' (report); P.G. Altbach, L. Reisberg, & L.E. Rumbley (2010) *Trends in global higher education: Tracking an academic revolution.*

55 For example: W.G. Bowen (2013) *Higher education in the digital age*; W.G. Bowen, M.M. Chingas, K.A. Lack and T. I. Nygren (2012) I*nteractive learning online at public universities: Evidence from randomized trials*; T. Carey and D. Trick (2013) *How online learning affects productivity, cost and quality in higher education: An environmental scan and review of the literature.*

Figure 10: Reorganisation of staff functions as a consequence of online teaching and learning



Source: P Neely and J P Tucker, Unbundling faculty roles in online distance education, *International Review of Research in Open and Distance Learning*, 11(2) 2010. In Carey and Trick, Ontario (2013) p. 18

There needs to be thorough investigation into the extent to which the higher education sector would have the capacity and will to implement such far-reaching change in academic staff roles on any large scale. Alerts of this kind to major complexities in introducing innovation in delivery mode, which may not be foreseen by policy-makers, are of particular importance in South Africa's environment of limited human resources. Constraints on infrastructure are equally important, as discussed below.

c. Infrastructure

South Africa has clear limitations, but also some strengths in terms of infrastructure for supporting technological innovation.

A key consideration is that South Africa has a very different telecommunications system from advanced industrial countries, as shown in Table 26.

Table 26: Telecommunications statistics, South Africa and the United States, 2012

	South Africa	United States
Fixed telephone subscriptions per thousand inhabitants	7.9	44
Mobile subscriptions per thousand inhabitants	134.8	98.2
International internet bandwidth: bits/sec per internet user	11 668	62 274
Percentage of individuals using the internet	41	81
Fixed broadband prices as a per cent of gross national income	4.8	0.4
Mobile broadband prices: pre-paid hand set: 500Mb per month as a per cent of gross national income	2.1	3.8
Digital natives per 100 of population between the ages of 15 and 24[57]	18.6	95.6
Household download average speed: Mbps	4.33	20.55

Source: International Telecommunications Union, *Measuring the Information Society*, 2013

The implications of these factors, particularly broadband costs and download rates, are substantial.

In contrast, an example of a significant asset is the TENET-SANREN system, which forms the connectivity backbone of South African universities and research institutions. A proposal to include FET/TVET colleges in this system is being considered. The system is based on CSIR infrastructure, with TENET configuring and operating a network on top of it. This network is comparable in reach and capacity to those found in many mid-rank developed countries. Almost all of it has been built in the last five years, during which bandwidth has increased more than twentyfold.

The further strengthening of this network, which South Africa clearly has the skills to design, could greatly increase the technical feasibility of expanding the use of technology in teaching and learning in higher education.

d. Suitability of online learning for the current South African context

It cannot be taken for granted that changing the mode of delivery in the direction of online learning will be effective in improving, or even maintaining, the quality of learning (and consequently success and graduation rates) across the South African student body, with its high levels of inequality and underpreparedness. Key factors such as those outlined below, require in-depth consideration.

56 The ITU defines a 'digital native' as a youth age 15-24, with five or more years' experience using the Internet.

The generally low quality of South African schooling is well-known. For example:

- The 2013 DBE Report on the Annual National Assessments showed that mean scores on grade-appropriate tests in Grade 9 were 43% for the home language, 33% for the first additional language and 14% for mathematics.[57]
- Ninth-grade South Africans achieved an average score of 352[58] in the 2011 round of the Trends in International Mathematics and Science Study (TIMSS), compared with an average score of 509 among United States eighth-graders and 613 among South Korean eighth-graders.[59]
- Fifth-grade South Africans, whose language of learning and teaching was English or Afrikaans in the first three grades, were tested for reading literacy in the 2011 round of the Progress in International Reading Literacy Study (PIRLS). This included in this group are historically Coloured, Asian and white schools as well as a substantial number of historically African schools. The distribution of outcomes against low, intermediate, high and advanced standards was as follows:

Table 27: PIRLS results, South Africa and international median, 2011

Per cent distribution	South Africa	International
Worse than low benchmark	43	5
Between low and medium benchmarks	23	15
Between medium and high benchmarks	20	36
Between high and advanced benchmarks	10	36
Above advanced benchmark	4	8

Source: PIRLS 2011, *South African Children's Reading Literacy Achievement*, University of Pretoria, 2012, 50

- University entrants are likely to be drawn from the top quartile of the distribution. Even so, findings at the university gate are not propitious. A study conducted by the South African Institute of Physics and the Council on Higher Education found unanimity

57 DBE (2013) *Report on the Annual National Assessment of 2013: Grades 1 to 6 & 9.*
58 This was up from 285 in the 2002 round. The centre point of the TIMSS scale is 500.
59 V. Reddy, C. Prinsloo, F. Arends, M. Visser, L. Winnaar, N. Feza, S. Rogers, D. Janse van Rensburg, A. Juan, M. Mthethwa, M. Ngema, M. Maja (2012) *Highlights from TIMSS 2011: the South African perspective.*

among physics teachers that students' preparedness had been dropping over the last five years.[60]

- National Benchmark Tests developed under the auspices of Higher Education South Africa (HESA) have been introduced as a placement mechanism at some universities. Table 28 shows the outcome for 12 202 students who wrote the AQL test (which includes academic and quantitative literacy) and 10 672 who wrote the mathematics test in 2009:

Table 28: National Benchmark test outcomes, 2009

Test	Basic	Intermediate	Proficient
Academic Literacy	7%	46%	47%
Quantitative Literacy	25%	50%	25%
Mathematics	20%	73%	7%

Source: Unpublished CHE document

These results show that while academic literacy skills are substantially stronger than quantitative or mathematics skills, fewer than half the students who sat the test were ready for university study (that is, in the Proficient category) based on academic literacy skills alone. The results for quantitative literacy were worse, and the mathematics results were very poor. It must also be noted that the students who took part in the pilot had already been accepted into programmes at universities.[61]

In short, many university entrants arrive with slow reading speeds, poor reading comprehension, limited ability to express themselves in writing, inadequate numeracy levels, and little experience with computers and the internet. There are also concerns about the capacity of many entrants to work on their own for extended periods of time without face-to-face interaction with academic staff.

However, hybrid teaching and learning modules have the advantage of offering the opportunity of closer contact with students than traditional distance education does. This mode of delivery may consequently offer significant advantages.

The above discussion suggests that, for South African higher education,

60 B. Nkosi (2013) 'School maths failing varsity entrants' in *Mail and Guardian*, 19 July.
61 Some of the universities in the pilot had relatively high admissions criteria (UCT, Wits, UKZN, SU, and RU).

at least in the near future, purely online teaching and learning modules are less likely to be successful for undergraduates than hybrid or blended modules. As long as it is well-designed in relation to the target audiences, blended provision could enhance learning among students who are adequately prepared for utilising it. Active exploration of expanding the use of blended provision is also justified by potential practical benefits, such as that hybrid modules could be useful in delivering a more flexible curriculum, and have the potential for space saving, leading to reduced demands for infrastructural development. Conversely, hybrid modules require physical attendance at universities for a significant amount of time, so there are limits on how far they can replace distance education. As noted earlier, moreover, changing delivery mode in this way carries a range of implications – particularly for academic staff recruitment, roles and capacity – as well as unforeseen consequences. Its contribution to facilitating higher education growth through cost-saving cannot be taken for granted.

Online and hybrid educational delivery is no doubt here to stay and will develop fast internationally over the next decade. Although some individual universities are already active in this mode of educational delivery, it will require a major effort to incorporate it systemically into South African higher education. Against the background of the cost analyses given earlier, the maxim for considering specific developments should be: unless cost savings are certain to be substantial in a steady state, maintain the status quo until greater certainty emerges in this regard.

Alternative sources of provision: Private higher education

Section 29(3) of the Constitution guarantees a right to independent education and section 29(4) permits state subsidies to this form of education provision. Accordingly, a framework has been established for the registration of independent higher education institutions and for their regulation, including the adequacy of premises, the submission of reports to the DHET, and the accreditation of qualifications by the CHE's HEQC. Unlike independent school education, independent higher education currently receives no subsidy from the state. According to the *White Paper for Post School Education and Training* of 2013, this is not likely to change in the foreseeable future.

In October 2013, there were 89 registered and 26 provisionally registered private higher education institutions. Among the registered institutions were 18 business colleges, 16 theological seminaries (and three faith-based institutions), 15 institutions in the media, advertising, design, fashion and film fields, 10 in health and sports, and five in computer and information technology. Eighteen had a mixed range of offerings, and the remainder were specialist institutions in other fields. No private higher education institution has been allowed to use the designation 'university' as part of its formally registered and approved institutional designation.

While private higher education institutions submit annual reports to the DHET, data other than enrolments and achievements are currently not collected in the same way that public institutions submit data to a central database, i.e. HEMIS. While enrolment and achievement records are collected via the Higher Education Quality Committee Information System (HEQCIS), these are unaudited and therefore not easily comparable. A UNISA study, based on unpublished returns to the DHET, found that 65 755 students were enrolled in 82 private higher education institutions in 2010, and the most recent count of enrolments, according to the Annual Reports submitted to the DHET, is over 90 000.[62] The policy issue to be considered is whether, despite the views expressed in the above-mentioned White Paper, state subsidies should be introduced for independent higher education, on either a general or a selective basis. Subsidies per student, even well below those paid to public universities, would have the effect of stimulating the sector, increasing overall higher education student enrolments and lowering per-student costs over the entire public and independent system.

It should be borne in mind, however, that if NSFAS support is not extended, the numbers of students in a position to take advantage of growth in private provision will be likely to be very limited, with the public sector having to accommodate the great majority of indigent students.

Improving internal efficiency

(i) Trimesters: restructuring the academic year

Internal efficiency could also be increased through extending or better

62 L. S. Tladi (2010) *A profile of the private higher education landscape*; DHET (2014) *Statistics on post-school education and training: 2012.*

structuring the teaching time available in a calendar year. It would be possible, for example, to run three terms per year, each the length of a standard university semester, which currently averages about 13 weeks. From a productivity point of view, this would utilise the physical plant more intensively at little extra maintenance cost. The number of academic staff members would have to rise, but not necessarily in proportion to the lengthening of the teaching year.

Introducing a tri-semester system would enable a capable and sufficiently motivated student to complete what is currently a three-year degree in two years and a current four-year degree in three years. However, unless there were indeed a commensurate increase in staffing (which would have substantial cost, space, equipment and other infrastructural implications), the effects of introducing such a system on a university's research activities and outputs could be negative.

(ii) Reform of curriculum structure

As noted earlier, the scenario projections set out in this chapter all assume the continuation of the student performance patterns that currently exist across the higher education sector. However, as research over the last decade has indicated, the persistence of these performance patterns is in itself a major obstacle to viable growth in higher education, particularly in relation to the production of graduates on the scale needed for the country's development. The performance patterns show that, despite the student intake being very small in comparison with other emerging economies, there is severe inefficiency in graduate production, with approximately half of each intake not completing their studies.

While the reasons for this are complex, it is evident that improving the internal efficiency of teaching and learning within higher education could be a significant means of facilitating positive growth. This issue has not been addressed in depth in this chapter, but is the theme of a comprehensive study recently undertaken by a CHE Task Team.[63] The study found that structural curriculum change – allowing for additional formal time for most degrees and diplomas as the norm, within a flexible framework enabling

63 CHE (2013) *A proposal for undergraduate curriculum reform in South Africa.*

students to complete in a shorter time if they are able to – is necessary to improve the efficiency of the higher education teaching and learning process substantially. Extensive enrolment, performance and financial projections developed within the study, indicate that relatively modest efficiency gains, of the order expected to be achieved by the proposed reform, would result in significantly lower average costs per graduate. The Task Team's findings and recommendations were subsequently endorsed by the Council, which formally advised the Minister of Higher Education and Training to undertake pilot studies with a view to implementing the proposal.

A central point arising is that improving internal efficiency, however it may be achieved, would make a substantial difference to the capacity of the higher education sector to respond to the pressures on it in an economically feasible way.

6. Conclusion

Key conditions for implementing planned growth in higher education over the next decade

The compromise position represented by Scenario 3 as discussed above, is considered to be the most viable of the three scenarios in practice; Scenario 1 is deemed not financially feasible and Scenario 2 is deemed unacceptable socio-politically.

In these circumstances, it is clearly important for the DHET and the higher education sector to identify the key system parameters and financial conditions that will be required for implementing a viable growth plan along the lines of Scenario 3, and to determine the feasibility of these parameters and conditions. This is necessary not only to ensure effective planning and management, but also to enable all stakeholders to develop realistic expectations of what the higher education sector can deliver.

The analysis in this chapter indicates that the following parameters and conditions would be necessary for successfully implementing Scenario 3:

1. Tuition and residence fees at current prices should grow at no more than the inflation rate plus, at most, half the economic growth rate.

This will ensure that the burden of fees will not rise in relation to average household incomes.

2. Third-stream income should grow at the rate of inflation plus 5%, which is higher than was the case over the period between 2007 and 2012.
3. The state block and earmarked grant envelope should grow at the rate of national state expenditure plus 2.1% each year.
4. Continuation rates between NSC passes for degree study and first-time degree entrants should be allowed to drop in the very short term and, if there are further upward jumps in the NSC pass rate, for a longer period. This will require universities to become more selective in their degree admission criteria. They should also consider making their academic exclusion policies more stringent for degree study students. Stricter application of rules for academic exclusion would permit the NSC continuation ratios for Bachelor's passes to be higher than indicated for the third scenario assumption rates shown in Table 21. There is little obvious indication of a need for adjustment for certificate and diploma selection criteria, or for policies for certificate and diploma academic exclusions.
5. The NSFAS allocation system needs urgent attention. The whole approach to student financial aid and its various packages needs to fit into an appropriate funding envelope, and should be heavily targeted towards students from households with incomes below the income tax threshold, with a gradual reduction of loan support as household incomes rise above the income tax threshold. Consideration should be given to making NSFAS purely a loan scheme (i.e. without bursary elements) and to inviting commercial banks to participate in the funding of the least risky student loans.
6. Universities should consider whether and, if so, in what ways effective online and hybrid provision can reduce costs in the steady state, and should innovate only in such ways as will secure cost-reduction in teaching and learning. Innovations in this area will take some time to introduce and an undue rush by individual universities will entail a potential waste of resources. HESA should take the lead in brokering inter-university partnerships on forms of blended and online learning.

7. The rate of student enrolment growth should, as soon as possible, taper down to 3.1% per annum plus the rate of productivity growth (here defined as student enrolments per unit real state subsidy) in the university system as a whole (probably not more than 0.5% per annum). As indicated in this chapter, possible sources of productivity gain include: a shift in balance between public to private higher education; changing the mode of delivery through shifting from contact to distance education and/or towards online and hybrid teaching and learning provided this leads to lower cost; and improving internal teaching and learning efficiency by, for example, restructuring the academic year or reforming curriculum structure. Since the rate of growth of the 20-24 year age-group will be about 0.8% per annum in the next decade, this will mean that the gross student enrolment rate will continue to rise, but entrance into universities will become more competitive.
8. Non-profit private higher education institutions should receive some financial support in the form of state grants, and access to student financial aid via NSFAS should be extended to them.

In summary, the third scenario can be realised if the following conditions are all satisfied:

- The National Treasury accepts that a rising percentage of GDP should be devoted to funding universities and financially-deserving students. The Department of Higher Education and Training (a) negotiates a higher budget with the National Treasury for NSFAS and optimizes student financial aid allocations within this budget, and (b) stimulates, rather than just regulates, private higher education.
- Universities (a) increase the rate of growth of third-stream income and (b) adopt teaching and learning productivity improvement measures, for example, a trimester system or a flexible and extended undergraduate qualification structure.
- Potential students accept that entry into university will become more competitive.

In addition, the higher education sector would clearly be strengthened if the Department of Basic Education, the Department of Higher Education and Training and the universities succeeded in working together to improve

the quality of National Senior Certificate output, improve articulation between secondary and tertiary education, and extend the variety of types of qualifications in higher and further education.

Summary

South African higher education has grown rapidly since the turn of the century, and is likely to go on doing so for the next decade at only a slightly reduced pace. In the third scenario, enrolments in 2013 were 953 000 and enrolments in 2023 are projected at 1 292 000, the latter up by 121% from the 2001 level of 585 000. Table 1 indicated that the 20-24 year age-group is expected to grow from 4 486 000 in 2001 to 5 092 000 in 2013 and 5 508 000 in 2023, and the gross enrolment rate will have increased from 16% in 2001 and 19% in 2013 to 24% in 2023.[64] The actual outcomes will depend on whether material improvements occur in the levels of school-leavers' preparedness for university study and the evolution of the fiscal envelope, determined by the economic growth rate and the priority accorded to higher education in the longer run.

The South African gross enrolment ratio in 2011 is compared with the ratios for regions of the world in Table 29.

Table 29: Gross enrolment ratios: world regions and South Africa, 2011

North America and Western Europe	77%
Central and Eastern Europe	68%
Latin America and Caribbean	42%
East Asia and Pacific	30%
Central Asia	24%
Arab states	23%
South and West Asia	18%
South Africa	18%
Sub-Saharan Africa	8%

Source: UNESCO Education Statistics, Table 14

South Africa needs to improve its position, but there are limits on how quickly progress can be made.

Funding will remain tight throughout the decade and particularly in the next three years. The Department of Higher Education and Training will need

64 If in addition, there were a 0.25% per annum productivity gain from 2013 to 2023, enrolments would rise to 1 325 000 in 2023 and the participation rate would rise to 24.2%. A 0.5% gain would put enrolments at 1 366 000 in 2023, with a participation rate of 24.8% in that year.

to keep tight control over costs. The provision of infrastructure is a difficult issue, since the projections indicate that there will be great pressure on the teaching input and teaching output grants, and that it is not possible to fund all the redress infrastructure needed at historically-disadvantaged universities, let alone finance increases elsewhere in the system.

NSFAS is the weakest link in the system and needs urgent and sustained attention. It is not reaching all students in need, it does not have equitable access rules and it cannot proceed on its current path without a huge injection of funds. Not to optimise NSFAS, subject to the funding constraints, acts against equality of opportunity.

Also needing more attention is the mismatch between the output of the National Senior Certificate across the three categories of pass and the opportunities for study towards degrees, diplomas and certificates.[65] Although only modest progress is likely over the next decade, in the longer run failure to deal with this issue will entail a low ceiling on the higher education participation rate. Moreover, continuing failure to improve secondary-tertiary articulation will result in a similarly low ceiling on completion rates.

In general, the state possesses the necessary tools for steering the system during the decade to 2023, but it must be careful that the way in which it uses them does not impose intolerable adjustment burdens on the universities.

Technological advance in computing, telecommunications and the internet hold promise for South African higher education. However, only those innovations which offer cost reductions – and do not compromise quality or success rates – should be implemented.

The task for the decade ahead is to build a basic system for the cost-effective growth of high-level human capital. More ambitious objectives, such as a preoccupation with South Africa's place in global education rankings, should await a later generation.

65 See Tables 4 and 13. Also to be considered, when graduation rates from TVET colleges rise from their present very low levels, is articulation between TVET colleges and universities, particularly universities of technology and comprehensive universities.

Appendix

Developments in senior secondary school throughput and output

This appendix outlines the projections for secondary education output that inform the higher education projections developed in the body of this chapter.

Table A.1: Secondary school enrolments, 2008-2013

Year	Enrolments				
	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12
2008	926 603	902 656	1 076 527	902 752	595 216
2009	991 093	926 531	1 017 341	881 661	602 278
2010	1 001 180	1 009 327	1 039 762	841 815	579 834
2011	1 008 110	1 049 904	1 094 189	847 758	534 498
2012	971 509	1 096 113	1 103 495	874 331	551 837
2013	942 345	1 073 060	1 146 285	834 611	597 196

Source: Department of Basic Education, Education Statistics (2008-12) and School Realities (2013)

A simple inspection of Table A.1 suggests that there is substantial repetition in Grades 9 and 10. Compare, for instance, the 1 146 285 enrolments in Grade 10 in 2013 with 1 096 113 enrolments in Grade 9 in 2012. There is also substantial learner dropout between Grades 10 and 11, and again between Grades 11 and 12.

No reliable direct observations of promotion, repetition and dropout exist for the secondary school system.[66] A model fitted to the enrolment data obtains indirect estimates based on the following assumptions: modest improvements to the promotion rates are projected for 2013 to 2018, and 2018 to 2023 (despite decreases in the 2008 to 2013 period), with accompanying declines in repetition rates in Grade 10 and in repetition and dropout rates in Grade 11. The figures are set out in the following four tables.

66 Promotion, in this context, means passing (or being promoted in) one year and enrolling in the next.

Table A.2: Promotion, repetition and dropout rates, 2012-2013

	Grade 9	Grade 10	Grade 11
Promotion	0.837	0.695	0.651
Repetition	0.113	0.205	0.134
Drop out	0.05	0.1	0.215

Table A.3: NSC passes enabling continuation to certificate, diploma and degree studies

	Certificate	Diploma	Degree
2008	105 847	127 423	107 274
2009	93 356	131 035	109 697
2010	91 241	146 224	126 371
2011	85 296	141 584	120 767
2012	88 604	152 881	136 047
2013	94 566	172 624	171 755

Source: DBE, National Senior Certificate technical reports

These figures could have been much higher if the efficiency of the senior secondary school system had been greater: 10% of learners drop out in Grade 10, and over 20% in Grade 11. Furthermore, repetition is high: over 20% in Grade 10 and over 13% in Grade 11.

Senior secondary promotion, repetition and dropout rates are projected as follows:

Table A.4: Projection of promotion, repetition and dropout rates, 2013-2017 and 2018-2022

2013-2017			
Promotion	0.857	0.715	0.671
Repetition	0.093	0.185	0.124
Drop out	0.05	0.1	0.205
2018-2022			
Promotion	0.877	0.735	0.691
Repetition	0.073	0.165	0.114
Drop out	0.05	0.1	0.195

These rates represent a modest improvement on the rates reported in Table A.2

Demographic projections and projections of enrolment rates make possible projections of Grade 12 enrolments and National Senior Certificate passes in the three categories leading on to higher education. Table A.5 shows the results.

Table A.5: Projected National Senior Certificate outcomes, 2013-2023

	Candidates	Not achieved	Pass	Higher education entrance		
				Certificate	Diploma	Degree
2013	562 112	122 541	176	94 566	172 624	171 755
2014	558 031	117 796	558	94 411	172 476	172 790
2015	617 186	128 116	617	104 714	191 370	192 369
2016	617 537	126 020	618	105 068	192 091	193 741
2017	617 314	123 807	617	105 324	192 633	194 933
2018	620 718	122 310	621	106 201	194 309	197 277
2019	646 023	125 028	646	110 838	202 870	206 641
2020	663 982	126 172	664	114 236	209 167	213 743
2021	675 878	126 059	676	116 605	213 584	218 954
2022	679 215	124 296	679	117 504	215 311	221 424
2023	691 576	124 130	692	119 972	219 914	226 868
Achievement rates						
2013		0.218	0.000	0.168	0.307	0.306
2023		0.183	0.001	0.173	0.317	0.326
Annual growth	2.09%			2.41%	2.45%	2.82%

There was a large jump between 2012 and 2013, with total passes increasing by 16.3%. From 2013 to 2023, an average annual increase of 2.41% is projected for NSC passes for certificate study, 2.45% for diploma study and 2.82% for degree study. However, these results are sensitive to assumptions made. For instance, if it is assumed that the Grade 11 repetition rate is kept constant at 0.134, and that the Grade 11 pass rates in 2013 to 2017 and 2018 to 2023 are projected at 0.691 and 0.731, with compensating decreases in the dropout rate, the increase in the number of NSC passes for degree study rises to 3.40% per annum between 2013 and 2023.

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The ideology of free higher education in South Africa: The poor, the rich and the missing middle

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1. Introduction[1]

On Saturday 17 October 2015, the Higher Education Summit, organised by the Ministry and its Department of Higher Education and Training (DHET) together with a broad range of stakeholders, issued the *Durban Statement on Transformation in Higher Education*. After listing significant transformation gains, the statement resolved that seven issues must be addressed immediately. The first three related to unspecified 'initiatives' regarding student funding and debt, fee structures, and the National Student Financial Aid Scheme (NSFAS) which needed to be strengthened. The statement concluded by calling for relevant role players to report annually on progress with each of the seven immediate and nine medium-term resolutions.[2]

On Tuesday 20 October, *Eyewitness News*, with the headline 'SA Varsities Brought to a Standstill', intimated that the students were reporting back.[3] On Wednesday 21 October, the *Times Live* headline screamed 'Students Storm Parliament – for the first time in history, stun grenades were fired in

1 A fuller version of this paper was published in *University World News*, 2 November 2015. Only the aspects that were presented and discussed at the colloquium are reproduced here. There is a rejoinder to the original article at DHET (2015) 'NSFAS: Setting the Record Straight' in *Politicsweb*, 9 November.
2 DHET (2015) 'The 2015 Durban Statement on Transformation in Higher Education' (conference statement).
3 S. Sesant, M. Kekana & G. Nicolaides (2015) 'SA varsities brought to a standstill' in *Eyewitness News*, 20 October.

the parliamentary precinct when hundreds of students protesting against increased student fees entered the gates through an open gate from Spin Street.'[4]

On Friday 23 October, *Times Live* announced that President Jacob Zuma, after a meeting with student leaders and university officials, told a media conference at the Union Buildings: "We agreed that there will be a 0% increase of university fees in 2016."[5]

This was the largest and most effective student campaign in post-1994 South Africa. The strategy of a non-party-aligned, no-formal-leadership mobilisation through social media is remarkably similar to how Manuel Castells, in *Networks of Outrage and Hope: Social Movements in the Internet Age*, describes the new forms of social movements – from the Arab spring to the Indignadas movement in Spain and the Occupy Wall Street movement in the USA.[6] One imagines that some of the student leaders must have been reading Castells, and he would be very impressed by them. Unfortunately, it does not seem that the students have been reading Thomas Piketty on inequality and wealth.[7]

2. Free higher education privileges the rich

The media and student spokespeople slip and slide effortlessly between 'free higher education for the poor' and 'free higher education for all'. These are two vastly different concepts.

When journalists and talk show hosts contact me for an opinion, they invariably ask: "Is free higher education a good idea, and where will the money come from?" The short answer is: "No, and there is not enough money in any developing country for free higher education." The examples they usually cite are Norway, Finland and Germany – the richest and most

4 J.J. Joubert & B. Ndenze (2015) 'Students storm parliament' in *Times Live*, 21 October.
5 RDM News Wire (2015) 'Zuma announces a 0% increase in tertiary education fees for 2016' in *Times Live*, 23 October.
6 M. Castells (2012) *Networks of outrage and hope: Social movements in the internet age.*
7 T. Piketty (2014) *Capital in the twenty-first century.*

developed countries in Europe – but never Africa or Latin America.

As far as I am aware, following independence, all African countries had national, flagship public universities offering free higher education. Mahmood Mamdani describes this eloquently with regard to Makerere University in Uganda: "The purpose … was to train a tiny elite on full scholarships which included tuition, board, health insurance, transport and even a 'boon' to cover personal needs ... from the perspective of the student this is was an extraordinary opportunity; from the view of society, an extraordinary privilege".[8]

This generosity to the elite had two consequences. Firstly, when Makerere could not afford to pay its staff, it introduced a two-tier system: free public higher education during the day and private fee-paying students in the evening. By 2008, Mamdani described this 'commercialisation' of Makerere as a devaluation of higher education into a form of low-level training with no research.[9]

The second consequence was the mushrooming of low-quality private 'universities', which charged exorbitant fees for qualifications with a low currency nationally and no value internationally. Who got access to the full scholarship flagship universities? The children of the business and political elite who themselves had gone to top schools locally and internationally. A few extraordinarily gifted poor students also gained entrance into free higher education. The rest, coming from poor schools, ended up (if they were lucky) in low-quality, fee-paying non-university institutions.

From a more technical economist perspective, Professor Archer from the University of Cape Town (UCT) argues that free tertiary education is regressive: poorer members of society end up subsidising the rich.[10] This is the story of free higher education in Africa and Latin America – and a classic Piketty example of how state strategies, sometimes unintentionally, but more often intentionally, privilege the elite. What is cynical in South Africa is that we are privileging the elite under the banner of a pro-poor policy. But even in OECD countries, Nicholas Barr writes that public universities consistently argue that low or no tuition fees provide greater equality of educational

8 M. Mamdani (2008) *Scholars in the market place. The dilemmas of neo-liberal reform at Makerere University.*
9 Ibid.
10 A. Archer (2015) 'Free higher education is an inequality engine' in *Business Day*, 20 October.

opportunity by providing greater access.[11] But, says Barr, such reasoning is incorrect, because the overwhelming subsidy in public universities accrues to students from middle- and high-income families.

Initially, the students targeted the blame for the fee crisis at the universities themselves. Instead of joining the students and taking the protest to government headquarters, the vice-chancellors got caught between the students and the state. But by Friday 23 October, the students marched on government in Pretoria and to the African National Congress (ANC) headquarters. ANC Secretary General Gwede Mantashe expressed the ANC's full support of student demands, asserting that the state must be given more power to regulate universities, and strongly criticised the vice-chancellors, saying that the protest at Parliament was the result of their actions.[12]

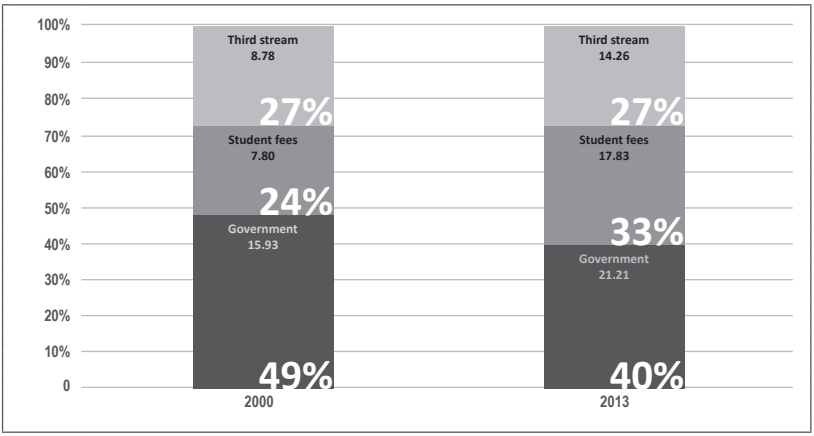
3. Government funding

Empirical evidence shows that the government was not without blame. The graph below illustrates how the proportion of student fees on the balance sheets of universities more than doubled over 13 years, while the government contribution rose by 33% (from R15.9 billion to R21.2billion) and student fees more than doubled (R7.8 billion to R17.8 billion). The universities did well in almost doubling third-stream income, but clearly used student fees to compensate for the 9% drop in government subsidies.

11 N. Barr (2004) 'Higher education funding' in *Oxford Review of Economic Policy*, 20(2), pp. 264-283.

12 A. Kalenga, G. Nicolaides & G. Whittles (2015) 'Gwede Mantashe: ANC fully supports #FeesMustFall campaign' in *Eyewitness News*, 22 October.

Figure 1: Higher education income sources



Source: DHET financial statements in annual report returns of universities.

An international comparison of government contribution to higher education is the percentage of the GDP that is allocated. In South Africa, the percentage has varied between 0.68% in 2004/2005 to 0.72% in 2015/2016. From 2012 data, the proportion of GDP for Brazil is 0.95%, Senegal and Ghana 1.4%, Norway and Finland over 2% and Cuba 4.5%. In South Africa, the 2015/2016 budget for higher education is R30 billion. If the government were to spend 1% of GDP on higher education, this would amount to R41 billion – an additional R11 billion and almost four times the reported shortfall due to the 0% increase.[13]

4. A 'war room' for differentiated fees

What could be done so that higher education does not become an SAA or Eskom that requires annual bailouts?[14] Perhaps the ESKOM situation provides some pointers. A 'war room' was established under the Deputy President comprising representatives from a number of other ministries,

13 Staff reporter (2015) 'Government needs R2.6-billion to fund no fee hike: Nzimande' in *eNCA*, 27 October.

14 The multibillion rand bailouts to SAA, ESKOM and PetroSa are part of the reason why there is no readily available cash for higher education.

experienced business leaders and a few academics.[15] The top management structure of ESKOM stepped aside and an interim leadership was installed. The aim was not only to get the lights back on, but to work out a sustainable strategy. The same Deputy President is not unfamiliar with higher education funding: he was involved in the DHET 2014 review of funding to universities.[16]

One task for such a war room for higher education would be quite simple, but very hard to implement politically; namely for government to increase funding from 0.7% to a more internationally comparable rate of 1% of GDP. A more complex issue is whether the additional money should go to NSFAS or to the institutions directly: there is an argument that if it goes to NSFAS with government regulating fees, then the system will be on a cyclical bailout path.

More complex, and also very difficult to implement, would be a differentiated fee system. What is easy and morally defensible is free higher education for the very poor (e.g. an annual income below R120 000). Nowhere in the developing world are loans for this group successful because loan schemes depend on high graduate employment (and we know both the greatest failure and graduate unemployment rates are amongst the poor). Furthermore, many of the poor work in the informal sector where it is very difficult to collect taxes and debt.[17]

Also not that complex to implement, and morally very defensible, is that the rich must pay more. While it was laudable that the children of the struggle veterans marched with posters demanding free higher education, they should have carried a second poster which said: 'We will pay more.' If one assumes that the annual income of their families is around R1 million, then paying R80 000 (NSFAS estimates of average annual total fee and living costs) would be less than 10% of their income. If these students went to the UK or the USA they would pay three to five times more. A CHET study on the PhD found that one of the reasons for the influx of students from the rest of Africa to South African doctoral programmes is that at a South African university ranked by Shanghai in the top 500 in the world, it costs just over $10 000 for a year of fulltime study, compared to around $30 000 in the UK and over $50 000 at a top US university![18]

15 Staff reporter (2015) 'Business leadership meets Ramaphosa in the 'war room' over Eskom' in *Times Live*, 20 March.
16 DHET (2013) *Report of the Ministerial Committee for the Review of the Funding of Universities.*
17 Barr (2004) 'Higher education funding' in *Oxford Review of Economic Policy*, 20(2), pp. 264 -283.
18 N. Cloete, J. Mouton & C. Sheppard (2015) *Doctoral education in South Africa: Policy, discourse and data.*

Through Pikketty's lens, it is perhaps not surprising that in the world's most unequal country, higher education for the rich is almost free.

5. The missing middle

By far the most complex group is what NSFAS insiders call the 'missing middle' and *The Cape Argus* refer to as 'gap' families.[19] This group does not qualify for NSFAS funding, and at the lower middle class end, not easily for bank loans. The lead article in *The Cape Argus* (Monday 2 November), the first informative (beyond student actions and slogans) newspaper report on the fees crisis, describes in detail a middle class family comprising a mother as teacher, a father as a media worker and two girls at two different Cape Town tertiary institutions (not UCT or Stellenbosch). It shows that their living costs in a lower middle class suburb (Brackenfell) amounts to around R17 000 per month, and their combined income is R20 000 – this leaves R3 000 for entertainment and education. The article also shows that having two children in tertiary education was not only unaffordable, but it also counted against them in getting financial assistance. China had a one child policy; in South Africa if you are in this middle group you can have many children, but only one at university!

Matthew Lester, Professor of Tax at Rhodes shows that for the about half a million South Africans who earn more than R500 000 per annum, university education is very affordable; for the "rest it is beyond the means of most South African households".[20]

For the rich, higher education in South Africa is a bargain; for the gifted poor it is affordable through financial aid, but if the middle is missing then South Africa is heading for one of two scenarios; a series of Arab spring-type uprisings, or, as Piketty hinted, a more serious French style revolution. It is the missing middle which is not only the backbone of higher education worldwide, but a productive well-educated middle class is also the glue that holds society together.

19 Z. Dano (2015) 'Not poor enough for student financial aid' in Cape Argus, 2 November.
20 M. Lester (2015) 'University out of reach. Current fee model unsustainable' in BizNews.com, 20 October.

Free higher education sounds very revolutionary, and it is an appealing mobilising 'cry', but in a developing country it is financially, empirically and morally wrong – the poster should read "*affordable higher education for all*" – with a clear understanding that affordable means different costs for different groups in society.

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Can Social Impact Bonds (SIBs) be a solution for the higher education funding crisis in South Africa?

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The National Student Financial Aid Scheme (NSFAS)

1. Introduction

> Social Impact Bonds are an innovative method of financing social programmes in which governments partner with service providers and private sector investors to fund social programmes. Investors are repaid if and when improved social outcomes are achieved. Thus, government pays only if the services are successful at meeting the needs of its citizens.
>
> Kippy Joseph, Rockefeller Foundation, 2013

According to various evidence-based research studies, the demand for public funding of higher education has exceeded supply, and this has created the urgency for drastic measures to solve this problem. The spectacle of violent student protests against increasing fees across higher education institutions, and the demands for free education, have further exacerbated the pressure on diminishing resources directed towards higher education funding. Recently, Social Impact Bonds (SIBs) as an option have attracted considerable interest from analysts about their potential to solve the funding crisis in higher education. Some people maintain that SIBs bring a game-changing approach of rewarding investment in successful social programmes, with real financial returns. This paper supports the notion that SIBs can serve

1 These are personal perspectives of the author and do not necessarily reflect the position of NSFAS.

as viable instruments to curb the shortfall in funding in higher education in South Africa. It argues that SIBs are different from other financing tools because they allow governments to raise private sector funds to provide service producers' capital to complete a task and to achieve pre-determined outcomes. It concludes that SIBs constitute an innovative and flexible solution that has the potential to solve the funding crisis in higher education.

The decline in government funding of higher education, along with rapidly rising costs of the different services and products that universities have to provide, have led to steady increases in student outlays over the last decade.[2] While there are there are no indications that costs will decrease, neither are there signals, despite increased calls from student movements, that one day university education will be *free*, given the prevailing socio-economic conditions.[3] However, the recent spectacle of violent student protests across the higher education institutions has shown that there is a need for a dramatic shift in funding patterns.[4] Of utmost importance is that the South African government has tried to reconcile the needs of the historically disadvantaged students to access higher education, and the rising costs of a degree, through the National Student Financial Aid Scheme (NSFAS). It should be noted that higher education in South Africa is largely state funded. Over the years, state spending on universities increased from R6.7 billion in 2000 to R23.4 billion in 2011. It was reported that in the 2012/13 financial year, the higher education and training sector was allocated R31.5 billion, with universities and the Technical and Vocational Education and Training (TVET) colleges receiving R20.9 billion and R4.8 billion, respectively. It is anticipated that the budget for higher education institutions will increase to R24.6 billion by 2016.[5]

The salient questions are: can Social Impact Bonds (SIBs) offer an alternative solutions to the funding challenges in higher education in South Africa? Are the SIBs relevant and applicable to the South African context? This paper does not attempt to answer all these questions, but it focuses on what SIBs can offer in an effort to mitigate the challenges around higher

2 S. Hwenha (2013) 'Increasing access and support to tertiary education. Lessons learnt from CSI-funded programmes in South Africa' (presentation).
3 M. Letseka (2007) 'Why Students leave: the problem of high university dropout rates'' in *HSRC Review,* 5(3), p. 8-9.
4 M. Makoni (2014) 'Higher education is not cheap' in *University World News*, 24 October.
5 Hwenha (2013) 'Increasing access and support to tertiary education. Lessons learnt from CSI-funded programmes in South Africa' (presentation).

education funding. According to Bhorat and Van der Westhuizen, the current socio-economic climate in South Africa has opened the door for a new developmental paradigm which requires investing in products and services that aid socio-economic development, with the express aim of making a profit.[6] This means there is a new dimension that could potentially offer solutions to the higher education funding crisis.

The paper begins with the focus on the role of the National Student Financial Aid Scheme (NSFAS) in higher education; this is followed by the examination of the concept of SIBs and its distinct stages. It concludes with an attempt to answer the question whether SIBs can provide a solution to the challenges of higher education financing in South Africa.

2. The national student financial aid scheme (NSFAS)

The government established the NSFAS in 1996 to ensure that academically-able students without financial resources can attend higher education. The NSFAS also raises funds, recovers loans and conducts research for the better utilisation of financial resources. While most of NSFAS's funding comes from the government, other sources of funding are private sector and donor agencies. Despite these sources of funding, the current financial aid is still inadequate to meet the needs of students from poor communities. According to the NSFAS, loans allocated for students have over the years increased substantially from R441 million in 1999, which assisted 29 176 students, to R9 billion in 2014, which assisted 414 802 students.[7] Despite the budget increases, the growth in funds has not kept pace with the ever-increasing demand.[8] The available funding for higher and further education and training does not provide for the estimated 2.8 million (41,6%) young people between the ages of 18 and 24 who are not

6 H. Bhorat & C. Van der Westhuizen (2009) *Poverty, inequality and the nature of economic growth in South Africa.*
7 NSFAS (2015) *2014/2015 annual report: Toward a student-centred approach.*
8 H. Bhorat & C. Van der Westhuizen (2009) *Poverty, inequality and the nature of economic growth in South Africa.*

in employment, or in education or training (NEET). Among the youth who are in the NEET category, more than 60% have completed Grades 10, 11 or 12.[9] The NSFAS pays for tuition, accommodation, books and living expenses for those who qualify. Forty percent of the loans are converted to bursaries every year: when a student passes all his or her courses, the full amount of the loan for the final year of study becomes a bursary when the student graduates. The NSFAS has introduced a new student-centred model in 2014 which is yet to be fully rolled-out, which uses an automated method of determining financial means. With the new model, the NSFAS has disbursed R1.2 billion to 65 550 students at eleven universities and colleges where the model has been piloted.[10]

3. What are social impact bonds (SIBs)?

SIBs are outcomes-based contracts between governments and private sectors. Private funding is used to scaleup services and test innovations, and the government only pays for success.[11] According to the *Investopedia*, a SIB is "a contract with the public sector or governing authority, whereby it pays for better social outcomes in certain areas and passes on part of the savings achieved to investors. A social impact bond (SIB) is not a bond, per se, since repayment and return on investment are contingent upon the achievement of desired social outcomes; if the objectives are not achieved, investors receive neither a return nor repayment of principal."[12]

Another definition, from Social Finance Homeless, is that a SIB "is a contract with the public sector in which a commitment is made to pay for improved social outcomes that result in public sector savings".[13] According to Horesh, social impact bonds are forms of investments that are aimed at tackling social challenges that bring together capital and expertise

9 N. Cloete (ed.) (2009) *Responding to the education needs of post-school youth. Determining the scope of the problem and developing a capacity-building model.*
10 NSFAS (2015) 2014/2015 annual report: Toward a student-centred approach.
11 Branson Centre (2011) *The Young Upstarts Report*.
12 See www.investopedia.com.
13 See www.socialfinance.org.uk.

from across the public, private and not-for-profit sectors.[14] The similarities between the definitions relate to a social contract, public-private partnerships and payment for successes.

SIBs have the potential to improve results, overcome barriers to social innovation, and encourage investments in cost-saving preventative services. They do this by ensuring that public funding goes only to those interventions that can clearly demonstrate their impact through rigorous outcome-based performance measures, transferring the risk of programme failure to the private sector, and providing an effective springboard from which state and local governments can determine which interventions work before scaling up successful innovations.

SIBs can be used to finance projects that have quantifiable social outcomes in the near future. Significantly, the repayment is often subjected to evaluation of success. This means that the important feature of SIBs is success: a project must have a well-defined scope and clear goals. The goals must be measurable and quantifiable, whether based on incidence or prevalence. The performance must also be audited by third parties. This characteristic adds transparency to the public services under analysis.[15]

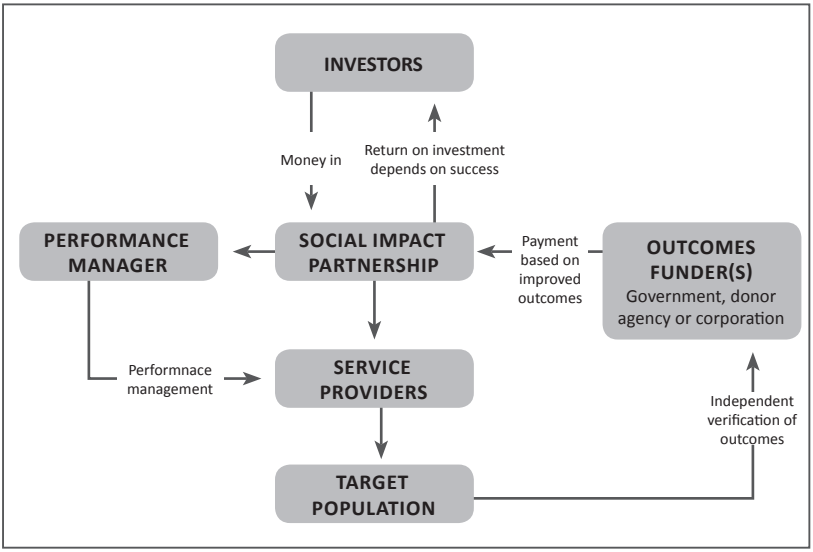
4. Stages of SIBs

- Capital is raised from private investors.
- The proceeds are transferred to service providers who draw down the funds to implement programmes.
- As service providers improve social outcomes, they reduce demand for more costly services.
- An independent evaluator measures performance against agreed outcomes set out in the SIBs contract. If the outcomes are met, government pays the intermediary a percentage of returns and retains the rest. If the outcomes have not been met, government owes nothing.

14 R. Horesh (2015) 'Social Policy Bonds' in Socialgoals.com (blog).
15 Ibid.

- If outcomes are achieved, investors are repaid their principal plus a rate of return, which can be structured on a sliding scale basis: the better the outcomes the higher the return.

Figure 1: Stages of SIBs



Source: Bertha Centre (2004) 'Final Policy Paper: Exploration of Social Impact Bonds for SME Development' (paper), p. 12.

SIBs are often referred to as the *Pay for Success models*: private investors invest capital and manage public projects, usually aimed at improving social outcomes for at-risk individuals, with the goal of reducing government spending in the long-term.[16] The catch is that private investors front all the costs and will be paid back a financial return by the government, if and only if, social outcomes are improved based on some standard measurement.[17]

16 Ibid.
17 M. Mulvaney & L. Kriegler (2014) 'Thinking about Social Impact Bonds in the South African context' (research paper).

5. The relevance of SIBs to South African higher education

The challenges around higher education have been eloquently documented elsewhere and I have no intention to repeat them.[18] However, it should be noted that the cost of higher education can be reduced in South Africa if universities were to cut costs, contain wastage and operate efficiently. Some people maintain that perhaps rethinking on the modes of delivery, such as distance education and online education could offer solutions to the challenges of funding of higher education. The application of SIBs requires an in-depth analysis of key factors, which are laid out along the development framework below. A clear, analytical understanding of each of these elements is essential to designing robust SIBs concepts that could be useful for South Africa's higher education system.

Table 1: Stages of SIBs

Social Issue (Higher Education)	Target population	Intervention	Outcomes Metrics
What problems has the existing system found difficult to solve?	Which group of service users would most benefit?	What services could improve outcomes for this group?	How should success be measured and paid for?

Source: Bertha Centre (2004) 'Final Policy Paper: Exploration of Social Impact Bonds for SME Development' (paper).

Defining the social issue

The demand for higher education funding has increased considerably. Demand has exceeded supply.

Defining the target group

A key component of SIBs is that they seek to have some defined, measureable impact on a specified target population or group. The target group is the youth aged between 18 to 24 years, mostly from poor and working-class families in South Africa.

18 See L. Moeketsi & M. Breier (2008) 'Higher education dropout and poverty' in S. Maile (ed.) *Education and Poverty Reduction Strategies: Issues of Policy.*

Geography

Geographic specificity is very important. This is important, as something that has worked elsewhere may not be successful in another part of the world. The socio-economic indicators in South Africa need to be taken into consideration before the application or the usage of the SIBs.

It should be noted that SIBs are a complicated source of funding which is complex to implement. In most cases, the investors in SIBs have to spend a lot of time and money working out whether they will get their money back. Secondly, through the process of social investment, social enterprises and SIBs are part of a funding mix that includes loans and traditional grants. Thirdly, SIBs are significant funding mechanisms to consider where addressing the social issue leads to cost savings for government.[19]

6. Can SIBs offer solutions to the funding in South African higher education?

Despite the role played by the NSFAS and its demonstrable impact, there are a host of challenges that continue to pose problems to the financing of higher education, a situation which arguably calls for closer partnerships with the private sector or investors. These are:

Underfunding

The NSFAS's major shortcoming is that funding falls far short of demand. Current estimates are that NSFAS has less than half of the funds it needs to meet the demand for financial aid from qualifying applicants, even at current participation rates. Although NSFAS has received a steadily increasing budgetary allocation, its resources lag significantly behind need.

19 R. Horesh (2015) 'Social Policy Bonds' in Socialgoals.com (blog).

High dropout, low graduation rates

Cohort studies of NSFAS-funded students studying three- and four-year degrees show that they have a 60% dropout rate, which is almost double the dropout rate recorded for all students. Also, the NSFAS-funded students' graduation rate within regulation time is less than half that for all students.

Means test

The current structure of the means test and the way it is applied by institutions is inappropriate, inequitable and requires revision. In particular, its ceiling excludes children from many families who are poor and cannot afford to send their children to attend university, but who do not qualify on the means test.

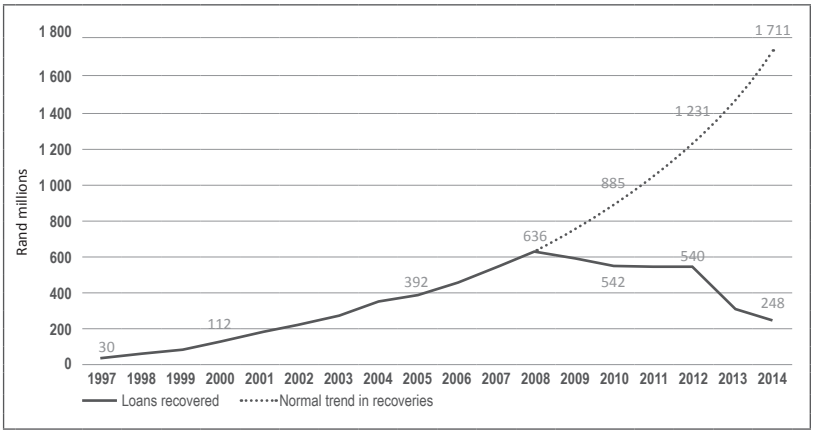
Recoveries of loans

NSFAS's debt management capabilities are poor, and have been further undermined by various policy decisions limiting NSFAS's scope to use normal tools for managing debt. This has led to a failure in the NSFAS debt recoveries, which cost the NSFAS (and government) an estimated R4.3 billion between 2009 and 2014.[20] This loss in recoveries revenue has meant that NSFAS has been unable to fund about 142 000 students during the same period.

The NSFAS functions as a loan scheme; this means that there will always be reliance on the government grants for it to remain viable and to increase its capacity. However, loan recoveries are an important source of funding that could realistically provide 35% of the required funding. In light of these challenges, the salient questions are: what can SIBs offer that is different? Are there any valuable solutions they could offer to fund higher education?

20 National Treasury (2015) 'NSFAS Performance and Expenditure Review (PER)' (draft report).

Figure 2: NSFAS loan recoveries versus a normal growth trajectory



Source: National Treasury (2015) 'NSFAS Performance and Expenditure Review (PER)' (draft report).

According to the Branson Centre of Entrepreneurship 2011, SIBS provide a mechanism to crowd in other parts of the economy into *genuine risk-sharing partnerships* that bring the best of government, private investors, and NGOs to address the problem.[21]

Other benefits are:

- SIBs allow for more innovation and flexibility in finding programmes that work. Many non-profit and government programmes are judged by what is done or how much is spent, rather than by what is achieved. Where success is bound by activities rather than outcomes, the ability to innovate and improve programmes is suffocated.
- Governments are not typically set up to recognise innovation. Promising but untested social programmes that can be costly and carry a high risk of failure are understandably avoided. SIBs transfer the risk of financing innovation to the private sector, which is typically better equipped to identify interesting innovation and to price risk.
- SIBs can save the fiscus money. If a programme is unsuccessful, the government pays nothing. If it succeeds, the returns to investors are

21 Branson Centre (2011) *The Young Upstarts Report.*

funded from the savings generated by the intervention. SIBs drive rigour and accountability as evaluation results are made public. Data is generated on what works and what does not.

- Successful SIBs requires excellent data; South Africa collects sufficient data on enrolments, graduation outputs, drop-outs and the length of time that students take to complete a degree. This information can be used to measure results and attribute success to the programme, as well as ensure compliance with public finance rules and the generation of high net savings to the government. A ring-fenced SIBs innovation fund that is administered by the National Treasury could be considered. A specific consideration could also be given to establishing specific capacity within the National Treasury to provide technical assistance to role-players in higher education such as universities, student's bodies and all other actors to explore the best ways of how to explore SIBs.[22]

7. Conclusion

Many ideas and policies have emerged to shape the funding of higher education in South Africa; however, it is obvious that SIBs offer new ways of driving innovation to solve the funding challenges. There is compelling evidence that public-private partnerships could assist in resolving the challenges around higher education funding. Given the greater commitment of the private sector, such as the banking sector and corporate entities, the time is ripe for such initiatives to be implemented. SIBs offer a game-changing approach of rewarding investment in successful social programmes with real financial returns. Nevertheless, SIBs are a complicated source of funding as investors in SIBs have to spend a lot of time and money working out whether they will get their money back. This might take time to be fully understood. The prominent development is that the South African National Treasury has expressed an interest in SIBs, which shows intent to

22 Mulvaney & Kriegler (2014) 'Thinking about Social Impact Bonds in the South African context' (research paper).

engage. There are a range of private investors and trusts which have shown a keen interest in this financing mode. A possible solution to the financing or funding of higher education through SIBs to be considered would be a ring-fenced SIBs innovation fund that will be administered by the National Treasury. Consideration should also be given to establishing specific capacity within the National Treasury to provide technical assistance to role-players exploring SIBs.

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Perspectives on student funding – Credit market, social protection and pyramid inversion

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1. Introduction

While uncomfortable for university administrators and the Government, the 2015 student protests in South Africa focused the attention on a critical issue, efficient and equitable funding of university students, that continues to challenge rich and poor societies alike. How South Africa resolves this issue will be a significant determinant of the country's future prosperity and equity. This note argues that in trying to find a solution we should focus more on creating an effective and affordable credit market than on budgeting (finding the money) and that the key elements of this student credit market should be universal access (for those who are accepted at university) to state loans with income-contingent repayment of loans through the tax system. The false equity and economy of a targeted or means-tested system should be avoided. In addition, the interests of other sub-sectors of education, including technical and vocational education, should not be sacrificed for higher or university education. In other words, the funding solution should not over-incentivise university education at the cost of technical and vocational education. The paper also notes that part of the higher education funding problem relates closely to issues of social protection and it is argued that we have not

1 These are personal perspectives of the author and do not necessarily reflect the position of Government or the DPME.

interrogated the issue sufficiently from this, social protection, perspective. In addition to finding technical and governance solutions, student funding issues will require mechanisms or institutions to generate sufficient social consensus around a solution. This, and not design, funding or governance issues, may be the real challenge.

2. Overview

While the first phase of the fees battle resulted in a victory for students (a zero fee increase and substantial additions to student loan funding announced in early 2016), many are concerned that the victory may be empty (and disastrous for the country in the long run) as it could undermine the quality of our university sector. This is arguably what has run its course on purely state-funded schools and health facilities.

A first view that seems to be quite common is that the protest, and especially intimidation and violence which went with it, points to what an unhealthy and helpless society we have become, unable to resolve our challenges in a timely and peaceful way. A second view is often associated with the National Treasury, but is also more widely held. It dooms us to inaction by saying that it is clear that university education is a priority, but there is no more funding to allocate to universities unless we cut the money from other departments – in brief, *there is no money (and we have to tighten our belts)*. A third view is that the state (society) should respond by absorbing in some way the fees payable by poor students but that students from middle class and rich households should continue to pay fees – some arguing that South African university fees are still relatively low compared to international rates so they could even be increased significantly for higher income groups. In other words, the argument is that that we should have a targeted or means-tested student funding system with the middle and upper classes paying their own fees (either from current household sources or from loans that will have to be repaid by the student or their household) and the higher education being 'fee-free' for the poor.

In the context of these ongoing debates, the following points are made:

First, that the recent student protest confirms that the ladders to a good life in South Africa are few, narrow and congested. Some young people do not even get close, some fall off and others fear falling off. Some have a tough battle clawing their way to the top. Hence there is substantial frustration, anxiety and anger. We need to build more ladders and widen them. And we should not damn the messengers; we should empathise with them and fix the ladders. Secondly, because there are large returns to university study, the problem of funding students is a credit market problem. Because of some characteristics of the market, sound investments are often not financed. Thus the challenge for the state is not in the first place to 'find the money', but to support the development of an efficient credit market, actual or virtual. Thirdly, while means-testing or targeting in social protection systems are often argued for on the basis of avoiding leakage, targeting systems are costly, are rarely very effective and fair and can lead to all kinds of perverse incentives and unintended consequences. Universal or categorical systems – with benefits going to specific categories of people without any income or means test – could therefore be more efficient and fair. Fourthly, it is clear that we should not incentivise university education relative to technical and vocational education as it will promote inappropriate distribution of enrolments. Lastly, the range of solutions that different societies have settled on for student funding point to the fact that there is not one correct technical solution that applies to all societies. Through learning and negotiation, South Africans will have to innovate and divine a solution that fits the context and that is supported by the majority of South Africans. The students have therefore thrown down a major challenge to our "national imagination"[2] (how to fund vibrant universities effectively and equitably in the South African context) and to our institutions for building a national consensus (how to mobilise South Africans behind a university funding solution).

2 To use the words of A.C. Bawa (2015) 'Reflections on higher education transformation' (discussion paper).

3. The meaning of the protest

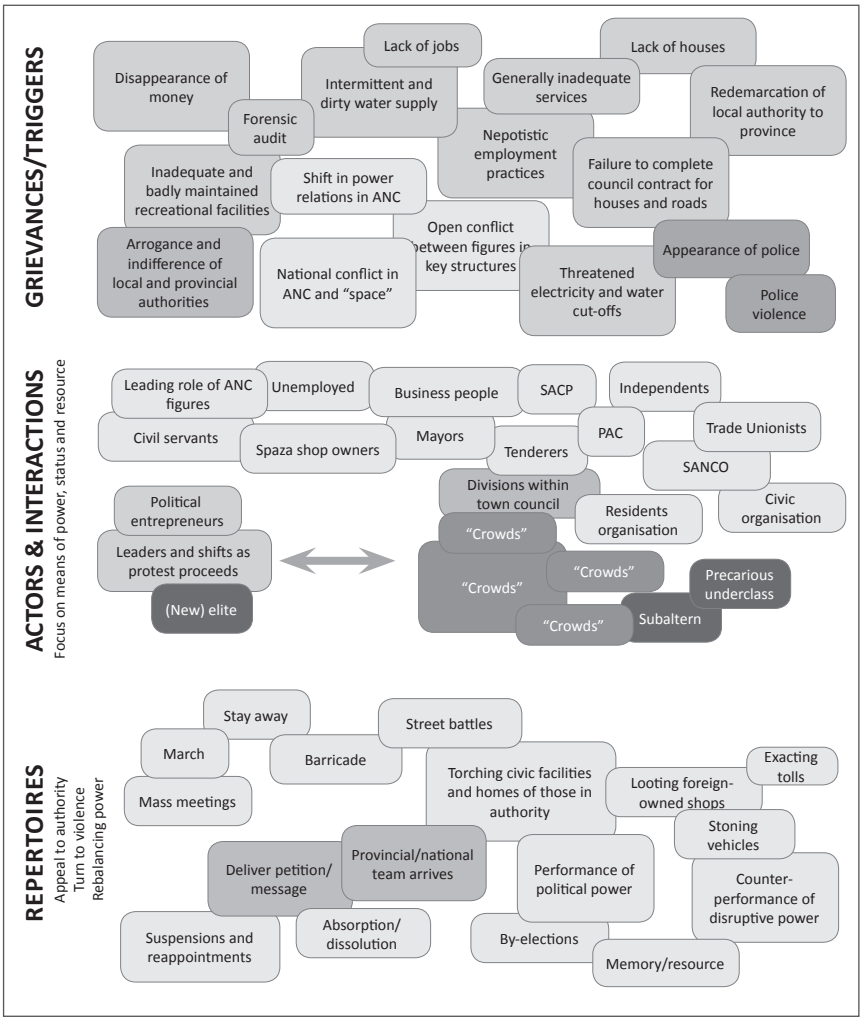
> "... vandals who are mindlessly destroying not only a beautiful campus but an institution that had been forged out of blood, sweat and tears."[3]

Above is how Rhoda Kadalie reacted to protest and violence at the University of the Western Cape in late November 2015. Others also expressed dismay at the violence and find the violence unacceptable.[4] These perspectives, however, fail to move towards understanding this instance of violence in a society in which violence has been endemic, at least since the colonists arrived. Dismay and disapproval do not provide an adequate basis for moving towards a resolution. While there are limited in-depth analyses of the factors behind recent student protest in South Africa, some work has been done to disentangle the factors related to the more general South African community protests over the last decade or so.

In their 2011 study of community protest and xenophobic violence, Karl von Holdt and his colleagues carefully document and unpack elements and processes associated with the violent protest in South Africa at the end of the 2000s.[5] As suggested in Figure 1 below, the factors that shape the trajectory of these protests are multiple and intricate. Not only is there a large range of actors with different interests and many complex interactions between them, there are many different 'triggers' and a range of actions or 'repertoires'. Clearly, each incident of protest will be unique, responding to a specific context. What seems to Kadalie to be 'mindless' could therefore perhaps rather be equated to a complex chain of reactions, an unstable chemical concoction, which may or may not reflect some overarching 'logic'. One is reminded of Cooper's comment on the 'series of strikes and riots' in the Caribbean between 1935 and 1938: "Officials, once they got beyond their initial tendency to attribute all disorder to irrationality of backward peoples, came to realise that poverty and hopelessness lay behind the 'disorders'."[6]

3 R. Kadalie (2015) 'The wanton destruction of UWC' in *Politicsweb*, November 18.
4 See, for example, J. Evans (2016) 'Wits on high alert after UCT protests' in *News24*, 17 February.
5 K. Von Holdt, M. Langa, S. Malopo, N. Mogapi, K. Ngubeni, J. Dlamini & A. Kirsten (2011) *The smoke that calls: Insurgent citizenship, collective violence and the struggle for a place in the new South Africa: Eight case studies of community protest and xenophobic violence.*
6 F. Cooper (2014) *Africa in the world: Capitalism, empire, nation-state.*

Figure 1. Triggers, actors and repertoires of protest [elements extracted from Von Holdt et al. 2011, *The Smoke that Calls*.]



From these data, and in spite of complexity and the diversity across different places and times, the researchers sketch a basic process where multiple centres of power within organisations and political parties lead to 'paralysed service delivery', which in turn leads to deepening inequality and 'differentiated citizenship'. People are 'spurned' and face structural denial of agency over their lives. Hence we find 'insurgent citizenship and protest'.

And, taking a further step back, the researchers tell us that, "The paper concludes that rapid processes of class formation – through which on the one hand a new elite is emerging and, on the other, a large underclass of unemployed and precariously employed, together with the dislocations of the transition from apartheid to democracy – is generating fierce struggles over inclusion and exclusion both within the elite, between elites and subalterns, and within the subaltern classes".[7]

Some of these motive forces and dynamics can also be discerned in the higher education protests. Young South Africans want to improve their lives and the lives of their parents and families and one of the only routes to that in South African society, given the paucity and inefficiency of other training routes and the perils of the labour market, is a university or higher education. The role of post-school education in improving life chance and opportunities has been confirmed repeatedly. In 2009, Branson *et al.* found, "consistently strong returns to tertiary education in both employment and in the earnings of the employed".[8] In 2012 (but also based on 2008 data), Pellicer and Ranchod found, "both extremely high returns to education as well as a small fraction of people obtaining a tertiary education".[9]

In spite of the fruits of a higher education, many South Africans are blocked from pursuing the post-school education that they, and South Africa, can benefit from. Branson *et al*. identify a range of blockages: "eligibility for higher education", "financial obstacles", "lack of information on how to transition", the "application process" and "further frustrations (social, economic and educational) while studying".[10] They talk of "profound inequalities in accessing and benefitting from higher education". Under 'economic and social' factors, one could spell out the cost of accommodation and living while studying and the need to earn to contribute to the upkeep of families. Pellicer and Ranchod conclude that, "there appears to be sufficient evidence to suspect that South Africa is caught in an inequality trap where high inequality leads to low levels of skills accumulation, which in turn consolidates the high levels of inequality".[11]

It is therefore understandable that young South Africans are impatient,

7 Von Holdt *et al* (2011 *The smoke that calls*, p. 6; Subaltern as used by Von Holdt refers to the populations that are socially, politically and geographically outside of the hegemonic power structure of the colony and of the colonial homeland.
8 N. Branson, M. Leibbrandt & T.L. Zuze (2009) *The demand for tertiary education in South Africa.*
9 M. Pellicer & V. Ranchod (2012) 'Inequality traps and human capital accumulation in South Africa' (working paper).
10 Branson *et al.* (2009) *The demand for tertiary education in South Africa.*
11 Pellicer & Ranchod (2012) 'Inequality traps and human capital accumulation in South Africa' (working paper).

frustrated and angry – and in some cases, full of fear for the future. Graeme Bloch says that, "we need to actually understand that kids are very angry and very concerned about their own futures and about their jobs and employment, and about the sustainability of the campuses as well."[12] Chetty and Knaus' characterisation of South African campuses as 'killing fields', presumably because they kill off aspirations and prospects for a better life for many, points to the seriousness of the situation.[13]

Figure 2: Michelangelo Buonarotti: Creation of Adam (Sistine Chapel, Rome)

Source: ItalianRenaissance.org

Some, such as Michelangelo, have depicted the process of creation as a pretty, neat and orderly affair (See Figure 2). And it seems as if this is the image and the hope with which many South Africans work and to which they compare, and hence find inadequate, the reality of South African transformation and formation. When things get messy, they are judged in the harshest terms.

12 G. Bloch (2015) 'Free education is a worthy goal, but South Africa isn't ready for it yet' in *The Conversation,* October 22.
13 R. Chetty & C. Knaus (2016) 'Why South Africa's universities are in the grip of a class struggle' in *The Conversation*, January 13.

Figure 3: William Blake: Elohim creating Adam (Tate Gallery, London)

Source: Kingsacademy

Figure 4: William Blake: Satan exulting over Eve (J. Paul Getty Museum, Los Angeles)

Source: wikiart.org

The 'Blakean' view of creation is, however, more appropriate to South African processes of growth, change and transformation (See Figures 3 & 4). In contrast to Michelangelo's idyll, Blake's creation evokes disruption, pain and ambiguity; elements we also find in Von Holdt *et al*.[14] For example, they identify two potential and contradictory outcomes of violent community protest. On the one hand there is the 'emancipatory' effect and, on the other, the 'corrosive effects'. On the emancipatory side, the protest can empower and provide an avenue for agency and could "establish an alternative

14 Von Holdt et al (2011 *The smoke that calls.*

symbolic, moral and physical order". On the 'corrosive' side, protest provides "a cover for crime", is "aimed at the 'other'", "undermines public debate" and "reduces public participation", reinforces the "belief in violence to get things done" and leads to "revenge and cycles of violence". Outcomes are in the balance.

Bawa also points to potential positive dividends from student protests.[15] Referring to introspection at the time of great student foment in the United States in the early 1960s, he notes that, "Every society and perhaps every generation have needs for events and upheavals that give rise to such reflections [on the role of the university] so that at the very least there are notions of (social) understanding of what universities mean to societies".

4. The economic nature of the university funding challenge

"There is no money"[16]
"The Budget Constraint is a reality we cannot wish away"[17]

Many in the university sector are quite despondent about its future in the aftermath of the decision to not increase fees in 2015. The sense is that universities will not be properly compensated for the agreement not to increase fees, and that that the institutions will therefore slowly (or not so slowly) lose their capacity to teach well, to create knowledge and to drive innovation. Jonathan Jansen puts it graphically, "They will become skeletal structures, with drooping muscles, drained of their intellectual lifeblood and struggling to keep the old bones together".[18]

The refrain of 'no money' is becoming a more common one.[19] Fourie raises the absence of funding to deity, capitalizing 'Budget Constraint' (a number

15 A.C. Bawa (2012) 'South African Higher Education: At the centre of a cauldron of national imaginations' in *Social Research*, 79(3), pp. 669-694.
16 J. Jansen (2015) 'A thousand cuts, and then death' in *The Times*, October 29.
17 J. Fourie (2015) 'University fees: The impossible trinity of higher education' (blog post).
18 Jansen (2015) 'A thousand cuts, and then death' in *The Times*, October 29.
19 See also, Bloch (2015) 'Free education is a worthy goal, but South Africa isn't ready for it yet' in *The Conversation*, October 22.

of times) in a blog.[20] One must of course have some sympathy with this pessimistic view. We have seen the decline of a range of our public institutions over the last two decades or so: public hospitals seem the eminent example, but it is also a story we can tell about public schools in poor communities, policing, power generation and postal services. While some see the decline in quality as a result of typical government inefficiency and corruption – and governance is indeed a central issue – at least in some cases, the story is rather one of limited growth in resourcing in the face of a growing service delivery mandate. This is the sadly common spectre which Jansen fears.

However, the focus on budget constraints and the absence of current funds should not be overdone. The decision to spend on higher education is not only (or mostly) a decision about current consumption. It is an investment decision, the question then being, given the expected returns, should we fund the investment? If we fail to invest, we will never reap the benefits and we will lower possibilities and potential. Given the evidence of significant public and private returns to higher education investment, the question becomes why is society not prepared to invest strongly in the expansion of the sector? The answer could have two components: Firstly, the private credit market is risk averse, and in the absence of collateral (we cannot own humans and the poor do not have other collateral), will therefore not advance credit without guarantees from government or interest subsidies. From the perspective of students as well, private banking loans can be unaffordable as interest rates and fees are high in the South African banking sector.

Secondly, the question is about the public sector, and why it does not step in to make up for this 'market failure'. It seems in this case that the state is not looking at the higher education spending decision as an investment decision and treats higher education spending, and even loans, as current expenditure, possibly because they have no confidence that the investment will generate returns. A slightly alternative explanation would be that the State (or part of it, at least), has indeed grasped the nature of the education challenge and established the National Student Financial Aid Scheme to deal with it. The scheme's inability to deal adequately with the issue, although technically and principally being the right approach, again relates to the gap

20 Fourie (2015) 'University fees: The impossible trinity of higher education' (blog post).

between intention and implementation, something which is not uniquely South African.[21]

Looking at the failure to invest adequately in higher education as a credit market issue does not remove all complexities, but it does make for less despondency. Instead of just throwing our hands in the air and saying there is no money, the challenge becomes to build a really effective and fair 'market' for student debt. This means that the cost of borrowing and repayment must be kept low. Important tools towards this are to fund the scheme through government lending – because government can borrow more cheaply than the private sector – and also to use the tax system to recoup loans, building on an existing system which can be expanded, rather than building new systems. Fairness must be built in through income-contingent payments (on which more later).

There are some proposals to give the private sector a more important role in loan schemes to students, but there should be wariness on this score. While the South African financial services sector (banking, savings, pension and medical schemes) has been able to provide highly differentiated services to high-income individuals, they have been quite unable, as far as I can see, to provide services to low-income and even the bulk of middle-income South Africans. This is probably to be explained by the high cost of borrowing and operational costs (driven by high remuneration levels, also of executives) which impact significantly on the cost of production and hence the competitiveness of the South African economy.

It therefore seems that the fairly obvious solution, in a country such as South Africa with a strong tax revenue collection capacity, would be the three-pronged strategy from Nicholas Barr.[22] The Barr solution includes (1) deferred variable fees (2) income-contingent loan repayments (to a government-

21 Currently there are a range of explanations, which can be seen as competing or complementary, to explain why the NSFAS cannot respond more adequately to the student funding challenge. Some, like Cloete, point to political patronage and appointment of incompetent or interested board members and hence the range of governance issues; others, (like DHET), to credit regulations limiting the ability to extract repayments from successful students and in the past the failure to spend adequately on administrative systems and capacity has also been mentioned. Currently the hope is on a new chairperson of the Board that has been appointed, but it will always be almost impossible for individuals to transcend inherently fraught governance arrangements (N. Cloete (2015) 'Fees should not fall for all' in *Groundup*, 8 November; DHET (2015) 'NSFAS: Setting the Record Straight' in *Politicsweb*, 9 November); see also J.L. Pressman & A. Wildavsky (1973) *Implementation: How great expectations in Washington are dashed in Oakland. Or why it is amazing that Federal programs work at all – This being a saga of the Economic Development Administration as told by two sympathetic observers who seek to build morals on a foundation of ruined hope.*

22 N. Barr (2005) 'Financing Higher Education' in *Finance and Development* 42(2).

financed loan scheme) and (3) active measures to promote access, the latter including information about the "cost and benefits of university education". Barr adds that, "loans should be large enough to cover fees, and at least in richer countries, realistic living costs making higher education free at the point of use", and that, "loans should attract an interest rate broadly equal to government's cost of borrowing". The National Student Financial Aid Scheme arguably provides a strong base on which to build a much expanded and low-cost loan scheme. However, and this is a big however, this will depend on the ability to solve governance problems which have been so common in state entities.

While the Barr system has much to commend it, especially in a country which has already started on such a trajectory, there are very effective systems which work without fees – the Nordic countries in particular. In these countries, the absence of fees is mirrored in high tax to GDP ratios (generally 40% and higher in 2008 against an OECD average and UK level of around 36% and the US at 27.3%).[23] Barr argues that, "income-contingent loans are logically equivalent to free higher education financed by an income-related graduate contribution". In some ways, a progressive income tax system will have many of the elements of such a graduate contribution. Hence, there are ways of tweaking a benefit and tax system to mimic a loan system, with the benefits that a lot of the costs of differentiation, marketing and competition on non-relevant aspects, which fees and market competition between institutions entail, get cut out. Barr argues that differential fees promote healthy competition between institutions. I think one could also build the argument that a lot of this competition is with regard to irrelevant aspects (especially in a global world of enhanced conspicuous consumption), and costly in terms of resources. Piketty poses the dilemma in a slightly different way. After acknowledging that countries where we find no-fee systems generate more upward mobility for the poor as well as more equal societies, he goes on to say that, "[t]uition fees create an unacceptable inequality of access, but they foster the independence, prosperity and energy that make US universities the envy of the world".[24] In the next section we focus on the issue of equity and targeting.

23 OECD Tax statistics, 2010 from https://data.oecd.org/tax/tax-revenue.htm.
24 T. Piketty (2014) *Capital in the twenty-first century*, p. 486.

5. Targeting and means-testing – the relevance of social protection principles and 'fit'

In current debates, many have argued that fee-free, or no-fee, higher education will benefit the rich disproportionately. A bit like a subsidy on bread which the wealthy prefer (rye if you want), and which the poor cannot afford. Such an anticipated regressive impact then serves as the argument for a tightly targeted system where fees are left to be determined by institutions, and the state intervenes through core funding to the system (ensuring sufficient private investment in the face of significant public benefits or externalities associated with university education), and an affordable loan system or grants ('aid') to poor students. This is Fourie's argument, "I would argue for better targeted support for poorer students … increase student fees by 25%. … Then I would use the additional 15% income from these fee increases [above the initially proposed increases for 2016] to provide bursaries for students that come from poor backgrounds. A multi-tier or sliding scale system – where, for example, those with parents earning above R500 000 per annum pay R150 000, and those earning less than R50 000 pay R15 000 …"[25]

In contrast to this approach of treating the rich and the poor differently, Barr's proposal is for a universal scheme: all who get accepted into a university qualify for state loans on the same terms, with repayment contingent on earnings.[26] His arguments for universal loans are both 'philosophical' and 'economic'. On philosophical grounds, he argues that it is, "better to target assistance on where a person ends up and not where he/she starts", and that, "in today's world we should treat students as adults", that is, not as linked to the households of their parents. On economic grounds, he argues that, *inter alia*, many students from non-poor families also need support as there is evidence showing that some parents with apparently sufficient means may not be willing or able to provide support to students.

25 Fourie (2015) 'University fees: The impossible trinity of higher education' (blog post).
26 Barr (2005) 'Financing Higher Education' in *Finance and Development* 42(2).

In addition to Barr's argument against means-testing, one could add that targeting through means-testing is often costly and imperfect (especially where some incomes are badly documented and household structures quite flexible), also leading to unfairness, and that it could have all kinds of perverse incentives and unintended consequences. In South Africa, the arguments for the universality of the state old-age pension seem to have been accepted, and implementation is being delayed by financing concerns. Our other large grant, the child support grant, is means-tested but in quite an 'inclusive' way, which implies that it is quite rough and ready (does not make fine means/income distinctions as are proposed for the student funding schemes).

The Lund Committee, in proposing a categorical child support grant for South Africa, and reluctantly agreeing to means-testing only as a 'phasing technique', also proposed that the grant should "follow the child[ren]" wherever they are, and in whatever shape household they are found.[27] The Committee clearly saw the difficulties, and indeed the incoherence, of moving forward as if there is a standard South African family type with income streams that can be easily observed for the purpose of means-testing.

As we have seen, Piketty objects to state loans with income-contingent payments to the upper and middle classes (presumably only in the absence of effective capital taxes), as they are seen as regressive: "Australia and Britain offer 'income-contingent loans' to students of modest background. These are not repaid until the graduates achieve a certain level of income. This is tantamount to a supplementary income tax on students of modest background, while students from wealthier backgrounds received (usually untaxed) gifts from their parents".[28] This is clearly a matter that needs to be considered further, but there are counter arguments.

Focusing on social protection principles in designing a student funding system, however, also raises other issues. Firstly, university students are only one category of young people without an income. To them we need to add unemployed youth, and youth in other education and training situations such as Technical and Vocational Education and Training (TVET) colleges or in apprenticeship relations. If society is prepared to pick up the living cost of university students, it is unfair to cut the other young (and especially the unemployed) out of any support. While it may be possible to argue for

27 F. Lund (2008) *Changing social policy – The child support grant in South Africa.*
28 Piketty (2014) *Capital in the twenty-first century*, p. 633.

prioritising university students on the basis that the support will be repaid (through a loan scheme), it is clear that this will create incentives to use the university as social protection (unemployment insurance) and may distort numbers and lower output rates.

Secondly, there are complex interactions between our social protection system, job search, employment, and education. Ardington points out that, "In the absence of alternative sources of income for unemployed youth, the old-age pension is often used to cross-subsidise job search", and that, "the recourse to the old-age pension as a means of acquiring cash income to alleviate credit constraints facing youth would appear to suggest the need for a more directly youth-targeted cash transfer".[29] She, however, goes further and suggests that, "the indirect connection between grants, education and employment seems important, as it signals the need for a multi-pronged solution that goes beyond the introduction of a youth-targeted cash transfer. For example, social security should be accompanied by support for matric completion and lower tertiary education costs (or increased access to credit), given that the impact of each intervention in isolation would be limited".

Clearly, the issues related to student support and social protection are involved and we have not started addressing them systematically. As Phillips argues, society's decisions about some of these support systems link back deeply into our value systems.[30]

6. Inverting the inverted pyramid

It is a common generalisation that the South African post-school education system is top-heavy, or an inverted pyramid which needs to be turned around.[31] This is because substantially more learners are enrolled for 'academic qualifications' than for vocational education (qualifications at Technical and Vocational Education and Training (TVET) Institutions). The degree courses and other qualifications obtained at universities are often more time-consuming and expensive and, it is sometimes argued, not always as good as vocational

29 C. Ardington (2013) 'Youth unemployment and docial protection' (research brief).
30 M. Phillips (2013) 'College in Sweden is free but students still have a ton of debt. How can that be?' in *Quartz*, May 31.
31 See, for example, N. Cloete (2013) 'Mixed signals in post-school system' in *Mail and Guardian*, 15 February.

institutions in readying young people for actual work. In considering funding for higher education institutions, we also have to consider these vocational institutions and young people who are unemployed or have dropped out of the labour market (stopped searching for jobs because of costs, despondency and so on). Indeed, in considering higher education funding, we must also keep in mind the resourcing situation for basic education.[32]

In 2013, there were approximately 19 million South Africans aged 15-35, using Statistics South Africa's definition of youth.[33] In the age cohorts most directly relevant to post-school education (those 18-24), there were 5.2 million South Africans. Of those in the 18-24 bracket, Statistics South Africa estimated that around 3 million were not in employment or in education and training. They were therefore either unemployed (looking for a job but not finding one), or out of the labour market for some reason (being a discouraged work-seeker or a homemaker and so on). This is a large proportion of the youth and reflects a social crisis which has to be balanced with, and viewed in the context of, the higher education funding crisis.

Compared to the post-school population (those 18-24) of about 5.2 million, post-school education institutions enrolled about 2.2 million people. This number, as shown in Table 1, however, also includes adult education and training centres (which mostly would provide school level qualifications), and part-time students (they therefore do not reflect full-time equivalent students). Participation rates depend on the definition of post-school education and on the age cohort selected as the divisor. In 2013, full-time equivalent students in higher education and TVET institutions equaled 971 779, or 18.6% of the population 20-24 (13.3% of the population 18-24).

32 See for example, L. Chisholm (2015) 'University protests are important – but school fees also matter' in *The Conversation*, 20 January.

33 See www.statssa.gov.za/.

Table 1. Post-school sducation institutions and enrolments in South Africa, 2013

	Institutions	Enrolments
Higher education	**136**	**1 103 639**
Public	23	983 698
Private	113	119 941
Technical and Vocational	**677**	**794 250**
Public	50	639 618
Private	627	154 632
Adult Education	**3 212**	**257 823**
Public	3 150	249 507
Private	62	8 316
Total PSET	**4 025**	**2 155 712**

Source: DHET, 2015

Table 1, therefore, also identifies the fact that enrolment in higher education exceeds the enrolments in technical and vocational education. This gap is larger if looked at in terms of full-time equivalent students, with 665 857 full-time equivalents in higher education in 2013, and 305 922 in technical and vocational institutions. This distribution between the different subs-sectors is also reflected (and even larger than in enrolments) in state funding, with universities (excluding the National Student Financial Aid Scheme financing) receiving more than three times the amount allocated to TVET and Community Colleges in 2015/16 (See Table 2). Skills funding at R14.8 billion also outstripped the TVET and Community College spending of R8.5 billion in 2015/16.

Table 2. State funding of post-school education and training and skills training, 2011/12 to 2017/18

R billion	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18
Universities	**19.4**	**20.9**	**22.3**	**24.2**	**26.2**	**27.6**	**29.0**
Current subsidies	17.74	19.09	20.11	21.44	22.93	24.12	25.33
Capital subsidies	1.64	1.81	2.16	2.71	3.31	3.52	3.69
NSFAS	**4.0**	**5.2**	**5.8**	**6.1**	**6.4**	**6.8**	**7.2**
Institutional and operational	**0.1**	**0.1**	**0.3**	**0.1**	**0.2**	**0.2**	**0.2**
CHE	0.04	0.04	0.04	0.04	0.04	0.04	0.05
SAQA	0.04	0.05	0.05	0.06	0.05	0.06	0.06
HESA	0.00	0.01	0.01	0.01	0.01	0.01	0.01
Branch operational	0.01	0.04	0.16	0.04	0.05	0.05	0.04
TVET/CC	**6.2**	**6.9**	**7.7**	**8.1**	**8.5**	**9.0**	**9.4**
TVET transfers	0.87	0.97	1.08	1.15	1.14	1.20	1.26
AET transfers					0.06	0.06	0.06
Personnel	5.08	5.68	6.32	6.70	6.98	7.38	7.76
Other	0.26	0.23	0.25	0.25	0.34	0.35	0.35
Skills	**10.14**	**11.47**	**11.78**	**13.31**	**14.80**	**16.26**	**17.53**
SETAs (direct charge)	8.02	9.36	9.67	10.56	11.75	12.91	13.92
NSF (direct charge)	2.00	2.02	2.00	2.64	2.94	3.23	3.48
Other	0.11	0.09	0.10	0.11	0.11	0.12	0.13
Other	**0.27**	**0.60**	**0.73**	**0.34**	**0.37**	**0.39**	**0.43**
Total DHET	**40.05**	**45.17**	**48.46**	**52.19**	**56.53**	**60.23**	**63.72**

Source: National Treasury and own calculations

This inverted pyramid can also be looked at from the state funding perspective with the table above showing recent funding to the three layers of post-school education. What is noteworthy here is the relatively low spending on TVET colleges, and the relatively high amount being spent on skills funding, some of which has found its way to the college sector in recent years.

The funding system that is devised for university students must therefore also take into account the need to expand the college sector and to put the skills sector on a sound footing. It is necessary to multiply the ladders to a better life and not merely rely on the higher education system to generate mobility and prosperity.

7. How to find a solution – and sell it?

Government is quite often roundly condemned for, as it is alleged, having failed to adequately value and fund the university sector, for allowing the current situation of protest to erupt and for raising the fear of looming mediocrity and quality decline.[34]

But it is also clear that university funding is a perennial and difficult issue for governments. Piketty pronounces as follows, "It would be wrong, however, to imagine that unequal access to higher education is a problem solely in the United States. It is one of the most important problems that social states everywhere must face in the twenty-first century. To date no country has come up with a truly satisfactory response. … Make no mistake: there is no easy way to achieve real equality of opportunity in higher education".[35] Elsewhere he argues that questions around aspects of the social state that deal with how to improve living conditions of the poorest, what rights can be granted to all, and issues of the division of social and individual responsibility, "will never be answered by abstract principles or mathematical formulas. The only way to answer them is through democratic deliberation and political confrontation. The institutions and rules that govern democratic debate and decision-making therefore play a central role, as do the relative power and

34 See, for example, B. Bozzoli (2015) 'Behind the university funding crisis' in *Politicsweb*, 19 October.
35 Piketty (2014) *Capital in the twenty-first century*, p. 485.

persuasive capabilities of different social groups".[36]

Do we have the institutions to deal with this deliberation about the solutions for university education? Ahmed Bawa argues that our higher education institutions are in "existential crisis" and "on the defensive" and that "there is a need for a new social compact between higher education and society, a cultivated one, one that grows out of engagement".[37] He argues that such a pact will not develop 'organically' because of distrust and a range of tensions around the role of the university. He therefore proposes, "a thorough engagement between universities and broad social formations on an open footing with a view to developing some level of consensus on the future of universities – a future that is shaped on a common understanding of what South Africa aspires to as a nation in future".

Therefore, it seems, the challenge for South Africa is not really around higher education funding, but whether the country has mechanisms or institutions to resolve really challenging problems. To date, in the education funding crisis, there is not much to give South Africa hope on this score.

36 Ibid., p. 480.
37 Bawa (2012) 'South African Higher Education: At the centre of a cauldron of national imaginations' in *Social Research*, 79(3), pp. 669-694.

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Responsive and sustainable higher education funding: Lessons from Zimbabwe

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Ever wondered why the infamous university student unrests that marked the years 1989 to 2008 ended in Zimbabwe? Moreover, in 1989 Zimbabwe had only one university with student enrolment of 9 300.[1] Currently there are 15 universities, both private and public, with an enrolment of 89 000 but student unrests have been minimal.[2]

1. Introduction

The world over, policymakers confront hard decisions concerning innovative policies and strategies for funding higher education that are responsive, effective, sustainable and best suited to the local context. This paper proffers a financing strategy that was used by Zimbabwe to address issues of access, equity and quality of higher education and which had bonus returns of reducing the incidences of student unrest in universities.

1 W. Saint, T. Harnet & E. Strassner (2003) 'Higher education in Nigeria: A status report' in *Higher Education Policy*, 16, pp. 259-281.
2 ZIMCHE (2015) *Enrolment and graduation statistics for universities in Zimbabwe.*

2. The importance of sustainable funding in higher education

Zimbabwe needs adequate, effective and sustainable funding to achieve the objectives of the higher education sector which are enunciated below:

2.1 Universal *access* for all deserving students irrespective of social and economic status (embedded in access are issues of *equity* and *inclusiveness*). This is aimed at expediting Zimbabwe's socio-economic transformation.[3] Article 75 of the Constitution of Zimbabwe emphasises the right to education: "Every citizen and permanent resident of Zimbabwe has a right to a basic State-funded education, including adult basic education; and further education, which the State, through reasonable legislative and other measures, must make progressively available and accessible";

2.2 *Quality* programmes that are *relevant*, market-driven, technology-driven and student-centred;[4] and

2.3 Graduates who are cultured, flexible, skilled and fully equipped to contribute to their own development and that of the nation.[5]

3. The changing context of higher education

3.1 High demand for higher education leading to an upward increase in enrolments (Figure 1);

3 T.M. Kariwo (2007) 'Widening access in higher education in Zimbabwe' in *Higher Education Policy*, 20, pp. 45–59; I. Mandaza (1986) *Zimbabwe: The political economy of transition - 1980-1986*; C.M. Nherera (2000) 'The role of emerging universities in Zimbabwe' in *Zimbabwe Journal of Educational Research*, 12(3), pp. 38-61; R.J. Zvobgo (2003) 'The impact of the economic structural adjustment programme on education in Zimbabwe' in *The Zimbabwe Bulletin of Teacher Education*, 65, pp. 65-101.

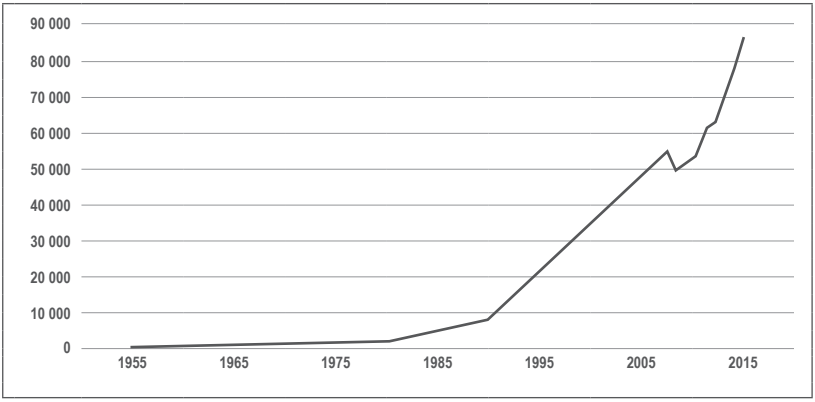
4 C.M. Nherera (2000) 'Globalisation, qualifications and livelihoods: The case of Zimbabwe' in *Assessment in Education*, 7(3), pp. 335-363; Zimbabwe Council for Higher Education Act (Act 1 of 2006).

5 C.T. Nziramasanga (1999) *The Presidential Commission for Inquiry into Education and Training*; Government of Zimbabwe (2013) *Zimbabwe Agenda for Sustainable Socio-Economic Transformation (Zim-Asset). Towards an empowered society and a growing economy*; Zimbabwe Ministry of Finance, Economic Planning and Development (1991) *Second Five-Year National Development Plan, 1991-1995.*

3.2 The widening of the diversity of programmes offered by universities;
3.3 Rising unit costs of producing a graduate; and
3.4 Limited fiscal space to match the rising cost of higher education due to weakening government revenues, as well as other competing fiscal burdens, for example the enormous salary bill for civil servants, debt obligations, etc.

The realities listed above heightened concerns about quality issues and led to a funding crisis that started around 1996 and reached a head in 2006, thus calling for a paradigm shift on higher education funding.[6]

Figure 1: Trends in university student enrolment statistics (1957-2014)



Source: Garwe and Maganga, 2015

4. The new higher education funding model

Riddled with the issues highlighted in Section 3, as well as an extremely constrained economic environment, the Government of Zimbabwe was forced to redesign the university funding model to one that had four components listed here according to their weighting:

6 E.C. Garwe (2014) 'Quality assurance in higher education in Zimbabwe' in *Research in Higher Education Journal*, 23.

- Cost-sharing, leaning heavily towards higher contributions by students;
- Involvement of private players;
- A cadetship scheme for students facing financial hardships in return for working for government after graduation; and
- Limited and targeted fiscal support to public universities only.

4.1 Cost-sharing leaning heavily towards higher contributions by students

Since the establishment of the first university in 1957, Zimbabwe adopted cost-sharing policies (changing proportions of loans and grants as highlighted by Garwe and Maganga) for higher education, but it never offered free higher education.[7] Article 27 of the Constitution of Zimbabwe states that, "The State must take all practical measures to promote: free and compulsory basic education for children; and higher and tertiary education." This clearly shows that the government has no intention to offer free higher and tertiary education. In 1996, the government of Zimbabwe instituted a new cost-sharing model requiring new students to contribute half of their university fees. This move was met with violent student demonstrations. However, the government did not bow to pressure, but in 2006 it went on to require 100% upfront tuition fee payment before students could be permitted to register and attend classes.[8] This resulted in a drop in university enrolments from 2007 to 2009. Universities responded by offering flexible payment plans depending on the formal arrangements they make with students, but generally only fully paid-up students are able to access their end of semester results. It is important to note that the undergraduate fees for public universities are still approved by government and are, therefore, far below the full cost of instruction. Public universities were allowed to charge market-related fees on non-conventional programmes i.e. parallel programmes, evening and weekend classes, block-release programmes and postgraduate programmes.

4.2 Involvement of private players

The government opened up higher education to private universities whose fee levels are not regulated by the state. However, unlike the practice in other

7 E.C. Garwe & E. Maganga (2015) 'The effect of student financial constraints on university non-completion rates' in *International Journal of Education*, 7(2), pp. 322-336; D. Chihombori (2013) 'Cost-sharing in higher education financing in Zimbabwe, 1957- 2009' (thesis).

8 Garwe & Maganga (2015) 'The effect of student financial constraints on university non-completion rates' in *International Journal of Education*, 7(2), pp. 322-336.

in other countries where government sponsors students studying in private universities, students in Zimbabwean private universities pay for their own education.[9] Some of the private universities are church-owned or church-related, and hence they get subsidies from their governing bodies.

Some private players offer cost-recovery loans and a host of other efficient financial aid packages. Loans are offered either directly to working-class students, or through their parents, guardians, relatives, employers and guarantors, requiring monthly re-payments. Examples of such financiers include EDULOAN and banks. Other corporates, notably Econet - Zimbabwe, Capernum Trust, Delta and British American Tobacco contribute immensely by sponsoring many students. These scholarships, bursaries and aid packages are given on the basis of socio-economic disadvantage, academic excellence or other forms of distinction, enrolment in priority disciplines for the sponsoring organisation or to the country's development.

4.3 Cadetship scheme

Recognising that many students from resource poor backgrounds could not afford to fund their university studies, the government launched a cadetship scheme.[10] The beneficiaries' tuition and accommodation is borne by government in return for working for government after graduation for a period equivalent to the length of their studies. The cadetship funds do not cover ancillary costs, levies and other associated costs of study. In order to be eligible as a cadetship beneficiary, means-testing is used. In order to underscore its stance on equitable access to higher education, the government has publicly stated and barred public institutions from sending students away over non-payment of tuition fees. The focus on protecting students from public universities only stems from the fact that students who enrol in private universities do so by choice, fully cognisant of the fact that these institutions charge higher fees when compared to their public counterparts.

4.4 Limited and targeted fiscal support to public universities only

The government funding for capital expenditure and operational costs were cut significantly. Public universities would only receive funds for salaries and

9 S. Muchemwa (2015) 'Problems faced by non-state universities in Zimbabwe' in *International Journal of Innovative Research and Development,* 4(11), pp. 48-52.

10 Chihombori (2013) 'Cost-sharing in higher education financing in Zimbabwe, 1957- 2009' (thesis).

other pressing and targeted financial needs. As explained before, no subsidies are given to private universities by the government both for students and the institutional needs.

5. Outcomes of the funding model

5.1 Positive Outcomes

5.1.1 When the burden of financing higher education rested on students, they became more committed to their work, their grades improved and they were less involved in collective actions and other forms of student unrest.

5.1.2 Universities responded to the lower fiscal support by employing cost-effective measures and being more innovative in seeking finances. For instance, universities introduced Open and Distance Learning (ODL) modes of delivery that have the effect of increasing access to opportunities in higher education. Universities are also making optimum use of facilities through use of other modes of delivery (block release, parallel programmes, evening and weekend classes as well as short courses). In addition, universities have established strategic business ventures, notably farms and hotel/catering enterprises.

5.1.3 There was an inherent cap on rapid increases in the university student population. This will have a positive effect on issues of quality and graduate employability.

5.2 Negative Outcomes

5.2.1 The means-testing method of identifying the needy was fraught with opportunities for abuse of cadetship funds. Challenges of a similar nature were reported in the Zambian context.[11]

11 G. Masaiti & H. Shen (2013) 'Cost sharing in Zambia's public universities: Prospects and challenges' in *European Journal of Educational Research*, 2(1), pp. 1-15.

5.2.2 There have been growing fears of increasing non-completion rates associated with students who cannot afford the costs of university education.[12]

6. Lessons learnt

The lessons learnt are:

6.1 In order not to compromise access, equity and quality, funding should be responsive, realistic, responsible, sustainable and designed to widen the resource base by incorporating contributions from all key stakeholders.

6.2 There are advantages in incorporating cost-sharing funding strategies with higher financial responsibility borne by the primary beneficiaries and buttressed by targeted and transparent financial assistance initiatives intended to give access to disadvantaged and talented students as well as students pursuing studies in critical disciplines.

6.3 The funding model presented here fosters responsible conduct, is less prone to political pressure and encourages positive institutional behaviour resulting in revenue generation and cost-efficiency.

7. Recommendations

In order for a country to achieve the objectives of their higher education systems, this paper recommends an attractive and sustainable financing model involving a diversity of funding sources. The model gives greater responsibility to students, yet accommodates other funding options to cater

12 Garwe (2014) 'Quality assurance in higher education in Zimbabwe' in *Research in Higher Education Journal*, 23; M. Hwami (2010) 'Neoliberal globalization, ZANU PF authoritarian nationalism and the creation of crises in higher education in Zimbabwe' in *Journal of Alternative Perspectives in the Social Sciences*, 2(1), pp. 59-90; K. Makoni (2007) *Understanding the effects of high educational costs and incidence of student victimization at Zimbabwe's tertiary learning institutions*; Zimbabwe National Students' Union (2009) *Monthly Briefing Paper*, March.

for the disadvantaged, talented and targeted groups. Reliance on government for providing the bulk of higher education funding to all students (including those who can afford it) may be considered to be an irresponsible and unsustainable option resulting in misdirecting scant resources away from other competing and critical national initiatives.

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Funding university studies: Who benefits?

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1. Introduction

University education is neither a merit good (that society would otherwise under-consume) nor a public good (that brings positive externalities). Graduates gain much from university education, emphasising its private good attributes.

Surveys show most students come from wealthier deciles. Applying a different methodology based on identifying candidates for university studies from the SACMEQ school survey, and estimating attendance based on a survey, confirms high inequality in university access.

Yet there is a case for making universities more affordable. That should be based not on full subsidisation, but on government using partial guarantees and mechanisms for recovery of loans to private financial institutions to overcome the missing capital market problem.

2. The nature of university education: Merit or private good?

> Education has a number of properties which make the analysis of the demand for it both interesting and complex. … (Education is) …a consumption good and a capital good, i.e., although much of the expenditure is justified in terms of the effects on the individual's income in the future, many of the activities of educational institutions are primarily justifiable in terms of their immediate consumption benefits. Moreover, education affects individuals' future incomes.[1]

There is a long history of research and debate in the public finance literature about the nature of education. While economists have usually ascribed to primary and even secondary education some of the attributes of a merit good, this does not equally hold for tertiary education.

A merit good is usually assumed to be one that that would be under-consumed if left to consumer choice only. The MIT definition of a merit good is, "A good the consumption of which is deemed to be intrinsically desirable. In the case of such goods it is argued that consumer sovereignty does not hold and that if consumers are unwilling to purchase 'adequate' quantities of such goods they should be compelled… to do so." Richard Musgrave, who coined the term, states that, "The term 'merit goods' has no generally agreed application. It is best applied where individual choice is restrained by community values."[2] It is thus clear why primary education is regarded as a merit good: Society usually regards it as desirable that everyone should have a basic education, as is also true for basic health services, such as vaccination, etc. In the case of such merit goods, not only does government usually fund it, but it also applies compulsion: Everyone should be forced to have it.

University education is a very different matter. No country in the world aims to make tertiary education universal, not even to speak about compulsory. Even in OECD countries, only 41% of young adults (aged 25-34 years) now have tertiary qualifications of some sort.[3] Though this is a high proportion, it is

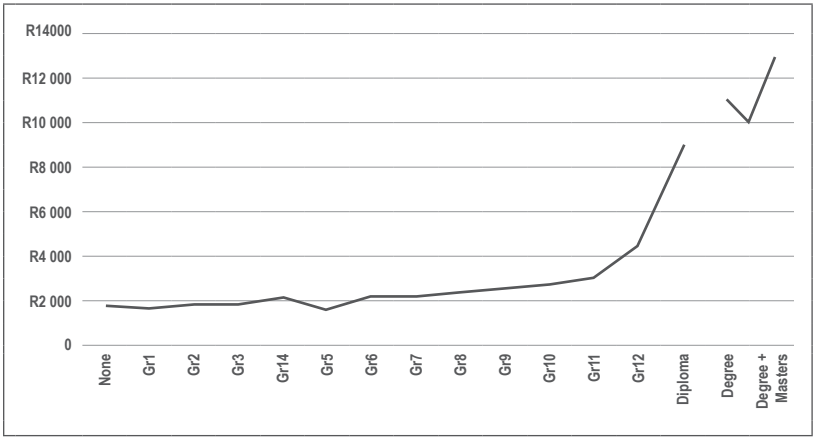
1 J.E. Stiglitz (1974) 'The demand for education in public and private school systems' in *Journal of Public Economics*, 1974(3), pp. 349-385.
2 R.A. Musgrave (2008) 'Merit good' in S.N. Durlauf & L.E. Blume (eds.) *The new Palgrave dictionary of economics.*
3 OECD (2015) *Education at a glance interim report: Update of employment and educational attainment indicators.*

far from universal access, and the proportion is even less if university degrees only were to be considered. So by the strict definition, tertiary education is not a merit good.

There is a stronger case that tertiary education has externalities that give it some of the characteristics of a public good, though again, because it is excludable (people can be prevented from having it), it is not a pure public good like a lighthouse. In developing countries in particular, many would argue that tertiary-educated individuals bring benefits to society in terms of enhanced productivity, economic growth acceleration, and expanding employment for the less educated.

However, the question is whether higher education is not largely a private good, where large benefits of university education go to recipients in the form of higher wages and enhanced status. A university degree adds much to people's earning power. In 2010, graduates earned almost two and a half times (240%) as much as matriculants, with similar other attributes (age, gender, race) being the same. (See Mincerian regression in the Appendix).

Figure 1: Expected wage for 30-year old black male by level of education, 2010



Source: Own estimates from Labour Force Surveys, 2010; see Mincerian regression in Appendix.
The gap between a diploma and degree course is left so that the values on the horizontal axis also reflect years of education

For a representative black male aged thirty years, the expected earnings in 2010 for different levels of education would have been as reflected in Figure 1, which clearly shows the great convexity of the earnings structure.

In the next section, it will be shown who the main beneficiaries are of student subsidies. Thereafter, we turn to the question to what extent such subsidies are warranted. This obviously relates to the nature of university education, as briefly discussed here.

3. Who attends university?

In previous incidence analyses that this author has been involved in, tertiary education was found to be by far the most unequally distributed of all social programmes.[4] However, it was noted that these estimates were probably biased, as they were "based on household surveys, but many students were no longer resident in their families of origin, so this may have led to inaccurate capturing of their home background in surveys".[5] The recent World Bank incidence study also acknowledges this, "Note that students are captured in surveys at the places they find themselves when studying, which in some cases may not be the same as their households of origin. As a result, it may appear that some students from very poor households are not actually appearing in the survey as poor."[6]

Thus the fiscal incidence data for tertiary education by decile of the population, arranged from the poorest (Decile 1) to the richest (Decile 10), may exaggerate the share of university subsidies reaching those in the richest deciles. It is nevertheless important to take note of these figures, as they imply extreme bias towards spending on the rich if all students are equally subsidised. Almost half of the benefits then would go to the top decile of the population, according to the World Bank estimates, based on the 2011 Income and Expenditure Survey, and two-thirds to the top quintile (fifth) of the population. The 2006 data show a slightly lesser, but almost similar concentration of students (and therefore subsidies) in the top quintile, which receives 63% of all university subsidy spending.

A few further qualifications are in order. The first is that it is not so

4 S. Van der Berg (2006) 'Public spending and the poor since the transition to democracy' in H. Bhorat & R. Kanbur (eds.) *Poverty and policy in South Africa*; S. Van der Berg (2006) 'The targeting of public spending on school education, 1995 and 2000' in *Perspectives in Education*, 24(2), pp. 49–64; S. Van der Berg (2009) 'Fiscal incidence of social spending in South Africa, 2006' (report); S. Van der Berg & M. Eldridge (2012) 'How better targeting of social spending affects social delivery in South Africa' in *Development Southern Africa*, 29(1), pp. 127-139.

5 Van der Berg & Eldridge (2012) 'How better targeting of social spending affects social delivery in South Africa' in *Development Southern Africa*, 29(1), p. 136.

6 World Bank (2014) *South Africa economic update: Fiscal policy and redistribution in an unequal society*, p. 48, footnote 44.

uncommon for tertiary education spending to be concentrated on the more affluent, as acknowledged by the World Bank, "Our findings for South Africa are not unique, since much of tertiary education spending in Armenia, Bolivia, and Brazil benefits higher income groups as well."[7]

Secondly, it may be argued that not all university subsidies benefit the students, as universities also have other roles in society that require that they be funded, the benefits of which go to wider society. But this argument naturally relates to funding of tertiary education as a whole, not of the students.

A third qualification relates to the point made above regarding bias in household surveys. To get some estimate of the extent of such bias, SACMEQ III data (a survey of Grade 6 students undertaken in 2007) were used to estimate which students would be the most likely candidates to obtain university exemptions, given their performance. In SACMEQ, a socio-economic status variable was created that reflects asset wealth, based on a possession of a series of assets in the homes of students. Then it was also necessary to determine, from the Community Survey, how many 12-year olds (the median age) fell into each population decile. Among these, the proportions likely to attain exemptions were then calculated to arrive at the figures for SACMEQ A in Table 1. Along with the 2006 estimates,[8] and the 2011 estimates,[9] these are shown in Figures 2 and 3.

Table 1: Estimated university subsidy shares by decile

	2006	2011	SACMEQ A	SACMEQ B	SACMEQ B Cumulative
Decile 1	0.4%	2.5%	1.9%	0.2%	0.2%
Decile 2	1.1%	1.1%	1.9%	0.6%	0.8%
Decile 3	1.7%	1.7%	2.3%	1.4%	2.2%
Decile 4	2.1%	1.8%	3.1%	3.1%	5.3%
Decile 5	3.5%	3.4%	5.4%	2.3%	7.6%
Decile 6	5.7%	3.3%	4.4%	4.0%	11.6%
Decile 7	9.1%	7.2%	7.4%	7.7%	19.3%
Decile 8	13.7%	11.8%	13.7%	13.0%	32.3%

7 World Bank (2014) *South Africa economic update: Fiscal policy and redistribution in an unequal society*, p. 39.

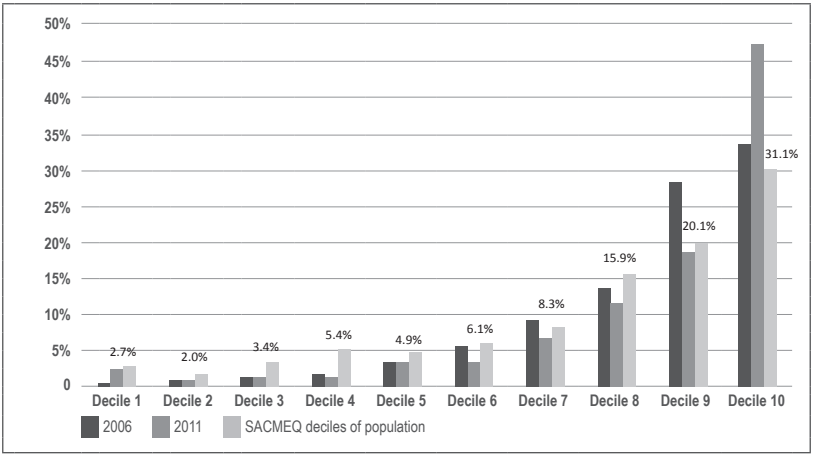
8 Van der Berg (2006) 'Public spending and the poor since the transition to democracy' in H. Bhorat & R. Kanbur (eds.) *Poverty and policy in South Africa.*

9 World Bank (2014) *South Africa economic update: Fiscal policy and redistribution in an unequal society*; G. Inchauste, N. Lustig, M. Maboshe, C. Purfield & I. Woolard (2015) *The distributional impact of fiscal Policy in South Africa.*

(continued)	2006	2011	SACMEQ A	SACMEQ B	SACMEQ B Cumulative
Decile 9	28.8%	19.2%	22.1%	22.5%	54.8%
Decile 10	33.9%	48.0%	37.7%	45.2%	100.0%
Total	**100%**	**100%**	**100%**	**100%**	**100%**

Source: For 2006, Van der Berg 2009; for 2011, World Bank 2014 & Inchauste et al 2015; for SACMEQ, own calculations, SACMEQ A refers to the estimated numbers per population decile that would get university exemption; SACMEQ B refers to those among these most likely to be attending university, based on exemptions and 2007 Community Survey university attendance of matriculants with exemptions (see Appendix Table 2)

Figure 2: Estimated university subsidy shares by decile

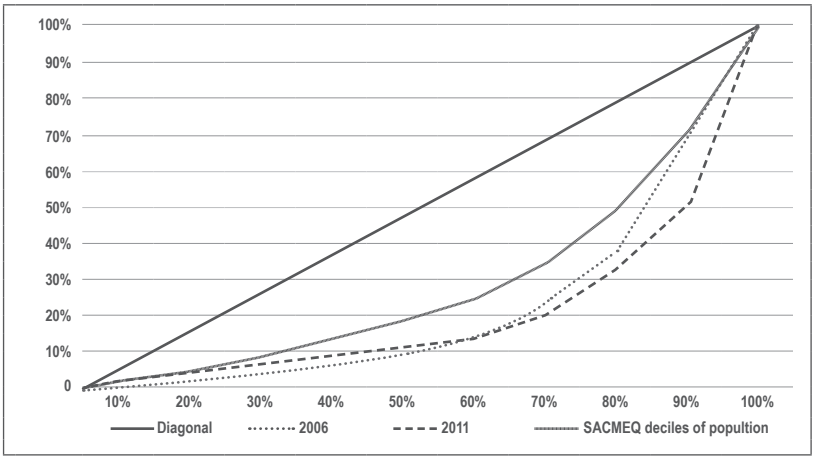


Source: Table 1

The incidence curves shown in Figure 3 reflect great inequality in access to university. The SACMEQ A figure shows somewhat less inequality of access, but still suffers from one deficiency: It is based simply on the distribution of those with university exemption, and not on actual numbers attending university. Available data, though imperfect, indicate that only about two-thirds of those who qualify to do degree courses at universities may end up doing so. Little is currently known about those who do not take up degree studies and what their motivations may be. However, it is likely that financial constraints may play a role, and in this regard it is likely that access, conditional upon qualifying for degree studies, may favour those from more affluent backgrounds. The Community Survey of 2007 offers some possible insight into this.[10]

10 Statistics South Africa (2007) *Community Survey 2007* (Revised version).

Figure 3: Three alternative incidence curve for student funding at universities

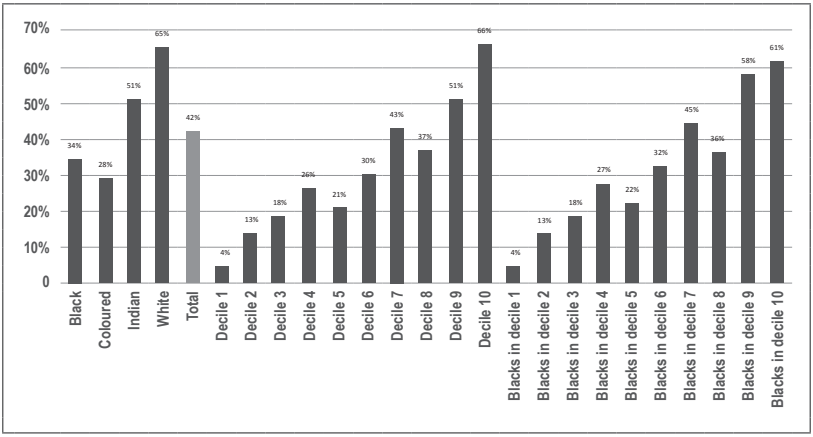


Source: Table 1

Among the responses regarding the highest educational level attained, respondents for whom this was a matric had to indicate whether that was achieved with exemption. Focusing on 21-year olds among this group, who should still have been at university if they had enrolled for a degree, the data in Appendix Table A.2 was derived. Although this under-estimates actual university exemptions somewhat, and indicates that only 42% of those with exemptions were enrolled at universities, the figures do give a good indication of the varying proportions of different deciles or race groups attending university, as shown in Figure 4. It is clear that the data supports the hypothesis that there would be higher university attendance amongst those with exemptions in the higher deciles of the distribution, probably because of financial constraints, but perhaps also because of other access issues, such as social networks and opportunity costs of studying.

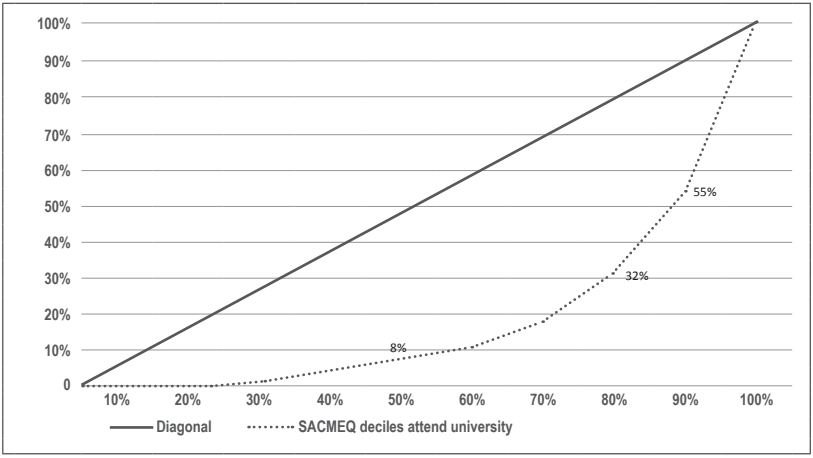
Applying the differential attendance proportions derived from the Community Survey to the SAMEQ exemptions candidates (SACMEQ A), makes it possible to determine SACMEQ B in Table 1 above. The cumulative distribution for that estimate is also shown in the last column of Table 1, as well as in the incidence curve in Figure 5. If taken to be true, it indicates that access to university is extremely skew, approximately as skew as found in the Income and Expenditure Survey of 2011 by the World Bank and also

Figure 4: Educational institutions attended by 21 year olds who have achieved a university exemption, 2007



Source: Appendix Table 2

Figure 5: Incidence curve for estimated student attendance at university based on SACMEQ and Community Survey, 2007

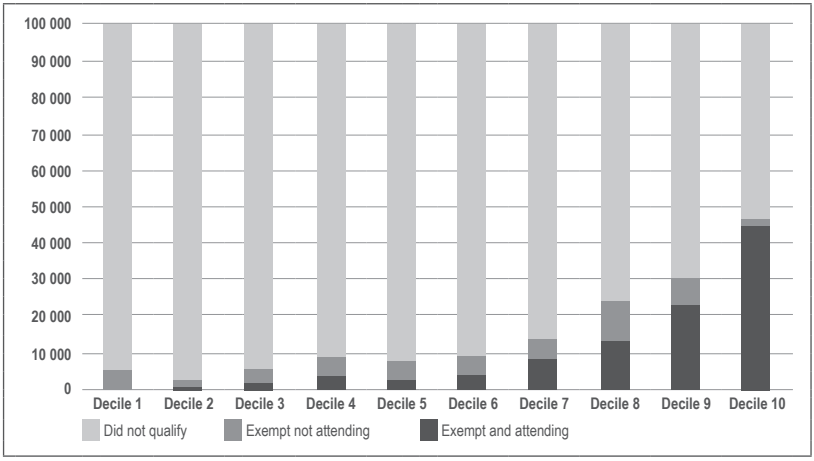


Source: Table 1, SACMEQ B

Inchauste *et al*.[11] It is contrary to the expectations of both this author and the World Bank, as referred to above, that the surveys may overestimate the concentration of university students among the rich.[12]

Another way of looking at these numbers is presented in Figure 6, which shows the approximate distribution of university attendance status across different deciles of a matric cohort. This makes it clear how selective a group are those who qualify for, and those who attend, universities. If one considers that the annual subsidy of a school child is only about R12 000, far less than for a student at a university, it is clear that this inequality in incidence of university funding is a major matter within overall incidence of education spending, and indeed aggregate social spending.

Figure 6: Approximate distribution of those who attend, qualified but do not attend, and did not qualify for university for a recent matric cohort



Source: Derived from foregoing data

11 World Bank (2014) *South Africa economic update: Fiscal policy and redistribution in an unequal society*; Inchauste, Lustig, Maboshe, Purfield & Woolard (2015) *The distributional impact of fiscal Policy in South Africa*.

12 Van der Berg (2006) 'Public spending and the poor since the transition to democracy' in H. Bhorat & R. Kanbur (eds.) *Poverty and policy in South Africa*; Van der Berg (2006) 'The targeting of public spending on school education, 1995 and 2000' in *Perspectives in Education*, 24(2), pp. 49–64; Van der Berg (2009) 'Fiscal incidence of social spending in South Africa, 2006' (report); World Bank (2014) *South Africa economic update: Fiscal policy and redistribution in an unequal society.*

4. Yet missing capital markets still provide a case for subsidising students to attend university

Though the equity argument for not spending large subsidies for university students is strong, as the above figures indicate, there is nevertheless an important argument that should not be lost sight of. An equitable society requires the possibility of upward social mobility, preferably substantial upward mobility. This aspect is even more important in South Africa than in many other countries. However, for large segments of the population, access to the top end of the labour market would remain impossible if they cannot access funding for university.

That does not mean that university studies should be fully paid by the state. Rather, students should obtain support that would make it possible for them to obtain degrees, but this should in principle be fully, or then at least substantially, repayable. The problem for most students is the high cost of studying: Considering student fees and living expenses, it could cost as much as R100 000 per year, a large sum when considered against the R12 000 per year subsidies per school student. For the typical student, support of almost half a million Rand over the course of a degree may be required (and this ignores the fact that universities already also receive state subsidies).

Borrowing such money is not viable for most students or their parents. Following Fourie, it would not be inaccurate to state that few households with a household income of less than about R500 000 in today's terms would be able to afford R100 000 per year for a child at university, without having to borrow or use accumulated savings.[13] Based on the Income and Expenditure Survey of 2010/11, adjusted for inflation to today's terms, that would leave only about the top 5% of the population in a position to afford university studies without having to draw on savings or to borrow. This is where the lack of viable access to financial markets would stand in the way of many to obtain such funds.

13 J. Fourie (2015) 'University fees: The impossible trinity of higher education' (blog post).

Missing markets are often an important reason for state interventions. In the case of higher education, it has long been accepted that there are imperfections in capital markets which make it difficult to regard university education as something which could be adequately self-funded.[14] The absence of collateral among many poor students is an obvious contributory factor in the South African situation. While NSFAS provides support to at least a segment of the South African student population, such support is by far not adequate in terms of the population reached, or the amount of support provided. Also, the NSFAS recovery rate is far too low to make it a viable long-term way of financing the studies of most students. The development of capital markets for investing in people's own education should receive far more attention, but that would not be possible without some form of state guarantees and ways whereby relatively high repayment rates can be obtained (e.g. the tax system). Even in the case of the UK, only 55% of such funds are eventually repaid. With growing access to universities, and especially as such access increasingly involves more students from poor backgrounds, the need for dealing with this missing market would become even greater. But the answer cannot be free university studies for the few who do qualify to go to the university, as that is beyond the fiscal capacity of the country, and is inequitable in its effect.

14 K. Arrow (1993) 'Excellence and equity in higher education' in *Education Economics*, 1(1), pp. 5-12.

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Appendix

Table A.1: Mincerian earnings regression, 2010

Dependent variable: Log of earnings	
No education	Omitted
Gr1	-0.043
Gr2	0.038
Gr3	0.019
Gr4	0.254
Gr5	0.039
Gr6	0.239*
Gr7	0.264*
Gr8	0.342*
Gr9	0.408*
Gr10	0.555*
Gr11	0.633*
Gr12	1.013*
Certificate or diploma	1.684*
Degree	1.890*
Degree +	1.788*
Masters	2.072*
Age	0.041*
Age squared	-0.00035*
Black	Omitted
Coloured	0.244*
Indian	0.674*
White	0.782*
Male	Omitted
Female	-0.406*
Constant	6.505*
R2	0.421

Source: Calculated from LFS 2010 surveys

Table A.2: Educational institutions attended by 21-year olds who have achieved a university exemption, 2007

	Colleges	Universities	Others	None	Total	% at
Universities						
Black	5 606	16 269	10 620	15 393	47 888	34.0%
Coloured	383	1 559	479	3 177	5 598	27.8%
Indian	242	2 321	130	1 882	4 575	50.7%
White	1 139	12 474	413	5 024	19 050	65.5%
Total	7 370	32 623	11 642	25 476	77 111	42.3%
Decile 1	215	161	2 667	1 161	4 204	3.8%
Decile 2	102	427	1 447	1 259	3 235	13.2%
Decile 3	248	793	1 487	1 809	4 337	18.3%
Decile 4	520	1 146	1 258	1 429	4 353	26.3%
Decile 5	689	1 106	1 081	2 334	5 210	21.2%
Decile 6	694	1 811	1 002	2 534	6 041	30.0%
Decile 7	503	2 812	878	2 421	6 614	42.5%
Decile 8	1 031	2 983	894	3 129	8 037	37.1%
Decile 9	1 534	6 166	383	4 031	12 114	50.9%
Decile 10	1 834	15 218	545	5 369	22 966	66.3%
Blacks in decile 1	215	161	2 667	1 101	4 144	3.9%
Blacks in decile 2	102	427	1 447	1 259	3 235	13.2%
Blacks in decile 3	248	793	1 473	1 809	4 323	18.3%
Blacks in decile 4	520	1 146	1 244	1 368	4 278	26.8%
Blacks in decile 5	629	1 106	1 027	2 159	4 921	22.5%
Blacks in decile 6	606	1 759	867	2 226	5 458	32.2%
Blacks in decile 7	503	2 574	817	1 876	5 770	44.6%
Blacks in decile 8	787	1 666	601	1 543	4 597	36.2%
Blacks in decile 9	1 233	3 608	241	1 123	6 205	58.1%
Blacks in decile 10	763	3 029	236	929	4 957	61.1%

Source: Calculated from Community Survey 2007

Reconciling Efficiency, Access, Fairness and Equality: The case for income-contingent student loans with universal eligibility

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The harmful legacy of colonial and apartheid social engineering means South Africa's tertiary-education sector faces a number of distinctive challenges, and deep-rooted disagreement persists about how best to manage university curricula and research in a democratic South Africa.[1] When, though, our focus is on the specific issue of how university tuition is to be funded, the challenges faced by South Africa have many points of similarity with those faced by its African neighbours, other middle-income countries, and indeed most of the industrialised world.

South Africa needs to continue to expand its higher education sector so as to attain an informed civil society and the skilled workforce which will enable it to compete in a knowledge-driven global economy; but it must also break down barriers to access in order ultimately to realise equality of opportunity for all its citizens. The South African Government should aim

1 For particularly helpful discussions of these issues, see T. Reddy (2004) 'Higher education and social transformation: South Africa case study' (report); A. Bawa (2012) 'South African higher education: At the center of a cauldron of national imaginations' in *Social Research: An International Quarterly*, 79(3), pp. 669-694; P. Tabensky & S. Matthews (2015) *Being at home: Race, institutional culture and transformation at South African higher education institutions.*

to achieve its higher-education goals cost-effectively, at a time when there are compelling demands for increased spending in other sectors (e.g. health, basic education); but it must also ensure the costs of university tuition are spread fairly, preventing a middle-class capture of state funds. Finally, South African higher-education funding policy must be shaped in ways that foster cohesive egalitarian relations among its citizenry, and avoid entrenching stigma, social divisions and hierarchical relations of domination.

This paper identifies four principal values which a funding model for higher education should aim to realise, and by which it should be constrained: Efficiency, Access, Fairness and Equality.[2] Though potentially these values conflict, the aim in South Africa – as in other countries – must be to select a funding model which reconciles all four values as far as possible. It is fruitful to separate out these four values analytically, as this enables us to compare different potential funding models along four separate dimensions. A funding model which is superior to others along one or some of these dimensions is not necessarily the best funding model overall. In its deliberation about which higher education funding model reconciles the four guiding values most satisfactorily, South Africa can draw on the experiences of other countries, avoiding common mistakes and incorporating successful features. Clarity about the different values which inform a choice of higher education funding model enables policy-makers not only to choose the right policy, but also to communicate the justification for that policy effectively – something which will be crucial in the Government's on-going dialogue with the articulate, and sporadically well-organised, interest group constituted by South Africa's students.

Sections 1 to 3 of the paper argue that a funding model combining public subsidy and fees, accompanied by income-contingent student loans, is the model which best enables Efficiency, Access and Fairness to be realised together. Section 4 presents reasons of Equality, Access and Efficiency for extending eligibility for substantial student loans to all South African first-time undergraduate students. Section 5 then outlines six concrete measures which will enable the proposed higher-education funding reform to be introduced affordably in South Africa.

2 I capitalise these terms since I am attaching a specific, well-defined meaning to each, rather than using them in a colloquial way. I introduce these well-defined meanings in the course of the text.

1. Efficiency

It is uncontroversial that a higher-education funding model should avoid waste, and instead should foster Efficiency. There are at least three types of Efficiency a funding model should embody.

1.1 Allocative Efficiency

There is, in the first place, a relatively narrow, clear-cut type of allocative Efficiency which society needs its higher-education sector to achieve in a cost-effective way. Students entering higher education have preferences for various courses and degree programmes. An individual student's preferences can be assumed to be a function of their areas of interest and curiosity, their estimation of their own skills and determination, and their aspirations in life (e.g. career path, public service). At the output end, there is demand from employers for graduates with various qualifications. This demand can be assumed to be a function of broader demand in the economy and the needs of public administration. Other things equal, it is desirable that the higher education sector satisfy both student preferences and labour-market demand as far as possible.

As student numbers grow, and both the labour market and degree and course offerings become more differentiated, this allocative goal becomes too complex for central planning. Assuming a minimum level of informedness among students, both about their own preferences and skills and about the labour market, it becomes helpful for universities competing for students to set fees autonomously (possibly within set limits).[3] Price then operates as a market mechanism, signalling cost and quality, and matching supply to demand better than a central planner ever could.[4] Competition between universities for students will encourage institutions to use resources ever more cost-effectively to meet demand.[5]

This is the Efficiency argument for making universities fee-charging institutions which compete with one another for fee-paying students. In

3 For some considerations in favour of a cap on university fees, see: N. Barr (2009) 'Financing higher education: Lessons from economic theory and reform in England' in *Higher Education in Europe*, 34(2), pp. 204-205.

4 N. Barr (1998) 'Higher education in Australia and Britain: What lessons?' in *Australian Economic Review*, 31(2), pp. 180-182; P. Pillay (2008) 'Higher education funding frameworks in SADC' in *Towards a common future: Higher education in the SADC region*, p. 191.

5 Barr (2009) 'Financing higher education: Lessons from economic theory and reform in England' in *Higher Education in Europe*, 34(2), p. 202.

contrast to many other African countries, South African universities have an established history of charging fees,[6] and there exists a healthy range in the fees charged by different institutions and for different degree programmes.[7] From the point of view of allocative Efficiency, this is a virtue of the current South African funding model.

1.2 Intra-sectoral Efficiency

But the higher-education sector needs to achieve a broader set of goals than only the narrow, clear-cut goals which a price mechanism is particularly helpful in realising. Here we can usefully distinguish between the *public goods* and the *private goods* which the higher education sector should aim to achieve in a cost-effective manner:

1.2.1 Public goods

- Services delivered by well-trained professionals (e.g. doctors, civil servants);
- Technological innovations by excellent graduates (e.g. smartphones, computers), which can improve everybody's lives;
- Critical reasoning skills cultivated by humanities subjects (e.g. economics, African studies), which enhance civil society's ability to hold government to account;
- Works of intrinsic cultural value created by excellent graduates, which can be appreciated by others and can form the basis of a national identity, fostering social cohesion;[8] and
- A socially responsive governing and managerial class.[9]

It would be unrealistic to expect a market in higher education to achieve this broad set of goals in a balanced way of its own accord. So there is good reason for government to intervene with subsidies, regulation and earmarked funds, to ensure that the higher education sector is achieving this broad set of goals in a cost-effective manner.

6 G. Wangenge-Ouma (2012) 'Tuition fees and the challenge of making higher education a popular commodity in South Africa' in *Higher Education: The International Journal of Higher Education Research*, 64(6), p. 832.
7 N. Dirk (2015) 'Activists forcibly removed as protest spreads to CPUT campus' in *Cape Times,* 21 October.
8 A. Bawa (2000) 'A social contract between the public higher education sector and the people of South Africa' (research paper).
9 A. Cudd (2015) 'What is equality in higher education?' in G. Hull (ed.) *The equal society: Essays on equality in theory and practice*, p. 272.

1.2.2 Private goods

- Intrinsic interest and value;[10] and
- Competitive advantage over non-graduates in seeking highly skilled and paid work.

It is much harder to quantify the public goods generated by higher education than the private financial benefit to graduates of earning a substantially higher salary than they would have done without a degree. This can lead to governments underestimating how important investment in higher education is for national development.[11]

1.3 Inter-sectoral Efficiency

There is a further type of Efficiency which must constrain higher-education funding due to the fact that, "in a situation of serious resource constraints, there is often keen inter-sectoral competition for financial resources from health, housing, social welfare and other government functions".[12]

The higher-education sector must compete with other sectors (e.g. basic education, national security) for public funds. Sometimes a given value could be achieved more cost-effectively through allocation of funds to a sector other than higher education (e.g. basic education) than through allocating funds to higher education. In other cases there will be a different type of value, which higher education is incapable of or inept at realising, which justifies diverting funds away from the higher education sector to a sector which is capable of realising it (e.g. national security).

Inter-sectoral Efficiency is achieved if the values realised through spending on higher education could not be realised more cost-effectively through spending on other sectors, and do not crowd out more important values that could have been realised through spending on other sectors.

10 G. Brown (2010) *Why the right is wrong: The progressive case for Britain's future*, p. 60.
11 Pillay (2008) 'Higher education funding frameworks in SADC' in *Towards a common future,* p. 139.
12 Ibid., p. 137.

2. Access

There is a broad consensus that it is unacceptable for individuals to be effectively barred from pursuing higher education, or realising their career aspirations, due to their gender, racial group or socio-economic background. In other words, there is broad agreement that a quite demanding form of equality of opportunity ought to guide policy-making in South Africa. Most relevantly for us here, society-members should have equal opportunities to receive both a university education and to secure employment.

It is useful to distinguish between *formal* and *substantial* equality of opportunity.[13]

2.1 Formal Equality of opportunity

Formal equality of opportunity is the principle that there must be no legal or conventional barriers preventing the most qualified applicant for a university place or job from taking it up.

This principle forms the basis for anti-discrimination legislation in South Africa as elsewhere.[14]

2.2 Substantial Equality of opportunity

Substantial equality of opportunity is far more demanding than formal equality of opportunity. It is the principle that there must be no social barriers preventing individuals from becoming equally qualified for a university place or job for which they have equal natural aptitude.

An individual's socio-economic background can prove a barrier to the realisation of their aspirations just as surely as discriminatory laws and conventions can. But whether one is born into a rich family or a poor family is just as "arbitrary from a moral point of view" as what caste or bloodline one

13 For more detail, see G. Hull (2014) 'Affirmative action' in J. Winfield, G. Hull & G. Fried, *Business ethics & other paradoxes*, pp. 200-201.

14 The formal equality of opportunity principle can be overridden by the need for affirmative action programmes in countries, such as South Africa, with a history of racist discrimination and exclusion. Such programmes can be justified on intra-sectoral Efficiency grounds, if they can be expected to make society more just in the future (R. Dworkin (1976) 'DeFunis v. Sweatt' in M. Cohen, T. Nagel & T. Scanlon (eds.) *Equality and preferential treatment*, pp. 63-83). They may also be justifiable on Equality grounds (see section 4; and see T. Hill (1991) 'The message of affirmative action' in *Social Philosophy and Policy*, 8(2), pp. 108-129) or because they provide redress for past wrongs (G. Hull (2015) 'Affirmative action and the choice of amends' in *Philosophia*, 43(1), pp. 113-134).

happens to be born into.[15] None of these morally irrelevant factors should be allowed to determine whether somebody realises their educational and career aspirations or not. This is the philosophical rationale for embracing not just formal but also substantial equality of opportunity.[16]

I use the term 'Access' to refer to the requirement that, other things equal, both formal and substantial equality of opportunity should be realised as far as possible. It is important to be aware of a potential ambiguity here, though. Sometimes the word 'access' is used to mean simply the number of undergraduate places in the higher education system. Used in this different sense, widening access to higher education is not necessarily the same thing as increasing equality of opportunity. It would be possible to increase the number of undergraduate places at universities while reducing equality of opportunity in how they were assigned; and, conversely, it would be possible to equalise opportunities to study at university while shrinking the size of the student cohort year on year.

The greatest impediment to Access is the variable level of basic and secondary education received by different groups in society.[17] There is thus a powerful inter-sectoral Efficiency argument against diverting public funds away from basic and secondary education to fund higher education. Indeed, if Access was all that mattered, it would make sense to reduce the funding of higher education and instead dedicate resources to ensuring an equally high-quality school education for all South Africans. But doing this would be likely to reduce the extent to which the public and private goods outlined above in 1.2 were realised, in which case there would be inter-sectoral Efficiency reasons for not pursuing this strategy.

3. Fairness

For the value of Access – as discussed above in Section 2 – what matters is what determines whether a given individual will receive a university education.

15 J. Rawls (1999) *A theory of justice*, p. 63.

16 Versions of this argument are set out in B. Williams (1973) 'The idea of equality' in B. Williams, *Problems of the self: Philosophical papers 1956-1972* and Rawls (1999) *A theory of justice*, section 12.

17 N. Barr (2012) 'The Higher Education White Paper: The good, the bad, the unspeakable – and the next White Paper' in *Social Policy & Administration*, 46(5), pp. 487-488; P. Pillay (2010) 'Good practices, possible lessons and remaining challenges' in P. Pillay (ed.) *Higher education financing in east and southern Africa*, p. 224.

For the value of Fairness, by contrast, what matters is how the benefits and costs of higher education are allocated among members of society. The term 'equity' is often used to cover both values. This is understandable since philosophically they are both grounded in an acknowledgement of the equal moral worth of all society-members. Nonetheless, the two values are distinct, and realisation of one of them does not entail realisation of the other.

The on-going life of a society is a co-operative enterprise, in which all its members participate to some degree, and from which all its members benefit in ways they could not have done in isolation. There is, consequently, a strong presumption in favour of an equal distribution of the benefits of social co-operation, and against an allocation which entails benefits to one societal group being paid for by a different societal group which does not receive equivalent benefits.

The presumption in favour of distributive equality is not inviolable, however. If (a) some individuals have sacrificed more and worked harder than others, or if (b) an equal share of the social product does not translate into as much well-being for some individuals as it does for others, then it is fair that those individuals receive a larger share of the social product than others.[18] In addition, if (c) an improvement in the condition of the least well-off members of society is impossible without a material incentive to the most enterprising in society, then the resulting inequality would arguably not be unfair.[19] Considerations of type (c), among other factors, will be relevant to the complex issue of how large the publicly subsidised higher education sector should be. Considerations of type (b) mean that students with special needs (e.g. disabled students) should not have to pay extra for university facilities which meet those needs (e.g. wheelchair ramps). I assume here that considerations of type (a) do not justify significant departures from distributive equality within a higher-education funding model, but rather explain – in conjunction with considerations of type (c) – why it is not necessarily unfair that some graduates in employment earn significantly more than others.

University tuition can be fully publicly funded, or it can be fully funded by

18 For more detail, see W. Kymlicka (2002) *Contemporary political philosophy: An introduction*, pp. 73-74; A. Sen (1999) *Development as freedom*, pp. 72-74; G. Hull (2015) 'From well-faring to well-being: Prospects for a metric of liberal egalitarian justice' in Hull (ed.) *The equal society*, pp. 153-154.

19 For a statement of this position and argumentative support for it, see Rawls (1999) *A theory of justice*, section 13.

student fees, or it can be funded by a mixture of the two.[20] If higher education generated only public goods, then all society-members could be expected to benefit equally from it, and it would consequently be fair for higher education to be fully publicly funded. But, as was discussed above in 1.2, in fact university education generates a mixture of public goods and substantial private goods. If everybody attended university, so that the substantial private goods of higher education accrued to everyone, then – again – all society-members could be expected to benefit equally from it, and it would be fair for higher education to be fully publicly funded.

But it is only a minority of society-members who receive a university education. Fairness therefore tells us it would be wrong for university tuition to be fully publicly funded, as this would amount to intrinsic benefits and a considerable competitive advantage in the employment market for one group in society (those who complete a university degree) being funded by another group (those who don't complete a university degree) which does not receive equivalent benefits.

This is true despite the fact that university graduates generally pay more tax over their lifetime than non-graduates. This can be seen most clearly by comparing a graduate and a non-graduate with the same lifetime earnings, who as a result pay the same amount of tax over their lifetimes – say R1 000 000. If the cost of the private benefits of the graduate's university tuition was R200 000, and this was paid for from the public purse, then over their lifetime the graduate contributes R800 000 to public services (e.g. infrastructure, healthcare) via taxation, once they have repaid the cost of the private benefits to them of higher education. This is 20% less than the R1 000 000 contributed by the non-graduate with identical lifetime earnings, which is "horizontally inequitable".[21] However much tax they pay, graduates contribute

20 Some South African universities have succeeded in attracting voluntary funding from corporations to cover a proportion of tuition costs (G. Wangenge-Ouma & N. Cloete (2008) 'Financing higher education in South Africa: Public funding, non-governmental revenue and tuition fees' in *South African Journal of Higher Education*, 22(4), p. 912), and the idea of increased taxation of the corporate sector to fund higher education is often floated (B. Wolhuter & S. Mlambo (2015) 'Tax to help poor students mooted' in *Cape Argus*, 19 October). Taxation of corporate income raises complex theoretical issues (R. Reich (2009) *Supercapitalism: The battle for democracy in an age of big business*, pp. 216-218). Voluntary funding from non-governmental sources (apart from student fees) tends 'to fluctuate, at times significantly, from year to year'. This 'revenue volatility' (Wangenge-Ouma & Cloete (2008) 'Financing higher education in South Africa: Public funding, non-governmental revenue and tuition fees' in *South African Journal of Higher Educatio*n, 22(4), p. 913) means it would be unwise for a higher-education funding model to depend on voluntary corporate contributions. So in the text I concentrate on student fees and government subsidies as the principal sources of funding for higher education.

21 N. Barr (2004) 'Higher education funding' in *Oxford Review of Economic Policy*, 20(2), p. 267.

proportionally less in taxation to public services than non-graduates when university tuition is fully publicly funded. Fairness tells us this is unacceptable.

On the other hand, there is no Fairness objection to the public goods produced by higher education being publicly financed, since these benefit all of society. Thus from a Fairness perspective, a mixed model of higher-education funding is desirable. To the extent that higher education generates private benefits, the recipients of those benefits should pay for it. To the extent that higher education generates public goods, it should be paid for from the public purse. The public funding of higher education can come partly in the form of incentives and earmarked subsidies designed to promote the balanced pursuit of the broad set of goals outlined above in 1.2.

As noted above in 1.2, it is difficult to quantify the external benefits generated by university education. Though it is very important for government not to discount these less tangible public goods generated by higher education, we can justifiably conclude that since its private benefits are both very substantial and more certain than its public benefits, higher education should be financed somewhat more from student contributions than from public money.

In South Africa, the split between public funding and fees varies from institution to institution.[22] In the sector as a whole, the proportion of university income from Government subsidy has steadily declined in recent years;[23] however, it remains larger than the proportion of income from student fees.[24] The argument of this section indicates that it would be fair for student fees to rise until they contribute somewhat more than Government subsidies to the costs of university tuition.

If Fairness was all that mattered, students could be required to pay these higher fees before or during their programme of undergraduate study. However, many qualified students would not be able to access the necessary funds at that time – from their family or other sources. This would make socio-economic background a determinant of who was able to study at university: a clear violation of Access. On top of that, upfront fees to be paid before or during study would undermine intra-sectoral Efficiency, since society would

22 Wangenge-Ouma & Cloete (2008) 'Financing higher education in South Africa: Public funding, non-governmental revenue and tuition fees' in *South African Journal of Higher Education*, 22(4), p. 911.

23 Wangenge-Ouma (2012) 'Tuition fees and the challenge of making higher education a popular commodity in South Africa' in *Higher Education: The International Journal of Higher Education Research*, 64(6), p. 835.

24 N. Cloete (2015) 'The flawed ideology of 'Free Higher Education'' in *University World News*, 6 November.

not benefit from the contribution which its gifted young people from less advantaged socio-economic backgrounds could have made.

Can Fairness, Access and Efficiency be combined in a higher-education funding model? In the remainder of this section, four different funding models are compared with special attention to their ability to realise Fairness, Access and Efficiency simultaneously.

Free Higher Education (FHE). FHE is the funding model whereby university tuition is fully publicly funded. In South Africa this model has attracted a lot of support from student organisations and movements,[25] and it appears to have some support from within the ANC-led Government as well.[26] FHE removes the Access problem created by upfront fees. However, it is highly objectionable from a Fairness point of view, as has been argued earlier in this section. Though its violation of Fairness is the main problem with FHE, it can also be expected to lead to shortfalls in allocative Efficiency, since with FHE price can no longer serve as a signalling mechanism and the sector must resort entirely to the potentially much less efficient method of central planning.[27]

Differential Fees (DF). DF is the funding model on which different students pay different levels of fees for the same programme at the same university, depending on their household assets and income.[28] Some of those campaigning with the slogan 'Free education in our lifetime' in South Africa in 2015 actually supported free higher education only for the poor – i.e. a version of DF. If well designed, DF can – like FHE – remove the Access problem caused by upfront fees. However, DF relies on a means test to determine households' ability to pay. Means tests are known to be expensive to administer, often unreliable

25 See, for example, L. Mantashe (2015) 'Give the masses free education' in *Cape Times*, 21 October; B. Kamanzi (2015) 'Open the gates once and for all' in *Cape Argus*, 23 October; Wangenge-Ouma (2012) 'Tuition fees and the challenge of making higher education a popular commodity in South Africa' in *Higher Education: The International Journal of Higher Education Research*, 64(6), p. 838; E. Redden (2015) '#FeesMustFall' in *Inside Higher Ed*, 18 November.

26 Minister of Higher Education and Training Blade Nzimande 'said in a radio interview on Monday 19 October 2015 that '"no fee" universities, like those in Germany, were the ideal' (Q. Mtyala (2015) 'Students reject deal' in *Cape Times*, 21 October).

27 The absence of pricing in itself arguably leads to a Fairness shortfall. Barr writes: 'Counter-intuitively, variable fees are also fairer than other approaches; why should fees at a local institution be the same as one at an internationally renowned university?' (Barr (2009) 'Financing higher education: Lessons from economic theory and reform in England' in *Higher Education in Europe*, 34(2), p. 205).

28 For example, Democratic Alliance Shadow Minister of Higher Education and Training, Belinda Bozzoli, has suggested that '[u]niversities could urgently adopt a sliding fees scale approach, as in Italy, where students' family income levels dictate the fees charged' and Pillay also advocates 'a differentiated fee structure in universities based on socio-economic status' (B. Bozzoli (2015) 'University funding: There are budget-neutral options' in *Financial Mail*, 29 October - 4 November, pp. 16-17; P. Pillay (2015) 'Financing of universities: Promoting equity or reinforcing inequality' (unpublished colloquium paper).

and open to corruption.[29] The value of Equality provides a further reason for objecting to means-testing, which will be introduced below in Section 4. But just as in the case of FHE, the strongest objection to DF is a Fairness objection. If a student from a poor household completes a degree and goes on to become a middle- or high-earner, accumulating assets over the course of their adult life, it is surely unfair that the university education which gave this student a competitive advantage in the labour market should be funded entirely by other society-members (including the unemployed and the very poorest, through their consumption taxes), and not at all by the recipient of the private benefits of higher education themselves. The Access gains of FHE and DF come at the cost of significant Fairness losses.

Graduate Tax (GT). GT is a special tax which only graduates of public university degree programmes have to pay. A standard model is for every income-tax-paying graduate to pay one percentage point more income tax than a non-graduate income-tax-payer within the same income bracket. GT enables students to pay for the private benefits of university education (potentially realising Fairness), but not to do so until, and unless, that education has resulted in a substantial income, thus making payment manageable (realising Access). Though this reconciliation of Fairness and Access is a positive achievement as far as it goes, there are two important downsides to GT. First, since the special tax serves as a substitute for fees, price cannot serve as a signalling mechanism in the higher education sector, which would tend to undermine allocative Efficiency. Second, the amount of GT paid by a given graduate is likely to correspond at best only very roughly with the cost of the private benefits they received from higher education. While the Fairness objection to DF is that many students will pay less for the private benefits of higher education than they should, the Fairness objection to GT is that high-earners in particular will pay more for the private benefits of higher education than they should, since they will continue to pay an extra percentage point of income tax throughout their income-tax-paying lives.

Income-contingent Loans (ICL). ICL is a loan whose rate of repayment is determined neither by its size nor by the interest rate on the loan, but by the

29 Pillay (2010) 'Good practices, possible lessons and remaining challenges' in Pillay (ed.) *Higher education financing in east and southern Africa*; p. 229; J. Kruger (2015) 'Perspectives on student funding: Credit market, social protection and pyramid inversion' (unpublished colloquium paper); E. Garwe (2015) 'Responsive and sustainable higher education funding: Lessons from Zimbabwe' (unpublished colloquium paper).

level of income of the individual who takes out the loan.[30] Income-contingent student loans are loans provided to students by the government to help with the costs of university study, for which no security need be provided by either the student or their household-members. Once a student has graduated and achieved a set threshold level of earnings, they begin to repay the loan at a rate which is a specified percentage of their income. This percentage may increase as their income increases. How much of the loan the graduate pays back, and how quickly, is determined entirely by the level of income they achieve.

ICL makes Fairness compatible with Access in precisely the same way as GT: by ensuring that payment for the private benefits of higher education occurs at a time, and at a rate, which is manageable for the recipient of those benefits. But ICL avoids both of the downsides of GT. First, providing students with loans from which to pay fees enables price to continue to play a signalling role in the higher education sector, fostering allocative Efficiency. Second, on the ICL model, the amount ultimately paid by each graduate tracks much more closely the extent of private benefit they received from higher education than happens on the GT model. Once they have repaid their loan, graduates make no further payments. Thus ICL is superior to GT from the point of view of Fairness as well as from that of Efficiency.

By allowing the retention of fees – thus fostering Fairness and Efficiency – but using the consumption-smoothing device of income-contingent student loans to ensure manageable payment – thus fostering Access – ICL reconciles the three values of Efficiency, Access and Fairness more successfully than FHE, DF or GT.

The virtues of ICL have been visible to policy-makers for some time. Versions of ICL have been successfully introduced on a large scale in Australia and the United Kingdom.[31] South Africa's National Student Financial Aid Scheme (NSFAS) already embodies it to a limited degree.[32] In recent years other African countries have increasingly turned away from FHE and DF funding models and towards ICL models.[33]

30 Barr (2009) 'Financing higher education: Lessons from economic theory and reform in England' in *Higher Education in Europe,* 34(2).

31 Barr (1998) 'Higher education in Australia and Britain: What lessons?' in *Australian Economic Review*, 31(2), pp. 179-188; Barr (2012) 'The Higher Education White Paper: The good, the Bad, the unspeakable - and the next White Paper' in *Social Policy & Administration*, 46(5), pp. 483-508.

32 Pillay (2008) 'Higher education funding frameworks in SADC' in *Towards a Common Future*, p. 169.

33 Pillay (2010) 'Good practices, possible lessons and remaining challenges' in Pillay (ed.) *Higher education financing in east and southern Africa*, p. 230.

In order fully to realise the value of Access, an ICL scheme must enable prospective students from even the poorest backgrounds to pursue higher education without fear of running into serious financial difficulties either during their course of study (which could lead to them failing or dropping out) or afterwards (which could lead to bankruptcy and personal disaster). Thus Access provides us with a strong reason for increasing the size of NSFAS loans in South Africa so that they cover not only full tuition costs, but also the costs of transport, books, food and accommodation, and other reasonable living costs.[34] For the same reason, the earnings threshold at which repayment of a NSFAS loan kicks in should be raised from the current very low level of R30 000 per year,[35] to at least the earnings threshold at which income tax payment begins.[36] Access also dictates that the coverage of NSFAS loans should be extended to include the "missing middle" – households with a total annual income of between R122 000 and R500 000, which do not qualify for NSFAS loans but struggle to fund university tuition.[37] These households frequently take out expensive and risky private loans in order to cover university fees.[38] The Government should use its ability to borrow money more cheaply than private individuals can to convert bad debt into good.[39]

It might be thought that, owing to human psychology, the presence of fees – even when accompanied by a comprehensive loan scheme – must always constitute a substantial disincentive to go on to university study, particularly for those from less advantaged socio-economic backgrounds, so that from an Access point of view FHE and GT would always have the edge on DF and ICL. However, empirical findings indicate otherwise. Data collected by the Organisation for Economic Co-operation and Development (OECD) "show absolutely no cross-country relationship between the level of tuition countries charge and the participation of disadvantaged youth in tertiary education". On the contrary, "social mobility is worse in Germany which pays

34 The Department of Higher Education and Training and other stakeholders agreed that such an expansion of NSFAS was a priority at the Higher Education Transformation Summit in Durban in October 2015, as recorded in the summit's press release (www.dhet.gov.za); see also Wolhuter & Mlambo (2015) 'Tax to help poor students mooted' in *Cape Argus*, 19 October.

35 This is the earnings threshold quoted on the NSFAS website: www.nsfas.org.za.

36 I give a further reason for this reform to NSFAS loans below in section 5.1.

37 Cloete (2015) 'The flawed ideology of 'Free Higher Education' in *University World News*, 6 November.

38 Z. Dano (2015) 'Not poor enough for student financial aid' in *Cape Argus*, 2 November.

39 Kruger (2015) 'Perspectives on student funding' (unpublished colloquium paper).

for all university education through the public purse than it is in the UK".[40] In the UK, university fees were allowed to rise to up to £9 000 per year in 2011, in conjunction with an expanded ICL scheme. Yet the Universities and Colleges Admissions Service (UCAS) reported that in 2014, disadvantaged young people were over 10% more likely to enter higher education than in 2013, and over 30% more likely to than in 2009.[41]

In the South African context a different argument against ICL is sometimes made. This argument claims it is unfair for graduates from less advantaged socio-economic backgrounds to have to repay their NSFAS loans, because they are often expected to support members of an extended family or other members of their home communities.

It is certainly true that many South African students with NSFAS loans pay the 'black tax'. But this is not a good argument against ICL, and in favour of FHE or DF. South Africans who suffer due to sickness, old age, poverty or unemployment should not be helped by the clumsy and uncertain method of writing off their relatives' student debt. Instead, help should come to them directly through targeted policies: public pensions, measures to end child poverty, a comprehensive unemployment insurance scheme and adequate public healthcare. The country will have more funds for these vital purposes if NSFAS loans to cover university fees are paid back in full by all middle- and high-income graduates.

4. Equality

So far this paper has made the case for a mixed higher-education funding model, combining public subsidy and student fees. In Section 3 it was argued that it would be justifiable for fees at South African public universities to rise until they contributed somewhat more to tuition costs than government subsidy. But rising fees are only acceptable when accompanied by the consumption-smoothing device of income-contingent government loans to

40 A. Schleicher (2015) 'The sustainability of the UK's higher education system' in *OECD Education & Skills Today*, 6th January.

41 N. Hillman (2015) *Keeping up with the Germans? A comparison of student funding, internationalisation and research in UK and German universities*, pp. 17-18.

students. If the value of Access is to be realised simultaneously with the values of Fairness and Efficiency, NSFAS must increase the size of its loans, broaden its coverage, and raise the threshold earnings level at which repayment of student loans kicks in.

The present section goes further, arguing that eligibility for expanded NSFAS student loans needs ultimately to be extended to all South African first-time undergraduate students. An expansion of NSFAS on this scale would clearly require a large capital investment to begin with, and many would object that it is simply unaffordable. I explain below in Section 5 why this is not necessarily the case. The primary basis for expanding NSFAS into a loan scheme with universal eligibility is – the present section argues – the value of Equality.

There is a growing consensus among egalitarian political philosophers that acknowledgement of the equal moral worth of all society-members entails more than just instating equal legal status, fostering equality of opportunity, and achieving a fair distribution of goods – crucial and challenging as these goals are. How equal a society is depends also on the nature of the relations which exist between its members.[42] This development in philosophical theory complements an increasing interest from governments and international bodies in the texture of social relations, and especially in identifying measures which foster social cohesion.[43]

Of course, many societies in the past achieved cohesion through systems of violent coercion, practices of habitual deference and myths of natural superiority and inferiority, all of which are anathema to a country – like present-day South Africa – which acknowledges each citizen's equal moral worth. So the goal of policy must be, not cohesion of any sort whatever, but a cohesive society of equals.

I use the term 'Equality' to refer to the social or relational value realised by a society whose cohesion depends, not on deference, obedience or mythical natural hierarchies, but rather on the solidarity of individuals who treat each other as, and feel that they are, equals.[44] Moving a society towards Equality will involve

42 C. Fourie, F. Schuppert & I. Wallimann-Helmer (2015) 'The nature and distinctiveness of social equality: An introduction' in C. Fourie, F. Schuppert & I. Wallimann-Helmer (eds.) *Social equality: On what it means to be equals*, pp. 1-17.

43 M. Healy (2013) *Philosophical perspectives on social cohesion: New directions for education policy.*

44 D. Miller (1997) 'Equality and justice' in *Ratio* (new series) 10(3), pp. 222-237; E. Anderson (1999) 'What is the point of equality?' in *Ethics*, 109(2), pp. 287-337; C. Fourie (2012) 'What is social equality? An analysis of status equality as a strongly egalitarian ideal' in *Res Publica*, 18(2), pp. 107-126.

dismantling and minimising relations of inequality between society-members, including relations marked by exclusion, stigma, hierarchy and domination.[45]

The current South African higher education funding model makes use of a means test to determine eligibility for a NSFAS loan, and relies on household contribution to fund some or all of the tuition fees students are charged by universities. These features of the current model tend to undermine Equality in two principal ways.

4.1 Stigma

Egalitarian political philosophers have for some time warned that extensive, invasive means tests tend to undermine efforts to create a cohesive society of equals. There is potential for conflict between the values of Equality and Fairness here. Fine-tuning the distribution of the social product to accord with Fairness is likely to require continuous data collection and comprehensive means-testing; but these can give "the impression that one is not trusted, that one is an object of suspicion and hence is not being respected",[46] and often require people "to do things, or reveal things about themselves, that they find shameful", leading to a reduction in "their respect-standing".[47]

Means-testing is objectionable from the perspective of Equality insofar as it causes people to be "made to feel inferior",[48] and makes government support into "humiliating aid", stigmatising its recipients.[49] Means-testing should be avoided when possible, due to "the disrespect communicated by subjecting the poor to a level of scrutiny and control not experienced by the better off" and "the harmful effects on respect-standing and self-respect caused by shameful revelation".[50]

Consequently, advocates of social equality tend to support universal benefits over conditional benefits, other things equal.[51] It can even be worth tolerating some Fairness losses for the sake of the Equality gains which accrue from doing away with means-testing.[52]

Issues raised by students during the campus protests in South Africa in

45 J. Wolff (2015) 'Social equality, relative poverty and marginalised groups' in Hull (ed.) *The equal society*, Section 1.
46 J. Wolff (1998) 'Fairness, respect, and the egalitarian ethos' in *Philosophy & Public Affairs*, 27(2), p. 108.
47 Ibid., p. 109.
48 T. Scanlon (2002) 'The diversity of objections to inequality' in M. Clayton & A. Williams (eds.) *The ideal of equality*, p. 43.
49 Anderson (1999) 'What is the point of equality?' in *Ethics*, 109(2), p. 308.
50 Wolff (1998) 'Fairness, respect, and the egalitarian ethos' in *Philosophy & Public Affairs*, 27(2), pp. 121-122.
51 Ibid., p. 121; G. Hull (2014) 'Creating a society of equals' in *Cape Times*, 12 August.
52 Wolff (1998) 'Fairness, respect, and the egalitarian ethos' in *Philosophy & Public Affairs*, 27(2), p. 117.

October 2015 resonate with these political philosophers' warnings about means-testing. University of the Witwatersrand student Phaphama Dulwana wrote of "the humiliation of standing in a National Student Financial Aid Scheme line, of being treated like a number while your entire future hangs on how someone's day is going, being told you have to prove the degree of your impoverishment".[53] A member of the University of the Western Cape Fees Must Fall movement, Thozama Nozuko, wrote, "[W]e are calling for the Student Credit Management office, which expects students to prove their poverty before every registration, to fall".[54]

If Equality was all that mattered, it would be justifiable to introduce universal free higher education for the sake of fostering a cohesive society of equals. The campaign for free higher education in South Africa last year itself frequently achieved an impressive degree of solidarity among students, with a reduction of the familiar divisions along class and racial lines on South African university campuses. But our goal must be to realise Equality simultaneously with the distinct values of Efficiency, Fairness and Access as far as is possible. This points us towards an alternative universal solution: not universal free higher education, but universal eligibility for income-contingent student loans.

4.2 Domination

A higher-education funding model, like South Africa's, which relies on a household contribution to a student's costs of study (up to full tuition and living costs) preserves the power of household-members to interfere with students' decision-making about which university to apply to, which subject to study, and even whether to go to university at all. This discretionary power undermines Equality, since it establishes asymmetrical relations of domination between adult society-members with regard to important life decisions.

The financial leverage that heads of households currently have over prospective students' decision-making is also likely to undermine Access and Efficiency.

Household-heads may decide to fund the university costs of one but not all of their dependent household-members, or else may fund their costs

53 P. Dulwana (2015) '#WitsonFire: Student factionalism must fall' in *Mail & Guardian Thought Leader*, 28 October.
54 T. Nozuko (2015) 'Institutional racism quietly thrives at UWC' in *Cape Argus*, 23 October.

differentially, due to prejudices of various kinds. In the UK context, Barr & Crawford found that both "unpaid parental/spouse contributions and pressure to conform with parental/spouse wishes" were "likely to affect women more strongly than men, particularly women from certain cultural and ethnic backgrounds".[55] Though in the Southern African Development Community region there is a general trend for fewer women than men to attend university,[56] this is not true in South Africa, where the reverse is the case.[57] But household-heads' financial leverage can undermine Access without doing so along gender lines – indeed it can do so without resulting in any statistical trend likely to be detected. The larger point is that when a higher-education funding model relies on household contribution, it effectively makes Access a hostage to the beliefs and attitudes of household-heads.

Reliance on household contribution can also be expected to impede allocative Efficiency. Due to the rapid pace of technological change, parents and grandparents are likely to be less well-informed about the current demands of the labour market than their adult children or grandchildren. They are also sure to be less well-informed about the true aspirations, interests and – to an important degree – skills and talents of their adult children or grandchildren than those adult children or grandchildren themselves. To the extent that household-heads use their financial leverage to influence prospective university students' choices regarding university study, we can legitimately fear they will track the nature of the labour market twenty or more years ago rather than the nature of the labour market today. These problems with the information on which decisions influenced by household-heads are based will likely lead to the supply of graduates not matching demand in the labour market, to students dropping out or underperforming, and to graduates being unmotivated in their jobs or opting to return to university for reskilling.

But most fundamentally, the arbitrary power which a funding model's reliance on household contribution puts into the hands of household-heads generates asymmetrical relations of domination and dependence between

55 Barr & Crawford (1997) 'The Dearing Report, the government's response and a view ahead' in *The Dearing Report*, paragraph 115.

56 P. Pillay (2008) 'Higher education funding frameworks in SADC' in *Towards a common future*, pp. 130-135.

57 Wangenge-Ouma (2012) 'Tuition fees and the challenge of making higher education a popular commodity in South Africa' in *Higher Education: The International Journal of Higher Education Research*, 64(6), p.833.

adult society-members which undermine Equality.[58] This is an objection to the funding model even in cases in which Access and Efficiency are not undermined.

5. Reconciling Efficiency, Access, Fairness and Equality

Sections 1 to 4 of this paper together amount to an argument for a very substantial expansion of NSFAS. I have made the case that reconciling the values of Efficiency, Access, Fairness and Equality requires that all South African first-time undergraduate students be eligible for income-contingent government loans covering university tuition fees, accommodation, books, food, transport, and other reasonable living costs.

Implementing this proposal would, in the first few years, require a very large outlay of funds. DHET officials quote just shy of R40 billion as the extra annual outlay which would be required to extend NSFAS loan coverage to students from the 'missing middle'.[59] Implementing universal eligibility for NSFAS loans could require the same amount again, bringing annual outlay on loans up to a total of close to R90 billion (since annual transfers to NSFAS are – at the time of writing – a little less than R10 billion).

It might seem that this proposal is patently unaffordable. In terms of the conceptual apparatus introduced above in 1.3, wouldn't this inevitably constitute a violation of inter-sectoral Efficiency?

A full answer to this question would require us to determine what proportion of the total national budget should be allocated to higher education. There is currently deep disagreement on this issue, with some advocating a large increase in government spending on higher education as a percentage of gross domestic product (GDP),[60] and others arguing that, even if government revenue could be increased, the extra funds should be allocated to sectors

58 M. Garrau & C. Laborde (2015) 'Relational equality, non-domination, and vulnerability' in Fourie, Schuppert & Wallimann-Helmer (eds.) *Social equality*, pp. 45-64.

59 D. Parker (2015) 'Higher education funding challenges and the call for free education' (unpublished colloquium presentation).

60 Cloete (2015) 'The flawed ideology of 'Free Higher Education'' in *University World News*, 6 November.

other than higher education.[61] I cannot resolve this complex debate here.

This section outlines six concrete steps which, if taken, could make universal student loans an affordable policy even without any substantial increase in the proportion of GDP spent on higher education. Some of these are measures needed to confirm NSFAS' identity as a loan, not a bursary, scheme. Others are levers which policy-makers can use to ensure the shape of the loan scheme is in line with government spending decisions and liquidity.

5.1 Collection of NSFAS debt via the South African Revenue Service (SARS)

Efficient debt collection is indispensable to any large-scale student loan scheme. In South Africa, student loan debt collection has recently become less efficient.[62] This state of affairs must be rectified, by making student loan debt collection a responsibility of SARS, to be carried out in the course of income tax collection. Each NSFAS loan should be a direct contractual arrangement between a student and NSFAS, with SARS collecting payments due on the basis of a graduate's declared earnings. Debt collection by SARS can be facilitated by bringing thresholds for NSFAS loan repayment into line with the income tax thresholds.

5.2 No conversion of loan into bursary

Currently up to 60% of a NSFAS loan is converted into bursary in order to incentivise performance and timely completion of a degree.[63] It is uncertain to what extent these incentives have an effect upon student behaviour, and to what extent they simply reward students who attended higher-quality secondary schools. What is certain is that converting so much loan into bursary makes the current student loan scheme far more expensive than it would otherwise be. Eliminating the conversion of NSFAS loans into bursaries would make the scheme both hugely more affordable and – for the reasons given above in Section 3 – ultimately more fair.

61 Pillay (2015) 'Financing of universities' (unpublished colloquium paper).
62 Cloete (2015) 'The flawed ideology of 'Free Higher Education'' in *University World News*, 6 November.
63 The figure quoted on the NSFAS website is 40 per cent: www.nsfas.org.za. However with the introduction of the Final Year Programme this figure must be revised up to 60 per cent (Parker (2015) 'Higher education funding challenges and the call for free education' (unpublished colloquium presentation)).

5.3 An interest rate above the Government's cost of borrowing

In South Africa, as previously in other countries, the error has been committed of both setting the rate of repayment of a student loan at a percentage of a graduate's income, and subsidising the interest rate on the loan. The interest rate on NSFAS loans currently stands at 80% of the repo rate.[64]

How much of their NSFAS loan a graduate pays back per month is determined, not by the size of their loan or the interest rate on their loan, but solely by how much they are earning. Consequently, lending to students at a subsidised interest rate does not break down barriers to Access by making repayment more manageable; all it does is reduce the total amount of money repaid by loan-recipients to NSFAS. Due to the relatively long time it can take for graduates to repay their loans, a subsidised interest rate greatly increases the ultimate cost to the taxpayer of a student loan scheme.[65] This extra expense, rather than fostering Access, just undermines Fairness, since it in effect takes the form of an extravagant gift from the state to middle-income graduates.[66] Thus the interest rate on NSFAS loans should on no account be lower than the Government's cost of borrowing.

There are two good reasons for raising the interest rate on NSFAS loans even further, to above the Government's cost of borrowing – though still below the rate charged in the commercial credit markets.[67] Firstly, it disincentivises the practice of arbitrage, whereby students with access to other funds nonetheless take out a NSFAS loan, place the money in a high-interest savings account, and reap the profit.[68] Arbitrage undermines Fairness, so it is desirable for an end to be put to this practice. Secondly, when the rate of interest stands at above the Government's cost of borrowing, this means that not all of the loss on the loans portfolio must be borne by the taxpayer. Adding a 'risk premium'[69] to the interest rate introduces a social insurance element into the higher-education

64 This is the rate quoted on the NSFAS website: www.nsfas.org.za. The repo rate is the rate at which the South African Reserve Bank lends to commercial banks.

65 In a previous incarnation of the UK's student loan scheme, one third of all money lent to students was not repaid purely because of the interest rate subsidy (Barr (2004) 'Higher education funding' in *Oxford Review of Economic Policy*, 20(2), p. 271.

66 Ibid., p. 271.

67 I am no longer of the view that government loans to students should be 'low-interest', if that is taken to mean an interest rate at or below the government's cost of borrowing (G. Hull (2015) 'Free university education is not the route to social justice' in *The Conversation* (Africa), 27 October).

68 Barr (2004) 'Higher education funding' in *Oxford Review of Economic Policy*, 20(2), p. 271.

69 Barr (2012) 'The Higher Education White Paper: The good, the bad, the unspeakable - and the next White Paper' in *Social Policy & Administration*, 46(5), p. 503.

funding model, and can make a loan scheme substantially more affordable. This feature has already been successfully introduced in New Zealand and the UK.[70]

Once a risk premium is added to the interest rate, a loan scheme with universal eligibility has a progressive fiscal incidence across those who attend university. In South Africa, the non-completion rate is far higher for students from poorer households currently eligible for a NSFAS loan than for students from richer households.[71] When they pay back their loan at the higher interest rate, graduates from the latter group will also cover the cost of irrecoverable loans to non-graduates from the former group to a substantial degree.

5.4 Recoverable loans recognised as an asset in the public accounts

When a government introduces a large-scale student loan scheme, it is crucial for it to represent perspicuously in its national accounts the distinction between (a) money invested which will ultimately be recovered and (b) monetary outflows which will not be recovered. Only outflows of type (b) – i.e. that portion of outlay on loans which is not expected to be recovered – should be marked as expenditure in the public accounts. Finance Minister Pravin Gordhan has recently reaffirmed that South Africa's "expenditure ceiling is sacrosanct".[72] This is a welcome move. However, it should not be allowed to disable the Government from turning bad student debt into good, which it will do for as long as "the repayable part of loans" is treated "in the same way as grants to students" in the national accounts.[73]

Of course, until a reliable method of debt collection has been put in place, it is impossible to make an accurate prediction of how much outlay on loans will ultimately be recovered. And, even with a reliable method of debt collection in place, if overly large chunks of student debt are routinely written off, and the interest rate on loans is too generously subsidised, then outflows of type (a) – i.e. the investment in loans which will ultimately make its way back into the public coffers – will amount to nil, or close to nil.

But if the reforms outlined above in 5.1 to 5.3 are implemented, the situation changes considerably. Let us assume that, with debt collection by

70 Ibid., p. 497; Barr (2004) 'Higher education funding' in *Oxford Review of Economic Policy*, 20(2), p. 271.
71 S. Nxasana (2015) 'Education is part of the real world' in *News 24*, 30 November.
72 C. Bisseker & L. Ensor (2015) 'One blow too many: SA heads for recession and an earlier junk rating after the Finance Minister's axing' in *Financial Mail*, 17-23 December, p. 28.
73 National Committee of Inquiry into Higher Education (1997) *Higher education in the learning society: Report of the National Committee*, p. 327.

SARS, an end to the conversion of loan into bursary, and an interest rate equal to the government's cost of borrowing, 80% of outlay on loans can ultimately be recouped once borrowers have achieved healthy earnings.[74] That means that, of R90 billion total outlay, only R18 billion should be recognised as expenditure in the public accounts. Then let us assume that, with the interest rate on loans raised somewhat above the government's cost of borrowing, as recommended above in 5.3, half of the loss on the loans portfolio can ultimately be borne by repaying graduates. That brings the total expenditure on NSFAS loans down to R9 billion – a much less daunting figure.

NSFAS counts its outflows on student loans – adjusted for an impairment due to anticipated non-repayments – as an asset on its financial statement.[75] This is as it should be, and is in accord with the Standards of Generally Recognised Accounting Practice.[76] But the repayable part of loans should be recognised as an asset not just of NSFAS, but of the State. To effect this, an amount equal to the loans asset on NSFAS' balance sheet should be recognised as owed by NSFAS to DHET,[77] and the same amount should be recognised as owed in its turn by DHET to the National Treasury. This would be a simple and perspicuous way of marking the difference between loans (refundable) and bursary payments (expenditure) in the public accounts.

Currently, the South African Government's accounts treat student loans in the same way as bursaries, a practice which "misleads rather than informs".[78] For as long as it persists in this accounting practice, Government expenditure targets will irrationally constrain South Africa's ability to empower its young people to invest in their future.[79]

74 I don't think this is an unrealistic assumption, given that South African university fees are cheap by international standards (see Cloete (2015) 'The flawed ideology of 'Free Higher Education' in *University World News*, 6 November), and graduate unemployment in South Africa is low.

75 NSFAS (2015) *2014/2015 annual report: Toward a student-centred approach*, p. 79 & 87.

76 Thanks to Ilse Lubbe for guidance on this point.

77 Currently DHET recognises all outflows to NSFAS as grants.

78 National Committee of Inquiry into Higher Education (1997) *Higher Education in the Learning Society*, p. 327; Nicholas Barr and Iain Crawford write: 'Since not all lending to students is repaid, it would be wrong to deduct all student loans from public expenditure. But it makes equally little sense to present the public accounts as though no student loans are repaid. This approach implicitly assumes that there will be a plague which wipes out all graduates on the day they graduate, thus preventing any repayments at all' (Barr & Crawford (1997) 'The Dearing Report, the government's response and a view ahead' in *The Dearing Report*, paragraph 93).

79 Barr comments: 'It is true that loans will bring in significant additional resources in 20 years' time – but (as one Vice-Chancellor put it on the day the Dearing Report was published) you cannot revive a corpse' (Barr (1998) 'Higher education in Australia and Britain: What lessons?' in *Australian Economic Review*, 31(2), p. 183).

5.5 A temporary graduate tax

Needless to say, the change in accounting practice outlined above in 5.4 does not conjure money out of thin air. There remains the cash-flow issue of how to raise the capital required for the substantial expansion of NSFAS argued for in this paper. It might be possible to raise sufficient capital through the issue of Government bonds and by restructuring the higher-education budget so that less is spent on subsidies to universities and more on student financial aid.[80] If not, a temporary graduate tax is one device which could help achieve the necessary liquidity without redirecting funds from other Government priorities.

Above in Section 3 it was explained why an income-contingent student loan scheme is a better form for the student contribution to the costs of higher education to take than a graduate tax. But there would be a clear Fairness rationale for temporarily levying a tax on current graduates who studied and paid fees in the past. Current graduates paid proportionally less towards the costs of their higher education than today's students, which is an intergenerational inequity. A temporary graduate tax on current graduates – taking the shape outlined above in Section 3 – would enable that inequity to be rebalanced, albeit in a rough and ready manner.

5.6 Universal eligibility to be phased-in gradually

Another way of ensuring sufficient liquidity for the proposed reforms to NSFAS would be to introduce these reforms not all at once, but gradually. The changes outlined above in Section 3 – increasing the size of loans and bringing the 'missing middle' inside the NSFAS tent – need to be prioritised and ideally implemented within the next two to three years. On the other hand, the introduction of universal eligibility for NSFAS loans – though important (as argued above in Section 4) – is not quite so urgent. This further expansion of NSFAS could be implemented five to ten years from now, once the trickle of NSFAS loan repayments has increased to a steady stream.

The measures outlined in 5.1–5.6 above indicate that the policy of income-contingent student loans with universal eligibility can reconcile the values of Efficiency, Access, Fairness and Equality not only in theory but also in practice.

80 Above in section 5 I explained why such a restructuring would be fair.

Once it is decided how much funding should be allocated to higher education, and what a fair split between university subsidies and student financial aid would be, (a) a temporary graduate tax, (b) adjustment to the interest rate on loans, and (c) the gradual introduction of universal eligibility can all be used to tailor the loan scheme to fit budgetary and cash-flow constraints.

To achieve the liquidity required for the expansion of the loan scheme in the short term, the Government should issue special Government bonds marked as 'Student Financial Aid Scheme Government Bonds', which will attract socially responsive investors both in South Africa and abroad. Investing in these specially marked Government bonds would be a more constructive way for business corporations to contribute to the funding of university tuition than the current somewhat piecemeal approach. Investment in Student Financial Aid Scheme Government Bonds would be an attractive form of 'corporate social responsibility' for many business corporations.

In the closing months of 2015, the South African Government was confronted with an articulate, attractive and well-coordinated student pressure group which demanded lower university fees and ultimately free higher education. As argued in this paper, neither of these policies would lead to a more just society for South Africa. If it is to engage successfully with this pressure group, and maintain its legitimacy in the eyes of its broader citizenry, the Government must not only choose the right higher education funding policy, but also communicate persistently and persuasively why the values behind that policy make it the right one. The route to social justice is for South Africa to empower its young people from all socio-economic backgrounds to invest in their shared future.[81]

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