The National Student Financial Aid Scheme (NSFAS) and the Development of the Higher Education System in South Africa

A description of the demographics and performance of NSFAS beneficiaries

Haroon Bhorat and Neryvia Pillay

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LABOUR MARKET
INTELLIGENCE PARTNERSHIP

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ABBREVIATIONS AND ACRONYMS

CHET	Centre for Higher Education Transformation
CPUT	Cape Peninsula University of Technology
CUT	Central University of Technology
DBE	Department of Basic Education
DHET	Department of Higher Education and Training
DAFF	Department of Agriculture, Fisheries and Forestry
DoL	Department of Labour
DSCI	disadvantaged students' cost index
DSI	disadvantaged students' index
DUT	Durban University of Technology
EFC	expected family contribution
EU	European Union
FCI	fixed cost of study
FCS	full cost of study
HBI	historically black institution
HEI	higher education institution
HWI	historically white institution
LMIP	Labour Market Intelligence Partnership
MUT	Mangosuthu University of Technology
NDP	National Development Plan
NMMU	Nelson Mandela Metropolitan University
NPHE	National Plan for Higher Education
NSFAS	National Student Financial Aid Scheme
NWU	North-West University
RU	Rhodes University
SAICA	South African Institute of Chartered Accountants
SU	Stellenbosch University
TEFSA	Tertiary Education Fund of South Africa
TUT	Tshwane University of Technology
TVET	technical vocational education and training
UCT	University of Cape Town
UFH	University of Fort Hare
UFS	University of the Free State
UJ	University of Johannesburg
UKZN	University of KwaZulu-Natal
UP	University of Pretoria
UV	University of Venda
VUT	Vaal University of Technology
Wits	University of the Witwatersrand

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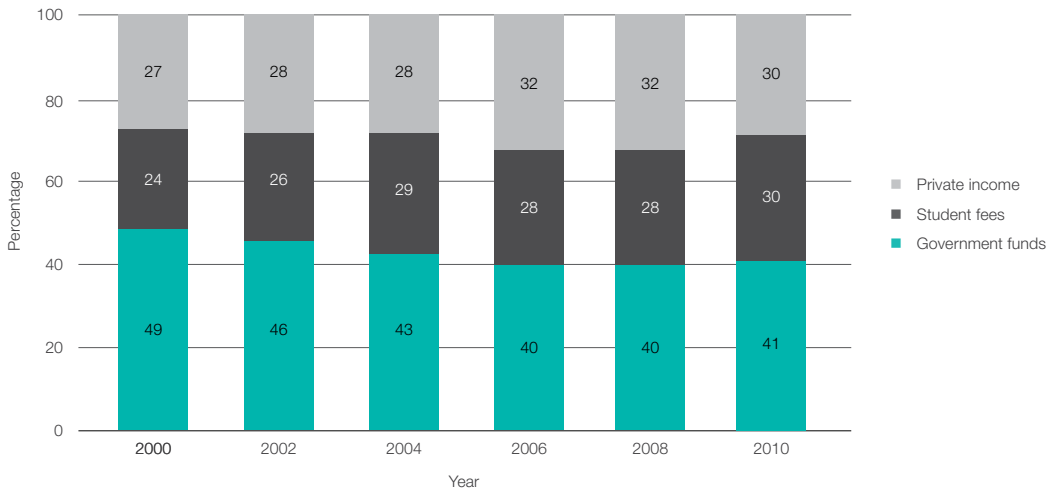
INTRODUCTION

The National Development Plan (NDP 2030), released in 2012, seeks to eliminate poverty and reduce inequality by 2030 and recognises that one of the key priorities of achieving these goals is to improve the quality of education, skills development and innovation in South Africa. The higher education sector is an important component in achieving the objectives of NDP 2030, as it is crucial for the production of skilled workers who earn higher incomes, are more productive, and bring about a shift to a more knowledge-intensive economy. Increased access to higher education across socio-economic, gender and racial groups can raise incomes among the previously disadvantaged and thereby reduce inequality. Higher education increases the country's stock of human capital and is a key driver of economic growth through providing individuals with the necessary skills and training. In order to transition towards a knowledge-intensive economy, South Africa requires a higher education system that produces a strong knowledge workforce of researchers, scientists, engineers, designers, and so on.

Clearly, the development of the South African public higher education system is pivotal to meeting the goals of NDP 2030. One of the mechanisms used by the government to steer the higher education system is the allocation of funding, which is an important source of income for public higher education institutions in South Africa. Figure 1 shows that, even though government funding (which includes National Student Financial Aid Scheme (NSFAS) funding) comprises a significant proportion of university funding, such funding decreased from 49% of total university income in 2000 to 41% of total university income in 2010. The two other main sources of funding for universities are student fees, which include all tuition and residence fees paid by students, and private

Figure 1: Sources of funding for public higher education institutions, 2000–2010



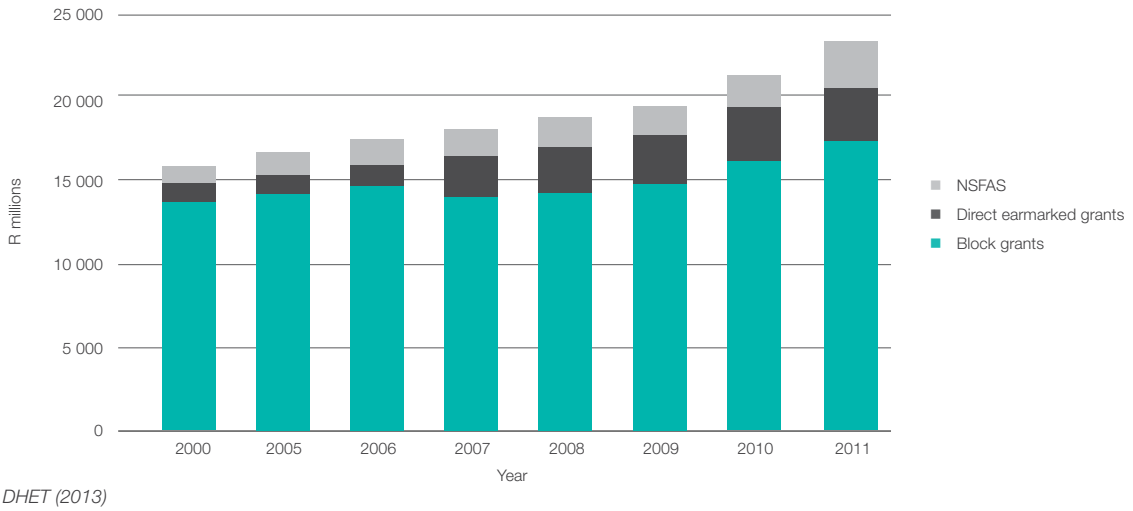
Source: DHET (2013)

income, which includes research contracts, donations, investments, etc. It is clear from Figure 1 that the decline in government funding over this period has been compensated for largely by an increase in student fees, which rose from 24% of total university income in 2000 to 30% in 2010. The averages shown in Figure 1 mask the variation in the importance of government funding across institutions. In 2010, government funding accounted for just 25% of the total income of the University of the Witwatersrand, but contributed the majority (66%) of the total income of Walter Sisulu University. The University of the Witwatersrand is able to derive 51% of its funding from private income, compared with just 3% for Walter Sisulu University (DHET 2013). These vast institutional differences are a key characteristic of the South African higher education system, which comprises both well-developed and highly ranked universities (mostly historically white universities) and a number of underdeveloped universities (mostly historically black universities).

Government funding of universities is determined within the current funding framework, implemented in 2004/2005, which directly links the awarding of government higher education grants to national and institutional planning. Government funding of universities has two main elements: (1) block grants, which are used for instruction, research and other operational expenses at the discretion of each university, and (2) earmarked grants, which are designated for particular spending categories such as infrastructure. One of the key earmarked grants is for the provision of financial assistance to students who would otherwise not be able to afford a university education. Such financial aid is managed and directed through the state's NSFAS. Since the establishment of the NSFAS in 1999, funding grew from R441 million to R8.5 billion in 2013, making the programme one of the most significant interventions affecting access to higher education for the poor and disadvantaged. Figure 2 illustrates the growth in NSFAS funding relative to the growth in other grants to universities. Over the period 2004 to 2011, total government funding of universities grew at an average rate of 6% per year in real terms, while NSFAS funding grew at an average of 19% per year. This rapid growth in NSFAS funding, especially in relation to the slower growth in overall university funding, highlights the increasing importance of the scheme in attempting to improve on, and support, the role played by higher education in ultimately reducing inequality and promoting growth through the targeting of indigent students.

Education White Paper 3 (DoE 1997) and the National Plan for Higher Education (NPHE) (MoE 2001) set out specific transformational goals for the higher education system: namely to improve access, increase the participation of disadvantaged individuals and women, increase enrolments and

Figure 2: Government allocations to public universities, 2004–2011



Source: DHET (2013)

Notes: Block grants can be spent at the discretion of each university. Direct earmarked grants are designated for spending on specified categories by universities. 'NSFAS' refers to funds transferred to the NSFAS for spending on financial aid. All amounts are in constant 2012 rand.

graduates, improve the quality of teaching and research, and increase research outputs. The DHET (2013) highlights a set of eight key goals based on the Centre for Higher Education Transformation's (CHET) reports in order to evaluate the performance of the higher education sector against the performance goals and targets set out in Education White Paper 3 and the NPHE. These goals are as follows:

1. Opportunities for entry into the system must improve;
2. The participation of disadvantaged students in the system must increase;
3. The participation of female students in the system must increase;
4. Science, engineering and technology, and business/management enrolments in the system, must grow;
5. Masters and doctoral enrolments in the system must grow;
6. The academic staff in the system must be well qualified;
7. The output of graduates of the system must improve; and
8. The high-level knowledge outputs of the system must improve.

This paper sheds some light on how the NSFAS has contributed to the achievement of Goals 1, 2 and 3 over the years 2000 to 2012 and, within the broader context of the Labour Market Intelligence Partnership (LMIP), provides some evidence for how well the programme is working to affect skills acquisition. It provides an overview of the demographics and performance of NSFAS recipients at public universities over the period.

The remainder of the paper is structured as follows: Section 2 provides background information on the NSFAS, Section 3 presents the basic statistical analysis of NSFAS recipients and, finally, Section 4 concludes the discussion.

2. BACKGROUND

In 1991, the Tertiary Education Fund of South Africa (TEFSA) was established within the Independent Development Trust to grant loans to black students, with the majority of the funds provided by the European Union (EU). TEFSA became a stand-alone entity in 1993 and continued to be the primary provider of loans to historically disadvantaged individuals after the end of apartheid. Recognising the growing problem of student debt and the inadequate access to higher education faced by disadvantaged students, the government established the NSFAS in 1996. The goals were to improve access to higher education, thereby redressing some of the past inequalities, as well as to produce the skilled labour required for economic growth. Initially, the government contracted with TEFSA to administer the NSFAS scheme. In 1999, the NSFAS was formally established by statute and the TEFSA was fully incorporated within the NSFAS. The NSFAS was further expanded in 2007 by way of legislation enabling the programme to grant financial aid to students at technical vocational education and training (TVET) colleges.

The Department of Higher Education and Training (DHET) is the primary funder of the NSFAS, but the NSFAS also has international and other South African donors. The DHET provides the NSFAS with general funding for all fields of study, as well as specific funding such as the Funza Lushaka bursaries for teaching, and funding for accounting students in partnership with the South African Institute of Charted Accountants (SAICA). The NSFAS also contracts with other public and private entities to administer their financial-aid schemes. The nature of these agreements vary (DHET 2009). For example, the NSFAS merely administers the bursary scheme of the Department of Agriculture, Fisheries and Forestry (DAFF), while the DAFF actually selects the recipients and requires students to work in the South African agricultural sector after graduation. This is in contrast to the situation with the Department of Labour (DoL) where the NSFAS selects students based on scarce skills areas to be funded from the National Skills Fund, as well as students with disabilities. The NSFAS also administers loans and bursaries for the Department of Social Development, the Eastern Cape provincial government, various higher education institutions, and Nedbank. These other schemes have their own rules and requirements, but the funds are disbursed through the NSFAS. For the purposes of this study, we include all funds flowing through the NSFAS in the analysis, irrespective of the donor.

The amount of the NSFAS loan for which a student is eligible depends on their financial need, up to a maximum loan size of R57 000 (as of 2012). Moreover, up to 40% of a loan may be converted to a bursary if a student performs well. The exact percentage converted may be calculated using the following formula:

$$\text{Percentage converted to bursary} = \frac{\text{Number of subjects passed}}{\text{Number of subjects taken}} \times 40\%$$

Thus, 40% of the loan is converted to a bursary if a student passes all their courses, 20% if they pass half their courses, and so on. In addition, the Final-year Programme was introduced in 2011, which allows for 100% of the loan in a student's final year to be converted to a bursary if the student graduates in that year. Students repay their loans

only when they are employed and earning at least R30 000 a year. Repayments start at a rate of 3% of the salary, increasing to a maximum of 8% as the individual's salary increases.

The size of the average total award, loan amount and bursary amount over the period 2000 to 2012 is shown in Figure 3. The average total award grew at an average annual rate of 7% over this period, while the size of the average loan and bursary grew at average annual rates of 4% and 11%, respectively. The introduction of the DAFF's bursary scheme in 2004, the Department of Basic Education's (DBE) Funza Lushaka bursary scheme in 2007, the DHET's bursary scheme for disabled students in 2008, and the Final-year Programme in 2011, among others, have contributed to the sharp increase in the availability of bursaries within the NSFAS over the last few years.

The financial-aid offices of the higher education institutions (HEIs) have historically handled the disbursement of loans and bursaries and have reported on students' progress to the NSFAS. However, the NSFAS is now moving to a centralised system, beginning with a pilot programme of online applications in 2015 involving 11 HEIs. Prior to the development of a centralised system, the NSFAS allocated funds to each HEI based on the number of disadvantaged students at the institution and the cost of studying at that institution. Each HEI is allocated a percentage of the total sum available, calculated as:

% allocated = DSCI/sum of all DSCI × 100

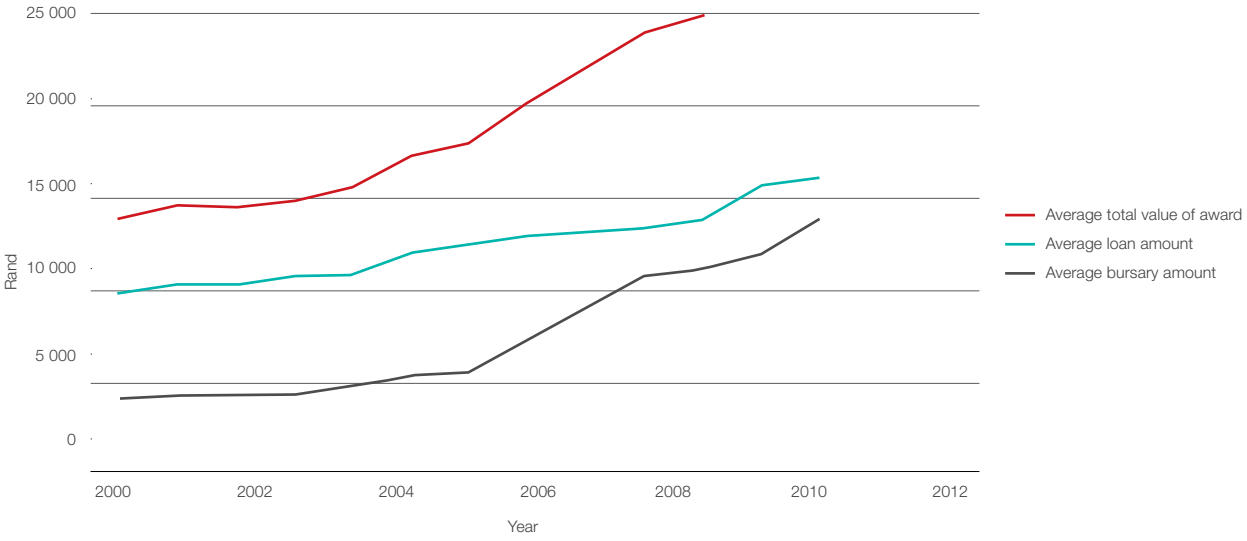
where the disadvantaged students' cost index (DSCI) is calculated as the disadvantaged students' index (DSI) multiplied by the average fixed cost of study (FCS) at an institution.

DSI = (number of African students × 3) +
(number of Coloured students × 2) +
(number of Indian students × 1)
FCS = Tuition + Compulsory levies +
Residence fees + Meals

Each HEI then allocates its funds to financially needy students. Eligibility for NSFAS funding is determined by a means test. Prior to 2003, each institution used its own version of the means test, but, in 2003, this was standardised to a single means test applicable to all HEIs. The standardised means test determines a student's financial need by using the expected family contribution (EFC), where:

EFC = 0.33 × disposable income (if one university student is supported by the family), or
EFC = 0.20 × disposable income (if more than one university student is supported by the family)

Figure 3: Average awards (total, loan and bursary) over time



Notes: Funds from all donors are included in the calculations. All amounts are in constant 2012 rand. A total award is comprised of a loan and a bursary component.

The size of the EFC can then be used to rank students in order of financial need. The means test should be used to determine both eligibility as well as the award size, but many institutions use the means test solely to designate eligibility and then equitably allocate awards to all eligible students (DHET 2009). This system, in which the allocations formula is the key determinant of a student's award size, has created wide disparities in the NSFAS award size across institutions. Institutions either had enough funds for the relatively few financially needy students or granted smaller awards to a larger number of students, a practice known as 'top-slicing'. Institutions with large numbers of poor students, typically historically black institutions (HBIs), thus tend to have smaller average NSFAS award sizes.

These significant institutional differences are clearly seen in Table 1, which shows how the total award amount (comprising both loans and bursaries) varies across institutions. Institutions are grouped into three categories: (1) historically black institutions (HBIs), (2) historically white institutions (HWIs), and (3) merged institutions, which represent the merger of HBIs and HWIs.[1] While Column (1) indicates that the total amount allocated to HBIs, HWIs and merged institutions is roughly equal at around R2 billion each, it is clear from Column (2) that there is great inequality in the size of the average award across institution types. The average NSFAS recipient at an HWI received an award roughly 30% greater than the average recipient at an HBI in 2012. An ANOVA test of the hypothesis $\mu_{HBI} = \mu_{HWI} = \mu_{Merged}$ where μ_X represents the mean award size at institution type X confirms that the average award size across HBIs, HWIs and merged institutions was not equal in 2012: $F(2, 190\,942) = 19\,244.69$, $p = 0.00$. Moreover, this difference persists across the distribution: the awards at the 10th and 90th percentiles were also greater at HWIs than HBIs.

There is also a great deal of variation across individual institutions, as can be seen in Column (7) of Table 1, which gives the ratio of the average award size at each institution to the average award at the University of Cape Town (UCT). The average award received by a student at Mangosuthu University of Technology (MUT) was 58% of the value of the average UCT award, while the average received at the University of Fort Hare (UFH) was roughly the same as that received by a student at UCT. Column (8) gives the t-statistic of a test that the mean award at each institution is equal to the mean award at UCT for 2012. The results confirm the heterogeneity across institutions. The average awards at the University of the Free State (UFS), the University of Johannesburg (UJ) and the UFH are not significantly different from the award at UCT, whereas the average student at Rhodes University (RU), the University of Pretoria (UP), Stellenbosch University (SU), the University of the Witwatersrand (Wits) and the University of KwaZulu-Natal (UKZN) receives a significantly greater average award than the average student at UCT. The remaining institutions, mostly HBIs and merged institutions, have significantly smaller average awards than UCT.

While these differences in award size are related to differences in the full cost of study across institutions, Column (9) of Table 1 indicates that this is not the sole explanation. Column (9) shows the proportion of the full cost of study at each institution that was covered by the average NSFAS award in 2008. While it is evident that NSFAS funding is, on average, insufficient to cover the full cost of study (FCS) at any institution, it covered, on average, 51% of the FCS at HWIs, but only 36% of the FCS at HBIs in 2008. This coverage varies even more at the institutional level: the average NSFAS award covered a high of 77% of the cost of study at RU but a low of just 26% at MUT. While we do not have more recent data on the FCS, it is probable that these differences documented in 2008 were still present in later years. These results suggest that there is potential to improve the equality of access to NSFAS awards across institutions.

Even though the mean award at HBIs was much smaller than that at HWIs in 2012, Column (6) of Table 1 shows that HBIs experienced a slightly higher average annual growth rate in the mean award size – 8.8% compared with the 8.4% for HWIs – over the period 2000 to 2012. However, there have been much more marked changes in the

1 Unless otherwise noted, Unisa is always included in the merged institutions category.

Table 1: NSFAS awards by institution

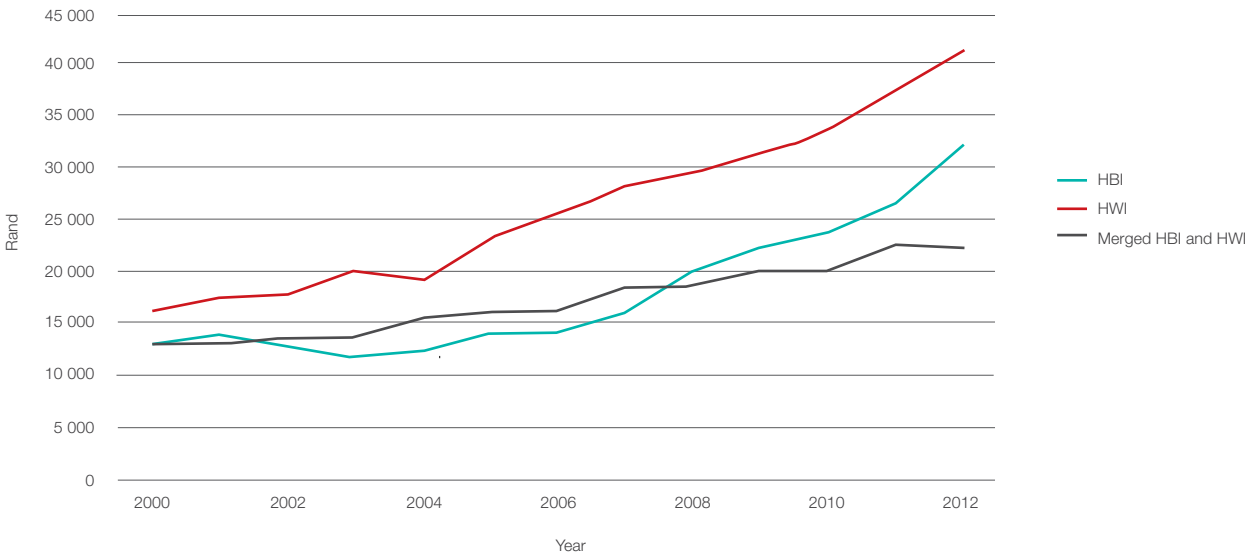
(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Total	Avg annual	Ratio of avg		μ – μUCT = 0			Ratio of avg		
	R mill.	Average	Median	10th pctile	90th pctile	Growth rate	To UCT avg	t-stat	To FCS
Institution	2012	2012	2012	2012	2012	2000–2012	2012	2012	2008
HBI	**2 002**	**32 183**	**28 597**	**12 290**	**55 257**	**8.82**	**0.77**		**0.36**
MUT	169	24 924	22 580	9 621	43 470	6.64	0.58	–48.34*	0.26
UFH	270	42 875	41 694	22 478	66 000	11.57	1.01	0.61	0.33
UL	368	32 800	25 000	18 645	53 806	5.83	0.77	–30.67*	0.53
UV	256	39 694	37 004	16 970	66 000	16.08	0.93	–7.10*	
UWC	191	29 676	28 620	11 747	50 000	6.70	0.70	–36.43*	0.32
UZ	310	28 748	24 425	10 000	49 622	4.32	0.67	–39.97*	0.43
WSU	437	29 854	27 650	12 100	49 110	10.61	0.70	–40.85*	0.30
HWI	**1 933**	**41 325**	**40 638**	**19 987**	**63 690**	**8.38**	**1.03**		**0.51**
CUT	139	31 848	30 061	15 942	51 757	8.17	0.75	–28.06*	0.45
NMMU	197	35 115	33 529	15 190	58 700	7.29	0.82	–19.51*	0.43
RU	60	59 441	63 860	35 690	73 821	8.21	1.39	24.48*	0.77
UCT	148	42 633	46 000	19 440	71 762	4.81	1.00		0.38
UFS	172	42 914	40 657	28 514	61 500	6.82	1.01	0.73	0.59
UJ	445	42 714	44 445	21 585	60 000	10.58	1.00	0.24	0.40
UP	242	47 851	50 558	21 506	66 000	10.52	1.12	12.31*	0.48
US	104	54 910	61 197	27 267	73 964	7.84	1.29	21.75*	0.63
VUT	207	31 072	30 685	16 850	44 071	10.78	0.73	–37.31*	0.42
Wits	220	51 051	57 000	28 012	66 000	8.77	1.20	20.33*	0.56
Merged	**1 937**	**22 430**	**16 783**	**4 860**	**46 052**	**6.33**	**0.67**		**0.41**
CPUT	258	26 680	24 205	9 740	50 199	7.18	0.63	–46.91*	0.37
DUT	260	29 290	28 500	12 320	44 630	8.25	0.69	–41.18*	0.30
NWU	240	35 800	36 838	17 900	49 800	7.52	0.84	–19.85*	0.48
TUT	460	26 932	25 655	13 547	42 075	6.76	0.63	–62.30*	0.50
UKZN	429	44 278	44 452	25 930	65 000	7.43	1.04	5.14*	0.40
Unisa	291	8 487	7 910	3 500	12 840	0.88	0.20	–240.59*	

An ANOVA test of the hypothesis $\mu_{HBI} = \mu_{HWI} = \mu_{Merged}$ where μ_X represents the mean award size at institution type X generated

F (2, 190 942) = 19 244.69*, $p = 0.00$.*

*Notes: Funds from all donors are included in the calculations. 'HBI' denotes historically black institutions, 'HWI' denotes historically white institutions, and 'Merged' denotes institutions that resulted from the merger of HBIs and HWIs. μ refers to the average award size and * denotes significance at the 1% level. Data on the ratio of average award sizes to full cost of study (FCS) in 2008 is from DHET (2009), but was unavailable for UV and Unisa.*

Figure 4: Average award by institution, 2000–2012



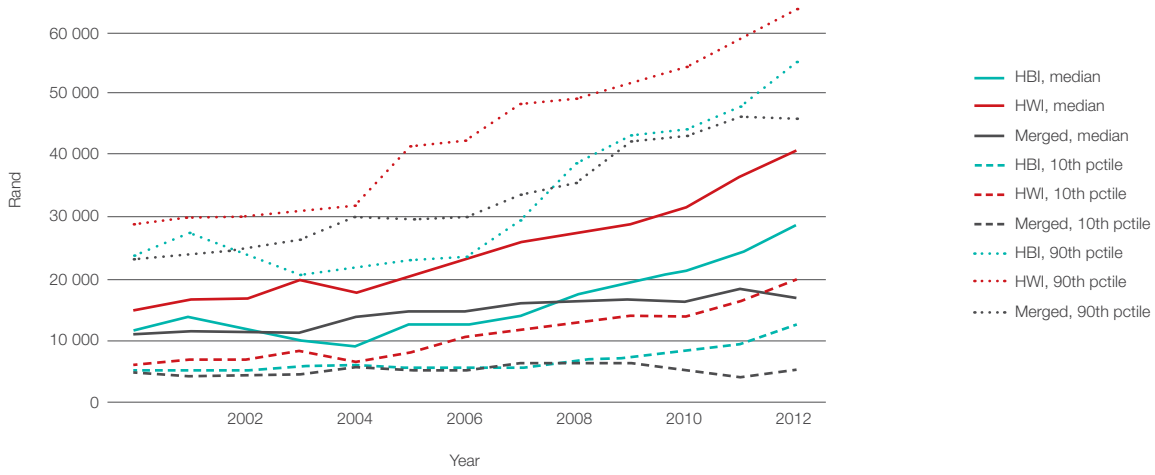
Notes: Funds from all donors are included in the calculations. 'HBI' denotes historically black institutions, 'HWI' denotes historically white institutions, and 'Merged HBI and HWI' denotes institutions that resulted from the merger of HBIs and HWIs. All values are in constant 2012 rand.

mean award size across institutions. The University of Venda (UV) experienced the greatest average annual growth in its mean award size (16% per year), while the mean award at Unisa barely grew over the period at an average of under 1% per year. Figure 4 examines more closely how the mean award has evolved across different institution types over the period 2000 to 2012. While the mean award at HBIs was consistently smaller than that of HWIs, the mean award at HBIs grew at a rapid rate of 13% per year on average over the latter half of the period 2006 to 2012. This was significantly higher than the average growth of 9% at HWIs and 5% at merged institutions over the same years. The gap between the mean award size at HBIs and HWIs has been narrowing, while the gap between the mean award size at merged institutions and HWIs has been widening.

Focusing purely on the averages could conceal changes happening elsewhere in the distribution, and so, in Figure 5, we compare the award sizes at the 10th, 50th and 90th percentiles. It is evident that the award sizes at all points in the distribution have been consistently greater at HWIs than at HBIs and merged institutions over this period, and there has been particularly significant growth in the 10th, 50th and 90th percentile award sizes over the second half of the period. Over the years 2006 to 2012, the 10th and 90th percentile award sizes grew at an average of 8% per year at HBIs, while the median award size grew at a slightly higher rate of 9%. Thus, there has been a similar rapid growth in award sizes at all points in the distribution for HBIs. By contrast, over the period 2006 to 2012, HWIs experienced the most significant growth in the 10th percentile award size, which grew at an average of 12% per year compared with the median and 90th percentile, which grew at rates of 9% and 7%, respectively. Thus, the growth in award sizes at HWIs has been concentrated at the lower end of the distribution. From 2006 to 2012, the 10th percentile award sizes at merged institutions was relatively unchanging, growing at an average of 1% per year. However, merged institutions experienced significant growth in the median and 90th percentile award sizes of an average of 4% and 6% per year, respectively.

Ultimately, then, the above shows that, while award sizes were consistently smaller at HBIs than at HWIs over the period 2000 to 2012, they increased more rapidly at HBIs than at HWIs over the latter half of the period, thus serving to narrow the gap between the two in recent years. There were substantial differences in the average award sizes across individual institutions that cannot be explained solely by differences in the FCS but are likely also attributable to the formula used by the NSFAS to allocate funds to institutions. Taking into account the disparities in NSFAS awards across institution types, we now examine how the demographics and performance of NSFAS beneficiaries varies at different institutions and for different award sizes.

Figure 5: Median, 10th percentile and 90th percentile awards by institution, 2000–2012



Notes: Funds from all donors are included in the calculations. 'HBI' denotes historically black institutions, 'HWI' denotes historically white institutions, and 'Merged' denotes institutions that resulted from the merger of HBIs and HWIs. All values are in constant 2012 rand.

3. EMPIRICAL ANALYSIS

In Section 1, we discussed the key performance goals and targets for the higher education sector. In this section, we look closely at how the NSFAS has contributed to the achievement of the first three goals:

1. Opportunities for entry into the system must improve;
2. The participation of disadvantaged students in the system must increase; and
3. The participation of female students in the system must increase.

We use the available data to examine the demographic characteristics and performance of NSFAS recipients over the period 2000 to 2012. Specifically, we document the racial and gender profile of NSFAS recipients over time, and how that profile compares with that of the general student population at universities in order to determine if the NSFAS has enabled greater participation by female and disadvantaged students. We also investigate how the racial and gender composition of NSFAS recipients varies by size of the award. Recall that the size of the award should be calculated as:

NSFAS award = costs – bursaries – EFC

where the costs reflect the total costs of studying at an institution (fees, cost of textbooks, cost of accommodation, etc.), and the EFC is a measure of financial neediness. However, as discussed in Section 2, some institutions practise 'top-slicing' whereby they allocate awards of roughly equal sizes to all eligible students so that there are differences in award sizes across institutions that are not fully explained by differences in the cost of study. Thus, it is important to analyse the characteristics of NSFAS recipients by award size.

The NSFAS has always had a performance incentive built into loan awards whereby a proportion of a loan may be converted to a bursary if a student performs well. An amount of 40% of the loan is converted to a bursary if a student passes all his or her courses, 20% if he or she passes all his or her courses, and so on. Accordingly, we also document the 'subject pass rate' – defined as the percentage of subjects passed of those taken in any given year – of NSFAS recipients.

Data

This paper focuses on the time period 2000 to 2012, beginning in the year after the NSFAS was established by the National Student Financial Aid Scheme Act of 1999. We use a non-public data set provided by the NSFAS that contains some demographic information on recipients, as well as the number of subjects they were enrolled in and the number of subjects passed. At present, we have not linked this data set to HEMIS data but will do so in future research. This paper represents an initial foray into the evaluation of the effect of the NSFAS on the demographics of HEIs and the academic achievement of recipients.

Since TVET colleges only became eligible for NSFAS financial aid in 2007 and, in addition, are subject to different rules for NSFAS funding, we exclude them from the analysis and focus only on universities (traditional, technological and comprehensive). Over the time period under consideration, many HEIs merged and so some older institutions no longer exist. We have consolidated older data on these now defunct institutions into the new institutions they formed. We have chosen to include all loans and bursaries from various funding sources, and not just those from the DHET, in the analysis. Even

though the various funders have different rules and requirements in respect of their financial aid, we are interested in the recipients of all funds flowing through the NSFAS to universities.

The only measure of performance available in our data set is the 'subject pass rate'. For each student in each year, we observe the number of subjects passed and the number of subjects for which the student was enrolled, thereby allowing us to calculate the percentage of subjects taken and passed.[2]

Demographic characteristics of recipients

Three of the key goals of the higher education system are to improve (1) access to the higher education system, (2) participation by disadvantaged students, and (3) participation by female students. Accordingly, in this section, we examine the demographic characteristics of NSFAS recipients in order to shed some light on how the programme has assisted in meeting these goals. Figure 6 documents the racial composition of NSFAS recipients over time. From the figure, it is clear that the number of students covered by the NSFAS has increased steadily over time, almost tripling from about 70 000 students in 2000 to 191 000 – which accounts for 20% of the total university enrolment – in 2012. This suggests that the NSFAS has been crucial in meeting the first performance target of improving opportunities for entry into the higher education system. Moreover, Figure 6 shows that the overwhelming majority of NSFAS recipients have consistently come from historically disadvantaged backgrounds. Over the period 2000 to 2012, the racial composition of NSFAS students remained fairly constant, comprising, on average, 91% African, 4% Coloured, 1.5% Indian and 3% white students. These numbers can be translated into a ratio: in 2012, of every 43 students supported by the NSFAS, 1 student was from a historically advantaged background, while the remaining 42 students were from a historically disadvantaged background.

While it is clear that the NSFAS has successfully targeted historically disadvantaged individuals, we also examine how the demographics of NSFAS recipients compares with the overall demographics of university students so as to understand whether the NSFAS has assisted in increasing the representation of disadvantaged individuals in the higher education system. Figure 7 shows the representation of black students (where 'black' refers to all African, Coloured and Indian students) among NSFAS recipients relative to the general student population at institutions. It illustrates the ratio of the proportion of NSFAS recipients who were black to the proportion of the student population who were black at any given institution. A value of one indicates that the proportion of black NSFAS recipients was identical to the proportion of the general student body comprised of black students at an institution in any given year. In contrast, a value greater than one indicates that blacks were over-represented as NSFAS recipients relative to the student body at an institution, and a value of less than one indicates that black students were under-represented as NSFAS recipients. The data indicates that the NSFAS has been successful in increasing the representation of historically disadvantaged individuals in the higher education system, especially at HWIs. In 2012, the overall student population at HWIs was 70% black, while the proportion of NSFAS recipients at HWIs who were black was 91%. The ratio has fallen slightly from a value of 1.6 in 2000 to 1.3 in 2012, but this is largely due to an increase in the percentage of black students in the overall student population rather than significant changes in the composition of the NSFAS student population at HWIs. The analysis in Table 1 showed that NSFAS awards covered, on average, a larger proportion of the FCS at HWIs than at other institutions. This suggests that the NSFAS has contributed to enabling historically disadvantaged students to attend HWIs, which tend to have higher fees and include institutions that are frequently ranked as the top four HEIs in South Africa.[3] Black students were also over-represented as NSFAS recipients at merged institutions where, in 2012, 98% of NSFAS students

2 In future research, we will be able to examine graduation and dropout rates by linking NSFAS recipients to HEMIS data on their academic progression.

3 UCT, UP, SU and Wits. Based on Times Higher Education–QS World University Rankings.

Figure 6: NSFAS recipients by race, 2000–2012

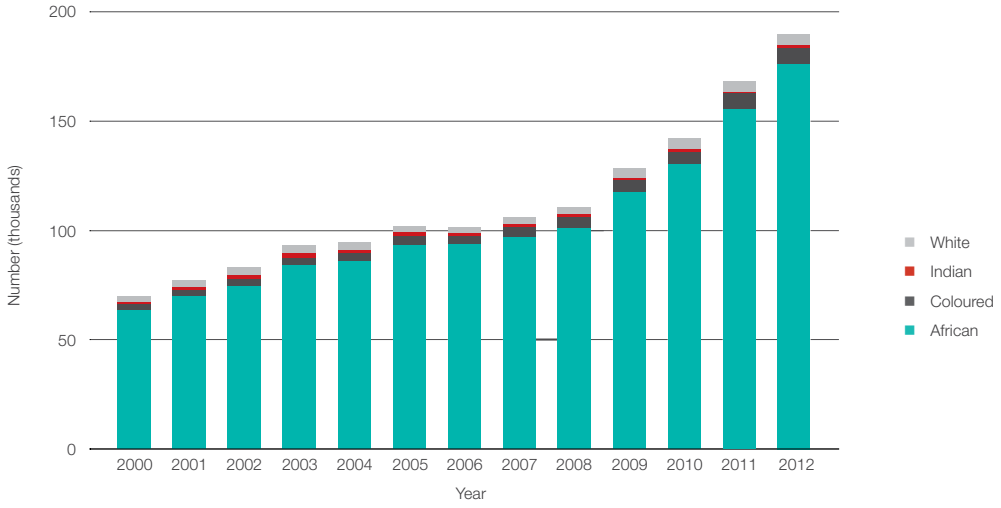
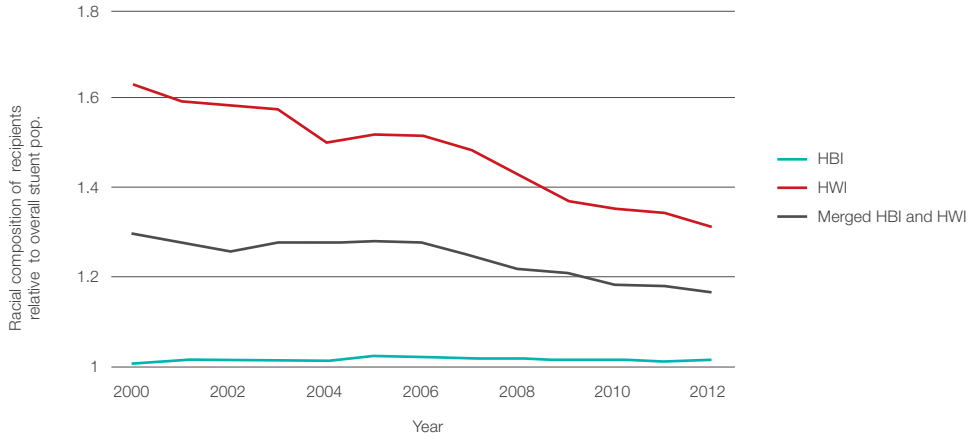


Figure 7: Racial composition of NSFAS recipients relative to that of general student population, 2000–2012



Notes: This figure shows the ratio of the percentage of NSFAS recipients who were black (African, Coloured and Indian) to the percentage of all students who were black, so that a value of 1 shows that the racial composition of NSFAS recipients was identical to the racial composition of the general student body at an institution in any given year. 'HBI' denotes historically black institutions, 'HWI' denotes historically white institutions, and 'Merged HBI and HWI' denotes institutions that resulted from the merger of HBIs and HWIs.

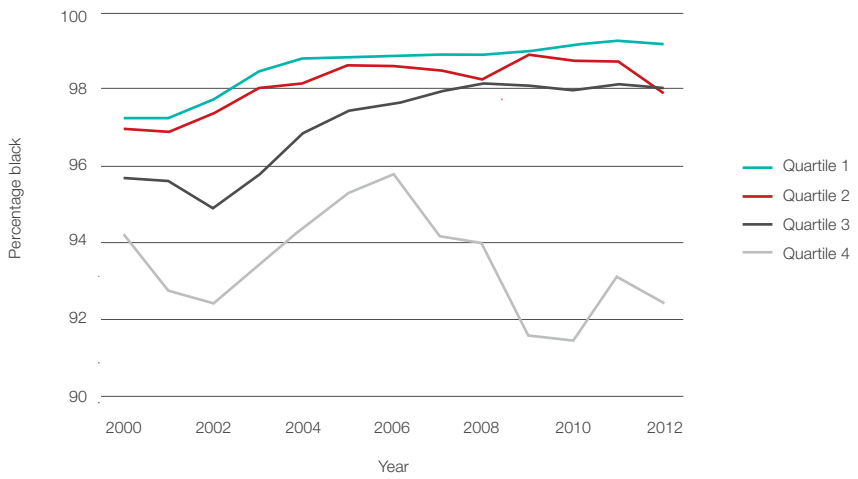
were black compared with 84% of the total student population at these institutions. At HBIs, the racial composition of NSFAS students closely matched the composition of the overall student body. In 2012, 99.7% of all students at HBIs were black and 98.7% of NSFAS recipients at HBIs were black. These graphs are evidence that the NSFAS has assisted in increasing the representation of black students at HWIs and merged institutions.

Figure 6 documented that 97% of NSFAS recipients were black, and we now examine whether the racial composition varies by award size in Figure 8, which shows the percentage of students in each award quartile who were black. It is clear that, across all award quartiles, the overwhelming majority – over 90% – of recipients were black. However, the proportion of black recipients decreased slightly as the award size increased. On average, over the period 2000 to 2012, 99% of those receiving awards in the lowest size quartile were black, compared with 98% in quartile 2, 97% in quartile 3 and 93% in the highest quartile size. Moreover, in the lower quartiles 1, 2 and 3, the proportion of black students increased to at least 98% by 2012, but, in the highest award quartile 4, it decreased slightly from 94% in 2000 to 92% in 2012. Thus, the proportion of black recipients in the highest award quartile was lower than the proportion in the lowest award quartile, and this difference has not improved over time. This difference in award sizes by race might be explained by differences in the award size

across HBIs, HWIs and merged institutions documented in Figure 4. In turn, these differences in award sizes are related to differences in the FCS and the allocations formula used to distribute NSFAS funding across institutions (see Section 2 for a more detailed discussion).

The majority of NSFAS recipients were female, and this increased by 7% over the period from 56% in 2000 to 60% in 2012. Figure 9 compares the gender composition of NSFAS recipients with the gender composition of the general student body over time. Specifically, it shows the ratio of the percentage of NSFAS recipients who were female to the percentage of all students who were female, so that a value of 1 shows that the gender composition of NSFAS recipients was identical to the gender composition of the general student body at an institution in any given year. In contrast, a value greater than 1 indicates that females were over-represented as NSFAS recipients relative to the student body at an institution, and a value of less than 1 indicates that female students were under-represented as NSFAS recipients. This figure reveals that, by 2012, women were slightly over-represented among NSFAS beneficiaries relative to their proportion of the general student body at all institution types. However, the representation of women has evolved differently across the three types of institutions. At HWIs, women were slightly under-represented among NSFAS recipients until 2009 and, by 2012, women comprised 57% of

Figure 8: Racial composition of NSFAS recipients by award quartile, 2000–2012



Notes: 'Black' refers to all African, Coloured and Indian students. Funds from all donors are included in the calculations.

Figure 9: Gender composition of NSFAS recipients relative to that of general student population, 2000–2012

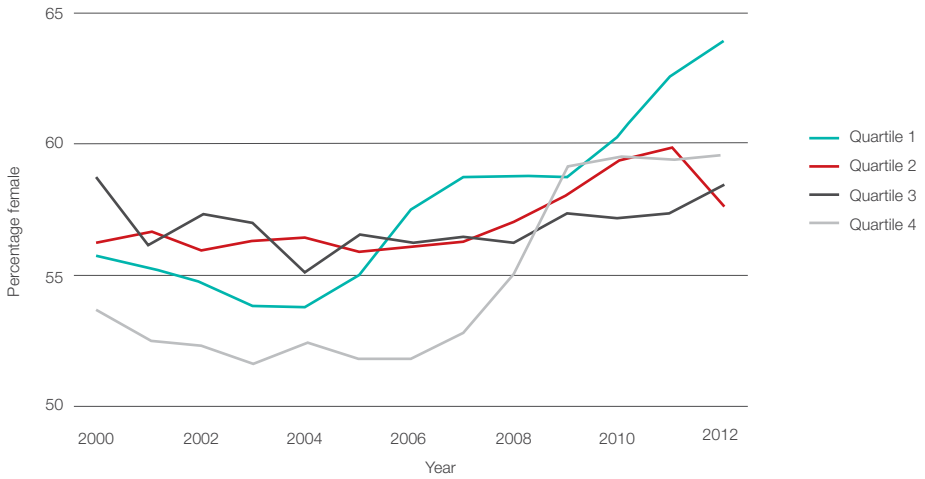
Notes: This figure shows the ratio of the percentage of NSFAS recipients who were female to the percentage of all students who were female, so that a value of 1 shows that the gender composition of NSFAS recipients was identical to the gender composition of the general student body at an institution in any given year. 'HBI' denotes historically black institutions, 'HWI' denotes historically white institutions, and 'Merged HBI and HWI' denotes institutions that resulted from the merger of HBIs and HWIs.

NSFAS beneficiaries at HWIs compared with 54% of all students at HWIs. This contrasts with HBIs where women were always slightly over-represented over the period. By 2012, 60% of NSFAS beneficiaries were women compared with 57% of all students at HBIs. At merged institutions, the representation of women among NSFAS recipients fell slightly over the period, but this was due to increases in the proportion of female students rather than a decrease in the proportion of female NSFAS beneficiaries at these institutions. In 2012, the gender composition of NSFAS recipients was exactly equal to that of the overall student body of merged institutions, which was 61% female.

While the overall proportion of female recipients increased from 56% to 60% over the period, we examine how the representation of women differed across award size quartiles in Figure 10, which shows the percentage of students in each award quartile who were female. It is clear that, across all award size quartiles, women were well represented in the pool of NSFAS recipients. The proportion of women receiving award sizes in the lowest and highest quartiles grew significantly over the period. The proportion of students receiving awards in the fourth quartile who were women, which reflects larger award sizes, grew by 11% over the period to reach 60% by 2012. In 2012, women comprised 64% of those receiving awards in the first quartile, which reflects lower award sizes, growing by 15% since 2000. In contrast, the proportion of students receiving award sizes in the second and third quartiles who were women remained relatively constant over the period and was 58% in 2012. Thus, the increase in the representation of women among NSFAS beneficiaries was largely concentrated in the lowest and highest quartiles of award sizes.

The analysis in this subsection has shown that NSFAS coverage grew substantially from 13% in 2000 of all university students to 20% in 2012, suggesting that the NSFAS played an important role in increasing opportunities for entry into the higher education system. Moreover, the majority of NSFAS students were black, indicating that the programme assisted in increasing the representation of historically disadvantaged individuals. In particular, relative to the racial composition of the overall student body at HWIs and merged institutions, black students were over-represented among NSFAS recipients and were equally represented at HBIs. However, there are some differences in the size of awards. In 2012, the proportion of black recipients in the highest award quartile was lower than the proportion in the lowest award quartile and this has not improved since 2000. The NSFAS also contributed to increasing the participation of women in higher education, as the majority of beneficiaries were female. Relative to the gender composition of the overall student body, women were over-represented as NSFAS beneficiaries at HWIs and HBIs and equally represented at merged institutions. There were also some differences in award size across gender: 64% of beneficiaries receiving awards in the lowest quartile were female, 58% in

Figure 10: Gender composition of NSFAS recipients by award quartile, 2000–2012



Note: Funds from all donors are included in the calculations.

the second and third quartiles, and 60% in the first quartile. These differences in award sizes across race and gender were likely due to differences in the FCS and the allocations formula used to distribute NSFAS funding across institutions (see Section 2 for a more detailed discussion).

Subject pass rates

We have documented that the NSFAS has been successful in targeting black and female students and now go on to document the performance of these students. The NSFAS has always had an incentive mechanism in place whereby a portion of a student's loan is converted to a bursary if he or she performs well. An amount of 40% of the loan is converted to a bursary if a student passes all his or her courses, 20% if he or she passes half his or her courses, and so on. In this section, we analyse the 'subject pass rate' (defined as the percentage of subjects passed of those taken in any given year) of NSFAS recipients. While the subject pass rate is distinct from graduation and dropout rates, it is still an indication of the performance of NSFAS recipients. The subject pass rate indicates the eligibility of a student to progress onto the next level of his or her degree and is thus related to the likelihood of his or her graduating.

Table 2 shows the subject pass rates by institution in 2012. Column (1) shows that, on average, the subject pass rate was extremely high, with NSFAS recipients passing the large majority of their courses. Interestingly, the mean subject pass rate was higher at HBIs, where NSFAS students passed 83% of their subjects compared with 79% at HWIs and 71% at merged institutions. An ANOVA test confirmed that the average subject pass rates were statistically significantly different between HBIs, HWIs and merged institutions: $F(2, 190\,942) = 3\,133.52$, $p = 0.00$. This pattern is seen throughout the distribution of subject pass rates in 2012. The median (Column (2)), 10th (Column (3)) and 25th (Column (4)) percentile subject pass rates were highest at HBIs, followed by HWIs, and lowest at merged institutions. The 75th percentile of the subject pass rate, shown in Column (5), was almost universally 100%, except at Unisa, where it was 88%. This significantly lower subject pass rate at Unisa compared with the other universities is also to be observed at other points in the distribution. Since Unisa is the only distance learning institution in this sample, it is not directly comparable with the other universities.

The average subject pass rate of all students is given in Column (8) of Table 2.[4] It is evident that NSFAS students performed better than the average student at HBIs, about the same at HWIs, and worse at merged institutions. However, the relatively poor performance seen at merged institutions is again largely due to Unisa. NSFAS students at the Durban University of Technology (DUT), North-West University (NWU), Tshwane University of Technology (TUT) and UKZN actually achieved higher subject pass rates than the average student at these institutions. Within HWIs, NSFAS students also performed better than the average student at Nelson Mandela Metropolitan University (NMMU), UFS and Vaal University of Technology (VUT). The percentage of students passing all their subjects in 2012, that is, having a subject pass rate of 100%, is given in Column (7). As expected, these figures mirror the patterns seen in the subject pass rate. Half of NSFAS students at HBIs passed all their subjects, compared with 43% at HWIs and 35% at merged institutions. These subject pass rates determine a student's progression through his or her course of study and impact his or her likelihood of, and time to, graduation.

Column (6) of Table 2 gives the average annual change in the mean pass rate at each institution over the period 2000 to 2012. It is evident that the mean pass rate increased by less than 1% per year on average across HWIs, HBIs and merged institutions. At MUT, Central University of Technology (CUT), UP, Cape Peninsula University of Technology (CPUT) and TUT, the mean pass rate actually declined on average per year over the period, although not significantly (up to a 0.6% average annual decline at CPUT). The trends in the average subject pass rate are illustrated in

4 We do not have data on the subject pass rates for non-NSFAS students; hence we are unable to compare the performance of these two groups. Here, we compare NSFAS students with the average student (which includes both NSFAS and non-NSFAS students).

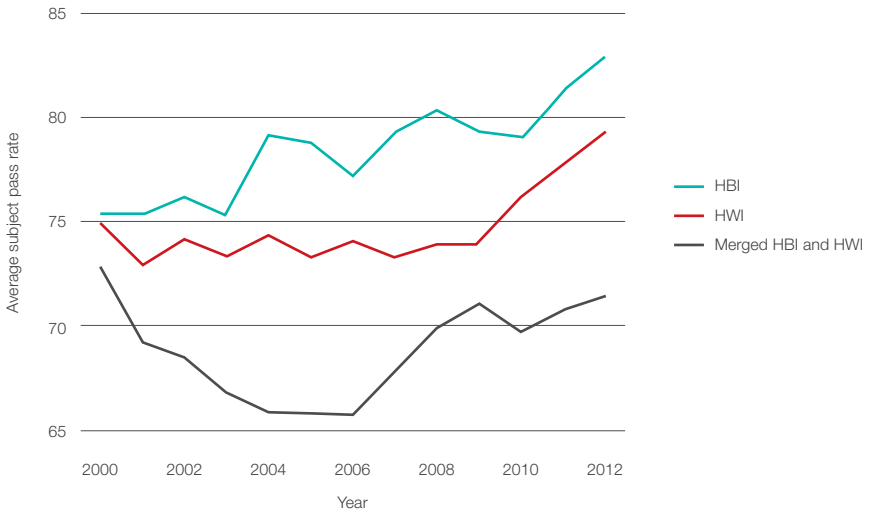
Table 2: Subject pass rate of NSFAS students, by institution

Institution	(1) Average 2012	(2) Median 2012	(3) 10th pctile 2012	(4) 25th pctile 2012	(5) 75th pctile 2012	(6) Avg annual change (%) 2000–2012	(7) % passing all subjects 2012	(8) All students: Average 2012
HBI	**83**	**100**	**50**	**75**	**100**	**0.80**	**50**	**80**
MUT	84	100	50	75	100	–0.04	54	79
UFH	81	92	42	70	100	1.49	47	76
UL	85	100	50	79	100	1.16	55	82
UV	85	100	54	79	100	1.86	52	84
UWC	83	100	40	75	100	0.11	53	80
UZ	83	100	50	75	100	0.20	50	81
WSU	80	90	42	67	100	0.85	46	78
HWI	**79**	**89**	**40**	**67**	**100**	**0.52**	**43**	**80**
CUT	77	86	33	67	100	–0.06	42	77
NMMU	80	91	40	67	100	0.78	44	78
RU	83	100	43	71	100	0.30	57	85
UCT	80	100	33	67	100	0.43	51	86
UFS	79	88	40	67	100	0.09	37	74
UJ	78	88	40	67	100	0.59	38	82
UP	80	92	39	65	100	–0.05	44	80
US	85	100	41	80	100	1.21	62	85
VUT	78	85	44	66	100	1.00	33	73
Wits	80	100	33	71	100	0.87	55	82
Merged	**71**	**80**	**25**	**50**	**100**	**0.59**	**35**	**77**
CPUT	76	86	29	58	100	–0.58	43	77
DUT	83	100	50	71	100	0.52	50	79
NWU	86	100	55	80	100	0.91	52	84
TUT	76	83	33	60	100	–0.11	40	74
UKZN	82	91	44	71	100	0.68	47	79
Unisa	59	67	0	33	88	2.14	19	66

An ANOVA test of the hypothesis μHBI = μHWI = μMerged where μX represents the mean subject pass rate at institution type X generated F (2, 190 942) = 3 133.52, p = 0.00.

Notes: The subject pass rate is calculated as the percentage of subjects passed of those taken. 'HBI' denotes historically black institutions, 'HWI' denotes historically white institutions, and 'Merged' denotes institutions that resulted from the merger of HBIs and HWIs. Columns (1) to (7) refer to NSFAS students only, whereas Column (8) refers to all students.

Figure 11: Average subject pass rate by institution, 2000–2012



Notes: The subject pass rate is calculated as the percentage of subjects passed of those taken. 'HBI' denotes historically black institutions, 'HWI' denotes historically white institutions, and 'Merged HBI and HWI' denotes institutions that resulted from the merger of HBIs and HWIs.

Figure 11. Even though the average annual change in the mean pass rate was not significant, the overall change in the mean pass rate from 2000 to 2012 was relatively large for HWIs and HBIs. From 2000 to 2012, the mean pass rate increased by 10% at HBIs and by 6% at HWIs. At merged institutions, the mean pass rate actually decreased slightly by 2% from 2000 to 2012. Figure 11 shows that the average pass rate was consistently higher at HBIs than at HWIs and merged institutions.

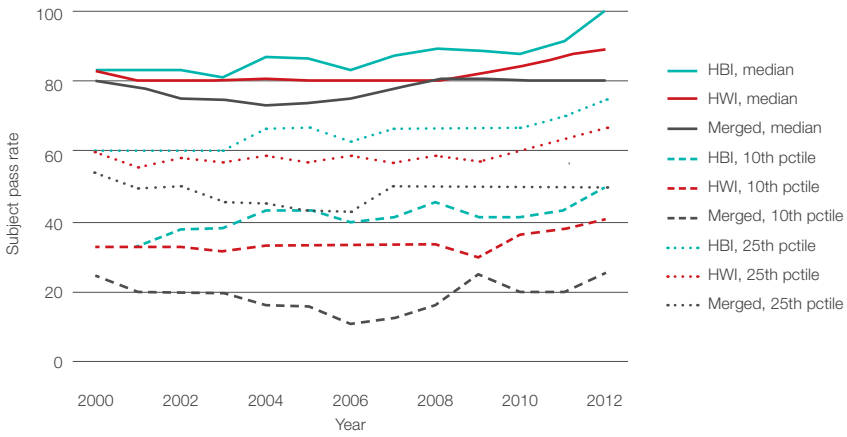
In Figure 12, we examine the changes in the 10th, 25th and 50th percentiles of the subject pass rate over the period. We omit the 75th percentile from the graph, since it is almost always 100%. The trends in these other points of the distribution match the trends seen in the average. At these points, too, the subject pass rate was consistently highest for NSFAS students at HBIs. Moreover, the 10th, 25th and 50th percentiles increased for both HBIs and HWIs over the period, but the average annual increase was roughly twice as high at HBIs. Across all points in the distribution, the subject pass rate increases at a higher rate at HBIs than at HWIs. At merged institutions, the 10th percentile increased slightly at an average annual rate of 2%, while the median remained fairly constant, and the 25th percentile declined slightly at an average annual rate of –0.4%. Thus, at merged institutions, the subject pass rate did not change much over the period, while it increased for HBIs and HWIs.

We now examine whether the average subject pass rate differed by award size. Larger award sizes could enable students to perform better by providing a greater degree of financial assistance to cover their cost of studies. Moreover, since up to 40% of a NSFAS loan may be converted to a bursary, those with larger awards potentially had the most to gain, in absolute terms, by performing well. In Figure 13, we see that the average subject pass rate was consistently highest in the fourth quartile of award size, and lowest in the first quartile. In addition, the growth in the subject pass rate over the period increased in the award quartile. From 2000 to 2012, the average subject pass rate increased by 5% in the second quartile of award sizes, by 7% in the third quartile, and by 9% in the fourth quartile. However, the average subject pass rate actually declined by 7% in the first award size quartile from 2000 to 2012. Thus, the average subject pass rate was higher in the higher award size quartiles and grew at a higher rate in the higher award size quartiles. This evidence suggests that a higher level of NSFAS funding enables, and potentially incentivises, students to perform better.

In Figures 11, 12 and 13, we showed that the subject pass rate differed both by institution type and award size quartile. In Figure 14, we examine whether these two factors interacted with each other to affect student performance. Figure 14 reveals some fascinating patterns. While recipients with relatively low levels of NSFAS funding (those in quartile 1) at merged institutions performed much worse than students with similar levels of funding at HBIs and HWIs, those with high levels of NSFAS funding (those in quartile 4) at merged institutions generally performed better than recipients at HWIs with relatively large awards (those in quartile 4). This suggests that financial constraints might be particularly onerous for those students at merged institutions and that larger award sizes enable those students to perform significantly better. Students at HBIs with relatively low levels of NSFAS funding and students at HWIs with relatively high levels of NSFAS funding generally had very similar subject pass rates.

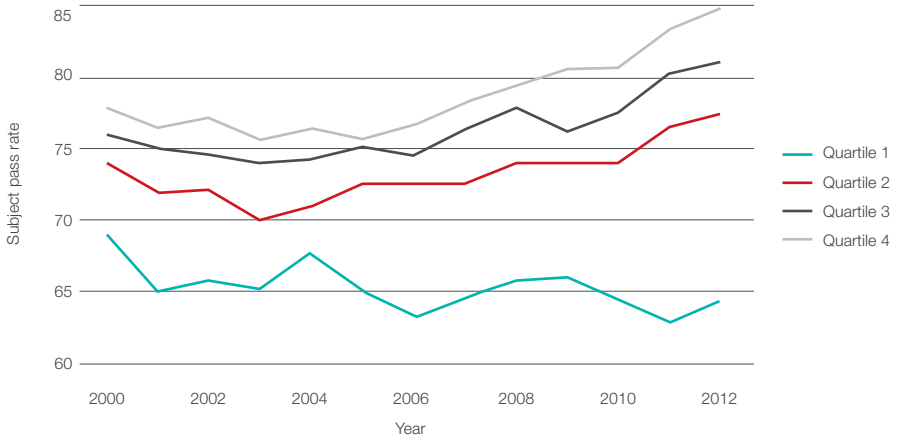
Figure 14 also shows that pass rates changed differentially across different award size quartiles at the various institutions. At HBIs, the subject pass rate increased at similar rates in both the lowest and highest award size quartiles over the period, growing by an average annual rate of 0.8% per year to increase by a total of 10% from 2000 to 2012 in both quartiles. By contrast, at HWIs, the average pass rate increased much more significantly in the highest award size quartile than in the lowest. From 2000 to 2012, the average pass rate increased by 7% in the fourth award quartile but was relatively constant, increasing by only 0.6%, in the first award quartile. At merged institutions, this difference was more extreme: the average pass rate increased by 9% in the fourth award quartile but fell by 6% in the first award quartile from 2000 to 2012. These patterns are clearly illustrated in Figure 15, which shows the difference between the average pass rate in the fourth and first award size quartiles at each

Figure 12: Percentiles of subject pass rate by institution, 2000–2012



Notes: The subject pass rate is calculated as the percentage of subjects passed of those taken. 'HBI' denotes historically black institutions, 'HWI' denotes historically white institutions, and 'Merged' denotes institutions that resulted from the merger of HBIs and HWIs.

Figure 13: Average subject pass rate by award quartile, 2000–2012



Notes: Funds from all donors are included in the calculations. The subject pass rate is calculated as the percentage of subjects passed of those taken.

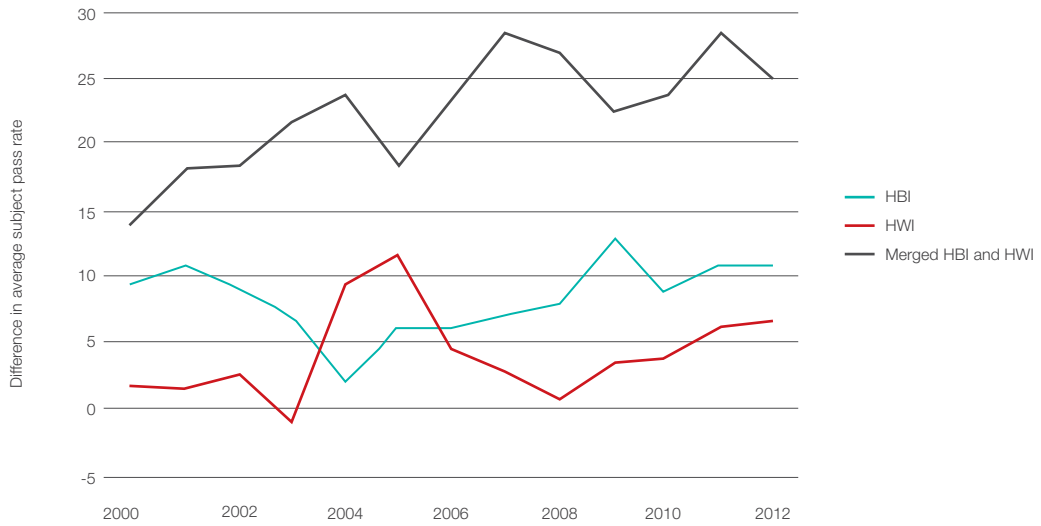
Figure 14: Average subject pass rate by institution and award quartile, 2000–2012

Notes: Funds from all donors are included in the calculations. The subject pass rate is calculated as the percentage of subjects passed of those taken. 'HBI' denotes historically black institutions, 'HWI' denotes historically white institutions, and 'Merged' denotes institutions that resulted from the merger of HBIs and HWIs. Quartile 1 refers to award amounts in the first quartile of the overall distribution, and Quartile 4 refers to award amounts in the fourth quartile.

institution type. It is clear that the gap between subject pass rates increased at merged institutions and HWIs over the period, but did not change significantly at HBIs. Moreover, merged institutions had the largest difference in the average subject pass rate between award size quartiles – the average subject pass rate was 25 percentage points higher in the fourth quartile than in the first in 2012. The gap between subject pass rates in the award size quartiles was generally higher at HBIs than at HWIs. In 2012, the average subject pass rate was 7 percentage points greater in the highest award size quartile than in the lowest at HWIs, compared with 11 percentage points at HBIs. These results indicate that there was a correlation between student performance and award size that varied by institution type. In general, larger award sizes were associated with the largest increase in the subject pass rate at merged institutions, followed by HBIs, and the smallest increase was seen at HWIs. This suggests that the effect of NSFAS funding on student performance is likely to be quantitatively different across HBIs, HWIs and merged institutions.

The evidence in this section suggests that subject pass rates were typically higher at HBIs than at HWIs over the period 2000 to 2012. In addition, the subject pass rate was higher the higher the award size quartile. Moreover, the relationship between award size and student performance appears to vary by the institution designation. Typically, over the period, an increase in the award size appears to be associated with the greatest increase in the subject pass rate at merged institutions, and the smallest increase at HWIs. In Figure 16(a) we plot the relationship between the award size and the subject pass rate across all years, which confirms these patterns. A R10 000 increase in the award size, which is about the 2012 difference in the average award size between HBIs and HWIs, was associated with a 6.7 percentage point increase in the subject pass rate at merged institutions, a 2.5 percentage point increase at HBIs, and a 1.7 percentage point increase at HWIs. The largest increase in the subject pass rate associated with a given increase in award size was seen at merged institutions. Since Unisa is the only distance learning institution in this sample and had significantly lower subject pass rates (see Table 1 for details), in Figure 16(b) we again plot the relationship between award size and student performance, but now exclude Unisa from the calculations. From Figure 16(b) it is apparent that all the low subject pass rates below 70% were due to Unisa, and the linear fit more closely matches the data when Unisa is excluded. When Unisa is excluded from the sample, the relationship between award size and student performance at merged institutions is weaker: a

Figure 15: Difference in average subject pass rate between first and fourth award size quartiles by institution designation, 2000–2012

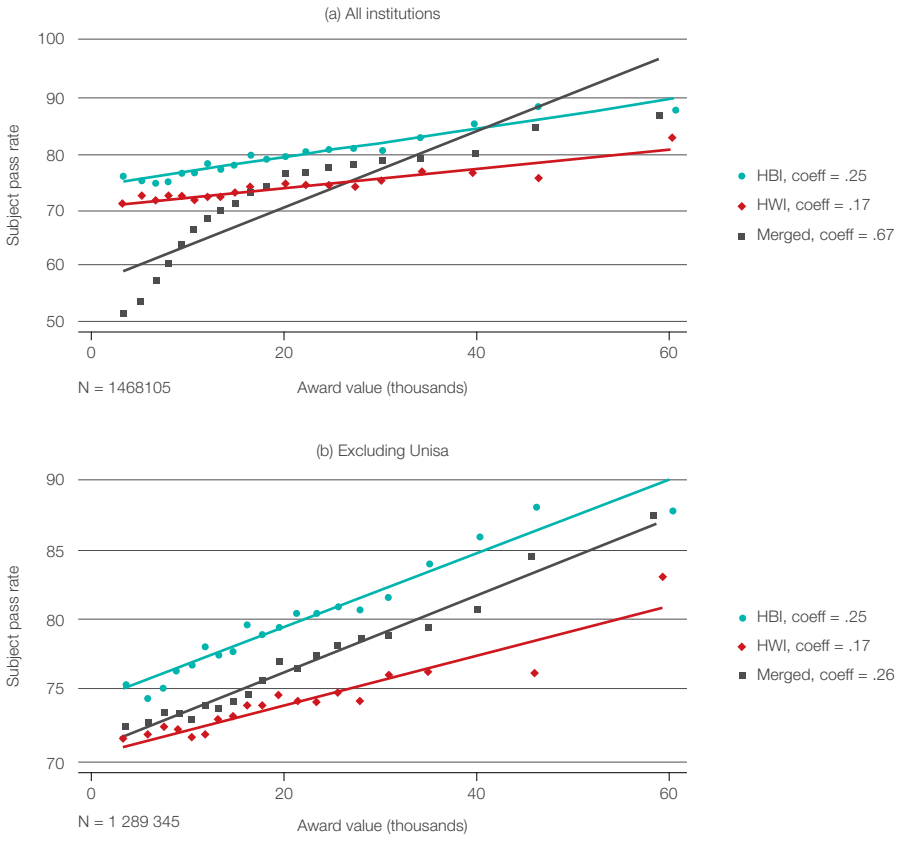


Notes: Funds from all donors are included in the calculations. The subject pass rate is calculated as the percentage of subjects passed of those taken. 'HBI' denotes historically black institutions, 'HWI' denotes historically white institutions, and 'Merged' denotes institutions that resulted from the merger of HBIs and HWIs.

R10 000 increase in the award size is now associated with a 2.6 percentage point increase in the subject pass rate compared with 6.7 percentage points when Unisa is included. The relationship between award size and student performance appears to be of similar magnitude at HBIs and merged institutions (excluding Unisa), and stronger at these two institution types than at HWIs.

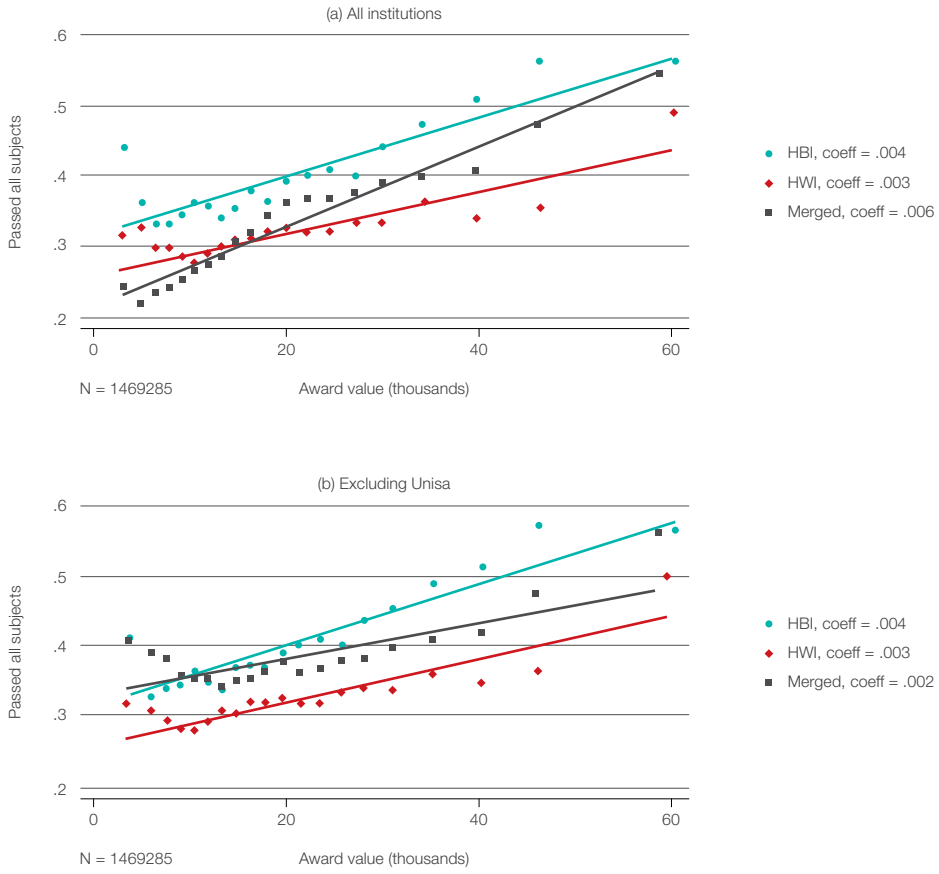
There is a positive relationship between the award size and the subject pass rate, suggesting that higher levels of NSFAS funding might enable students to perform better at universities. Figure 17(a) plots the relationship between award size and the probability of passing all subjects, that is, having a subject pass rate of 100%. This measure of student performance determines a student's progression through his or her degree programme, the likelihood that he or she will graduate, and the time to graduation. This figure matches the patterns seen in Figure 16(a). Students at HBIs are more likely to pass all their subjects, compared with students at HWIs and merged institutions. Moreover, the relationship between award size and the probability of passing all subjects varied by institution designation. A R10 000 increase in the award size was associated with a 4% increase in the probability that a student would pass all his or her subjects at HBIs, a 3% increase at HWIs and a 6% increase at merged institutions. The relationship between award size and student performance was strongest at merged institutions and weakest at HWIs. For the reasons outlined earlier, we again exclude Unisa from the sample in Figure 17(b). When Unisa is excluded, the relationship becomes much weaker such that a R10 000 increase in award size was associated with just a 2% increase in the probability that a student would pass all subjects at merged institutions (excluding Unisa). However, across all institutions, there still appears to be a positive relationship between the level of NSFAS funding a student received and his or her performance at university, as measured by the subject pass rate and the likelihood of his or her passing all courses.

Figure 16: NSFAS award values and subject pass rate by institution designation, 2000–2012



Notes: Funds from all donors are included in the calculations. The subject pass rate is calculated as the percentage of subjects passed of those taken. 'HBI' denotes historically black institutions, 'HWI' denotes historically white institutions, and 'Merged' denotes institutions that resulted from the merger of HBIs and HWIs. Award values are in constant 2012 rand.

Figure 17: NSFAS award values and probability of passing all subjects by institution designation, 2000–2012



Notes: Funds from all donors are included in the calculations. 'HBI' denotes historically black institutions, 'HWI' denotes historically white institutions, and 'Merged' denotes institutions that resulted from the merger of HBIs and HWIs. Award values are in constant 2012 rand.

4. CONCLUSION

These results suggest that the NSFAS has been successful in helping to achieve three of the key goals of the higher education system. The number of NSFAS recipients grew by 260% from 2000 to 2012 to cover 20% of all university students, thereby contributing to increased opportunities for access to higher education. Furthermore, the NSFAS has been successful in targeting women and African, Coloured and Indian students: in 2012, of every 43 students supported by the NSFAS, 1 student was from a historically advantaged background while the remaining 42 students were from a historically disadvantaged background. Relative to the racial composition of the overall student body, black students were over-represented among NSFAS beneficiaries at HWIs and merged institutions, and equally represented at HBIs. However, the proportion of black recipients in the highest award quartile was lower than the proportion in the lowest award quartile and this difference has not improved over time. This difference in award sizes by race is due not only to differences in the FCS, but also to the allocations formula used to distribute NSFAS funding across institutions (see Section 2 for a more detailed discussion). Thus, while the NSFAS has contributed to enabling historically disadvantaged students to attend HWIs, there are some differences in the size of awards received. The move to the centralised system should reduce these differences, as funds will follow the student and not the institution in this new model. The NSFAS has also been successful in improving participation by female students and, by 2012, 60% of supported students were female. Relative to the overall student body, women were slightly over-represented as NSFAS beneficiaries at HWIs and HBIs and equally represented at merged institutions. Over the period 2000 to 2012, there was an increase in the representation of women among NSFAS beneficiaries, which was largely concentrated in the lowest and highest quartiles of award sizes.

The NSFAS has always had an incentive mechanism in place whereby a student can convert up to 40% of their loans to a bursary by passing his or her courses, and there is initial evidence that there is a positive relationship between NSFAS award sizes and student performance, as measured by both the 'subject pass rate' (defined as the percentage of courses passed out of those taken) and the likelihood of passing all subjects (i.e. having a subject pass rate of 100%). From 2000 to 2012, the subject pass rate was higher in higher award quartiles. In addition, the subject pass rate tended to be highest at HBIs and lowest at merged institutions, although the low subject pass rates in merged institutions was largely due to Unisa which, as the only distance learning institution in the sample, is different from the other institutions. Moreover, the relationship between award size and student performance differed by institution designation. The results suggest that the positive relationship between NSFAS award size and student performance was strongest at merged institutions and weakest at HWIs. However, this changes if Unisa is excluded from the sample of merged institutions.

This initial investigation reveals that the NSFAS successfully increased the number of recipients and targeted historically disadvantaged individuals and women over the period 2000 to 2012. Moreover, there appears to be a positive relationship between award size and student performance. While we

emphasise that we have not documented a causal relationship, there is a positive correlation between the level of NSFAS funding a student receives and his or her performance.[5]

This positive relationship is present across all institution designations, although the strength of the relationship does vary by institution type.

5 In future research, we aim to investigate whether this relationship is in fact causal.

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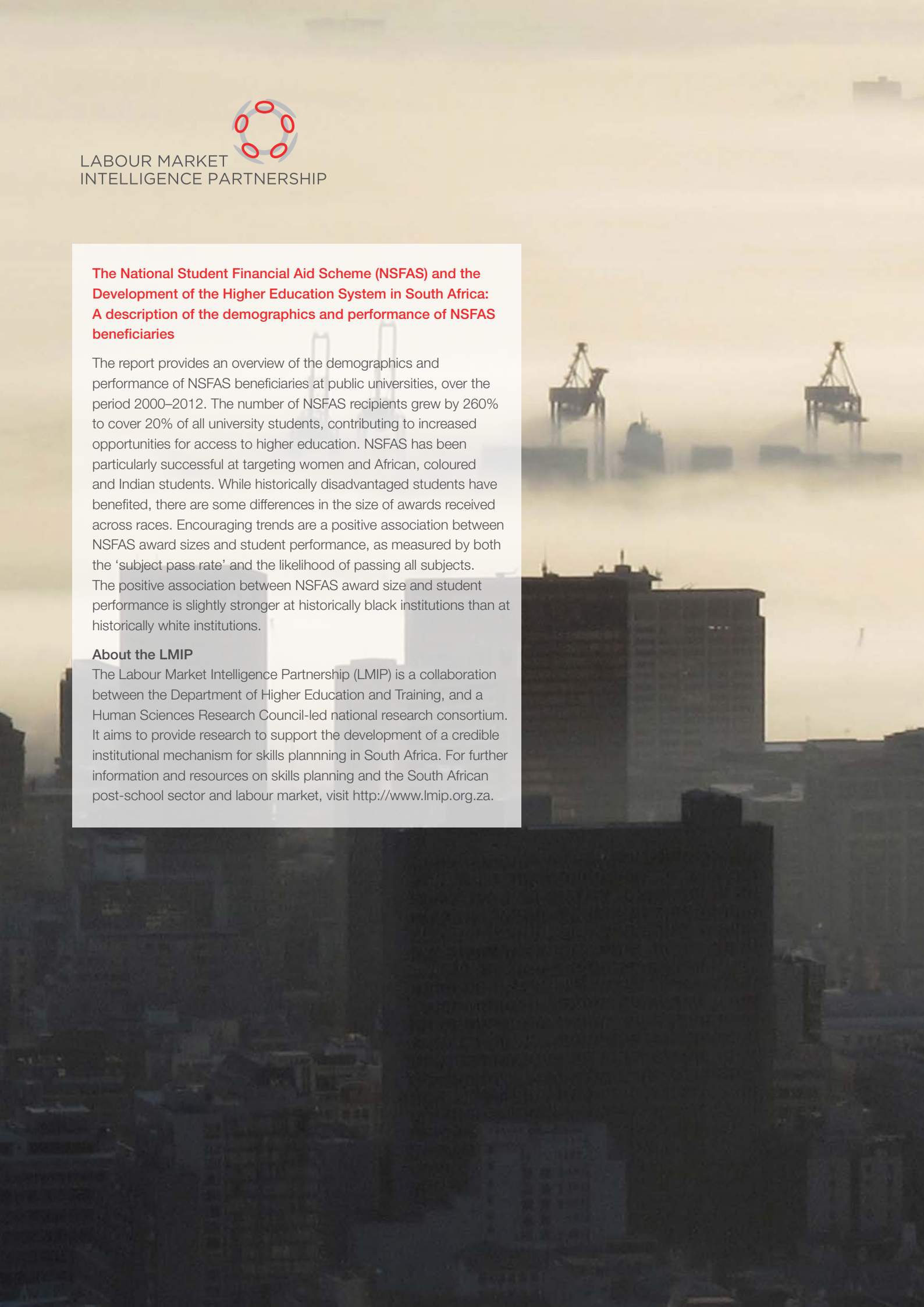

LABOUR MARKET
INTELLIGENCE PARTNERSHIP

The National Student Financial Aid Scheme (NSFAS) and the Development of the Higher Education System in South Africa: A description of the demographics and performance of NSFAS beneficiaries

The report provides an overview of the demographics and performance of NSFAS beneficiaries at public universities, over the period 2000–2012. The number of NSFAS recipients grew by 260% to cover 20% of all university students, contributing to increased opportunities for access to higher education. NSFAS has been particularly successful at targeting women and African, coloured and Indian students. While historically disadvantaged students have benefited, there are some differences in the size of awards received across races. Encouraging trends are a positive association between NSFAS award sizes and student performance, as measured by both the 'subject pass rate' and the likelihood of passing all subjects. The positive association between NSFAS award size and student performance is slightly stronger at historically black institutions than at historically white institutions.

About the LMIP

The Labour Market Intelligence Partnership (LMIP) is a collaboration between the Department of Higher Education and Training, and a Human Sciences Research Council-led national research consortium. It aims to provide research to support the development of a credible institutional mechanism for skills plannning in South Africa. For further information and resources on skills planning and the South African post-school sector and labour market, visit http://www.lmip.org.za.