

# **NSFAS Research Report 05:**

Predicting university and TVET college's demand for NSFAS bursaries up to 2025



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# NSFAS Research Report 05:

## Predicting university and TVET college demand for NSFAS bursaries up to 2025

The National Student Financial Aid Scheme (NSFAS) research reports contain original research designed to inform and improve efficiency on its internal operations. The reports also provide evidence for the wider stakeholder community and form the base for policy proposals.

### Summary Findings:

- On current uptake levels, the supply of bachelor places exceeds the forecast demand;
- The supply of diploma places is not adequate for forecast demand by some 30-40,000 places per annum;
- The number of potential applicants who are academically eligible but are unable to find a place or choose not to proceed to diploma level education, will have risen from 400,000 in 2018 to 800,000 in 2025;
- In TVET colleges, the forecast potential demand outstrips supply by some 90-130,000 places per annum;
- The number of suitably qualified potential applicants who do not progress to some form of post school education or training is forecast to rise from 3m in 2019 to 6.4m in 2025. Most of these will likely join the existing numbers of those not in education, employment or training (NEETs);
- The cost to NSFAS of current levels of demand and supply will rise to R37 bn by 2025;
- If supply increases to meet demand, then the cost to NSFAS will rise to R40 bn by 2025;
- If uptake rates increase due to the more favourable funding support now offered by NSFAS, the total cost might increase to R46 bn by 2025;
- The results highlight that current enrolment targets set by DHET, are not aligned with the government's aim to improve the intermediate-level skill base in South Africa.

Prepared  
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June 2019

# 1. Introduction



The National Student Financial Aid Scheme (NSFAS) was established (NSFAS Act 56 of 1999, as amended) to “provide financial aid to eligible students who meet the criteria for admission to a further education and training programme or to a higher education programme”.

## Amongst its identified functions are:

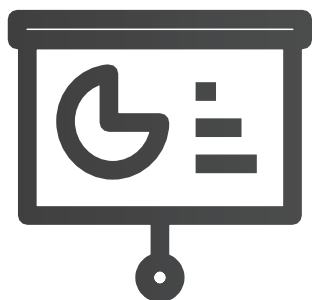
- To allocate funds for bursaries to eligible students;
- To develop criteria and conditions for the granting of financial support to eligible students in consultation with the Minister (of Higher Education and Training); and
- To advise the Minister on matters relating to student financial aid.

A set of new principles for the allocation of funding in relation to the DHET Bursary Scheme, was introduced for new entrants to the post school education and training (PSET) system in South Africa for the academic year 2018, and thereafter. They differ from previous principles in that they provide a complete bursary for full cost of study (fees and university or college residence) plus allowances for food, travel, books and accommodation (if not in university or college residence) for poor and working-class students.

The new scheme changed the landscape of financial support for poor and working-class students wishing to access PSET in two main ways. Firstly, the former loan and bursary scheme was changed to a pure bursary scheme, with no repayable loan component. Secondly, it redefined the financial definition of poor and working-class households from those with household income of less than R122,000 to ones with household income up to R350,000.



Alongside the unveiling of the plan, it was announced that the subsidy to universities would increase from 0.68% to 1% of gross domestic product (GDP). With the change from loan to bursary and the increase in eligible household income threshold definition applying to poor and working class, this decision has major ramifications for the national fiscus and Treasury. Forecasts of potential future demand for NSFAS funding are critical for informed financial planning purposes.



Historically, 68.5% of those that achieve passing grades at the National Senior Certificate (NSC) examinations have accessed higher or vocational education and training<sup>1</sup>. For the 31.5% that do not access further study, there will have been several explanatory reasons, but affordability is likely to have been one influential factor. Such considerations are now reduced considerably for those with household incomes up to R350,000. A pent-up historical demand for PSET places may now emerge from those that did not qualify under earlier funding regimes.

In this paper, we forecast the impact of these changes on the likely demand for NSFAS funding over the next seven years. We predict demand by using forecast numbers of grade 9-12 basic education learners and their historical success rates in the National School Certificate (NSC) examinations. Estimates of financial eligibility are made from results produced by Xpert Decision Systems (XDS) using South African Credit and Risk Reporting Association (SACRRA) data as at January 18, 2019. Additional data is further sourced from Statistics South Africa's (StatsSA) Household Expenditure report, and from historical levels of NSFAS funding and uptake in the PSET sector.

Supply information comes from the latest Department of Higher Education Training (DHET) recruitment targets for universities and Technical and Vocational Educational and Training (TVET) colleges.

The results indicate that the supply of bachelor places exceeds the forecast demand, to the extent that suitably qualified applicants who did not apply previously for higher education could also be accommodated. The supply of diploma places is not adequate for forecast demand. By 2025, the number of potential applicants who are unable to find a place or who choose not to proceed to higher education, but are academically eligible to do so, will have risen from 400,000 in 2018 to 800,000. Similarly, the demand for TVET college spaces far outstrips supply. The number of suitably qualified potential applicants who do not progress to some form of PSET is forecast at around 100,000 learners per annum. Most, will likely join the existing numbers of those not in education, employment or training (NEETs). The results highlight that the government's aim to improve the skill base in South Africa and extolled so cogently in the National Development Plan<sup>2</sup> are not being supported by targets for PSET enrolment, set by DHET.

## 2. Household Income Estimation and Eligibility for NSFAS Funding

In 2018, the first year of the new bursary scheme, some 55% of first-time entering (FTEN) university students received NSFAS bursaries. The equivalent percentage for senior students (all registered students other than FTENs) was 30%. The difference lies in the change of the household income cap in December 2017 (from R122,000 to R350,000).



<sup>1</sup> Van Broekhuizen, H; van der Berg, S. and Hofmeyr, H. (2016). Higher education access and outcomes for the 2008 national matric cohort. Stellenbosch Economic Working Papers 16/16 and LMIP Working Paper.

<sup>2</sup> National Development Plan 2030: Our future - make it work, South African Government, 15 August 2012

In 2018, all senior students would have been financially evaluated on a household income of R122,000. As each year passes, the proportion of senior students that are evaluated on the R350,000 threshold will increase and by 2023, all senior students and FTEN students, will be evaluated on the R350,000 threshold. Using these figures for forecasting purposes, means that the percentage for NSFAS funded senior students in 2019 is assumed to be 35%, 40% by 2020, 45% by 2021, 50% by 2022, and 55% of recruitment target by 2023 and thereafter. These estimates are summarised in Table 1.

**Table 1: Forecast percentages of undergraduate university students funded by NSFAS**

Year	% NSFAS funded First Time Entering Students (FTEN)	% NSFAS funded Senior Students
2018	55%	30%
2019	55%	35%
2020	55%	40%
2021	55%	45%

In the DHET planning for 2019, it is assumed that 53% of registered students at TVET colleges will be supported by a NSFAS bursary.

Figures from SARS indicate that in 2017, assessed taxpayers in the R70,000 – R350,000 income group benefitted from allowable deductions of 12% of taxable income. Thus, gross income is some 12% higher than taxable income. It is gross household income upon which NSFAS financial eligibility is assessed. Applying this adjustment to the number of taxpayers with taxable income lower than R350,000, indicates that 59% of assessed taxpayers had a household income less than R350,000 in 2017<sup>3</sup>.

<sup>3</sup> South African Revenue Service, 2018 Tax Statistics – Personal Income Tax, Table 2.7

As assessed taxpayers represent only 25% of registered taxpayers, and are likely to have a higher taxable income than the average taxpayer, it is probable that 59% is a considerable underestimate of the proportion of the population which has a household income up to R350,000.

Estimates of household income nationwide produced by Xpert Decision Systems (XDS) analytics using South African Credit and Risk Reporting Association (SACRRA) data as at January 18, 2019<sup>4</sup>, indicate that 89% of households have pre-tax income less than R350,000 per annum.

Given family household income data, the proportion of NSFAS funded students at both universities and TVET colleges is puzzlingly low. What might be driving such differences?

Figures reflecting the racial mix of South Africa, TVET and university bursary holders are reported in Table 2.

**Table 2: Racial mix in South Africa and amongst NSFAS bursary holders at university and TVET colleges, 2018**

	Proportion of South African population by race <sup>5</sup>	Proportion of NSFAS supported university students by race	Proportion of NSFAS supported TVET students by race
<b>African</b>	81%	90%	92%
<b>Coloured</b>	9%	3%	5%
<b>Indian/Asian</b>	2%	1%	0%
<b>White</b>	8%	1%	0%

<sup>4</sup> Personal communication

<sup>5</sup> The calculation for proportional representation of racial groupings of NSFAS beneficiaries excludes a total of 15 569 students that did not indicate their race and those classifying themselves as "other". The proportions for South Africa are based on the 2018 mid-year population estimates.



The data in Table 2 reveal that NSFAS bursary holders are mostly Black and less Coloured, Indian/Asian and White than the populous at large. Given the average household income by race in South Africa (see Table 3), these proportions are to be expected. The average income of African households is some 30% below the national average household income of c. R140,000, whilst Coloured households are 25% above, Indian/Asian households double the national average and White households, on average, over three times the national average. Nonetheless, with average household income of both Coloured and Indian/Asian households being below the R350,000 bursary threshold, it is surprising that the percentage of NSFAS funded students from these households is below the national preponderance<sup>6</sup>.

Weighting average household incomes by racial proportions in the wider South African population, indicates that the average household income of NSFAS recipients at university is 73% that of the national average, and for TVET college student recipients 71% of the national average. With the average national household income falling below R350,000, it remains puzzling that the percentages of NSFAS funded students at both universities and TVET colleges are as low as they are.

**Table 3: Average annual household income by population group of the household head<sup>7</sup>**

Race of Household Head	Average annual household income
African	R92,983
Coloured	R172,765
Indian/Asian	R271,621
White	R444,446

Whilst further research into the reasons for these discrepancies is warranted, the most compelling explanation that we currently posit is the racial difference in higher education participation rates. Headcount numbers by race and resulting participation rates for 2011 to 2016 are tabulated in Tables 4 and 5 respectively<sup>8</sup>.

<sup>6</sup> This is an area for future research

<sup>7</sup> Statistics South Africa, 2014/2015, Living Conditions of Households in South Africa, Table 3.3

<sup>8</sup> Council on Higher Education, Vital Stats Public Higher Education 2016

**Table 4: Headcount by race in higher education from 2011 to 2016**

Race	2011	%	2012	%	2013	%	2014	%	2015	%	2016	%
<b>African</b>	640,442	68%	662,123	69%	689,503	70%	679,800	70%	696,320	71%	701,482	72%
<b>Coloured</b>	59,312	6%	58,692	6%	61,034	6%	60,716	6%	62,186	6%	61,963	6%
<b>Indian</b>	54,698	6%	52,296	5%	53,787	5%	53,611	6%	53,378	5%	50,450	5%
<b>White</b>	177,365	19%	172,654	18%	171,927	17%	166,172	17%	161,739	16%	152,489	16%
<b>Unknown</b>	6,383	1%	7,608	1%	7,447	1%	8,855	1%	11,589	1%	9,453	1%
<b>Total</b>	938,200		953,373		983,698		969,154		985,212		975,837	

**Table 5: Participation rates in higher education by race from 2011 to 2016**

Race	2011	2012	2013	2014	2015	2016
<b>African</b>	14%	16%	16%	15%	16%	16%
<b>Coloured</b>	14%	14%	15%	14%	15%	15%
<b>Indian</b>	47%	47%	49%	50%	49%	47%
<b>White</b>	57%	55%	55%	54%	53%	50%
<b>Total</b>	17%	19%	20%	18%	19%	18%

Though the headcount figures reported in Table 4 indicate a preponderance of African and White students in higher education, these proportions are out of kilter with society at large. See Table 6.

**Table 6: Racial mix in South African society as a whole in 2018 and in higher education in 2016**

Race	Proportion of South African population, by race <sup>9</sup>	Proportion of higher education NSFAS supported students, by race
<b>African</b>	81%	72%
<b>Coloured</b>	9%	6%
<b>Indian/Asian</b>	2%	5%
<b>White</b>	8%	16%

<sup>9</sup> The calculation for proportional representation of racial groupings of NSFAS beneficiaries excludes a total of 15 569 students that did not indicate their race and those classifying themselves as "other". The proportions for South Africa are based on the 2018 mid-year population estimates.

These disparities are reflected in the much lower participation rates documented in Table 5. Whilst White and Indian/Asian student participation rates in PSET lie in the fifty percent, those for African and Coloured students are at a stubbornly static 15%. Even though the incomes of African and Coloured households are less than the national average, and thus more likely to be NSFAS eligible, university campuses are made up of a much larger percentage of White and Indian/Asian students than are present in the broader populous. Due to their higher average household incomes, are much less likely to be NSFAS eligible. Consequently, the percentage of NSFAS funded students in the PSET system will persist to be lower than might be expected from household income information, as long as participation rates amongst African and Coloured students remain at their historically low levels or are improving at such a slow rate.

There is no evidence to suggest that these rates will increase markedly over the next five years. A policy focus on participation rates would seem essential if PSET campuses are to become more representative of society as a whole. Whilst NSFAS funding is likely necessary to achieve such a goal, the evidence suggests that , it is far from sufficient as a policy tool.

### **3. Bursary Coverage**

The concept of a 'missing middle' comes from economic and political analysis of South African development.<sup>10</sup> In comparison to countries of similar average incomes, population sizes, developmental challenges and resources, South Africa has a larger than average gap between those who are wealthy or just comfortably off on the one hand (considered as the top 15%<sup>7</sup>), and the working poor on the other hand.

In comparison to other middle-income countries, South Africa's rich are extremely rich, the poor very poor and there's a very large hole in the middle; the 'missing middle'.

Within the higher education funding context, when 'poor and working-class' households were classified as those with an income up to R122,000, the missing middle was often referred to by DHET as households with incomes between R122,000 and R600,000<sup>11</sup>.

Estimates of household income nationwide produced by Xpert Decision Systems (XDS) analytics using South African Credit and Risk Reporting Association (SACRRA) data as at 18 January 2019<sup>5</sup>, indicate that 75% of households have pre-tax income less than R122,000 per annum, 89% of households have pre-tax income less than R350,000 per annum and 96% below R600,000.

Under the former description of poor and working-class households (up to R122,000), the missing middle represented some 21% of South African households. Under the new dispensation, this has fallen to less than 7%. Given the skewed participation rates in PSET for higher income households identified above, it is likely that the percentage of missing middle students on PSET campuses will be close to 7%. On current total undergraduate and TVET student numbers, of approximately 1,500,000, this equates to around 100,000 current registered students in the household income bracket of R350,000 to R600,000. The 4% of students from households with incomes in excess of R600,00 number some 60,000 students.

<sup>10</sup> Levy B., Hirsch A. and Woolard I.; South Africa's Evolving Political Settlement in Comparative Settlement; South Africa Labour and Development Research Unit, Working Paper Series 138; 2014.

<sup>11</sup> Department of Higher Education and Training, 2017, Media Release 20 February 2017, DHET Clarifies the Gap Funding Grant.

#### 4. Forecasting Demand Methodology

The National Senior Certificate (NSC) examination is taken by learners at the end of their grade 12 year, the final year of basic education. The outcome can be a pass for entry to study for a bachelor qualification (only at university), study for a diploma qualification (predominantly at university) or study for a certificate qualification (predominantly at TVET colleges). In addition, learners who have successfully passed grade 9 may choose to complete their basic education at a TVET college.

Consequently, the base for all PSET demand flows is from basic education numbers and learner success rates. The basic education numbers at all grades (see Table 7) are collected from 2010 to 2016 from the Department of Basic Education (DBE) Annual Reports.

**Table 7: Number of learners (000's) in each grade by year 2010-2016**

Grade	Year							Average % change from previous grade from previous year for period 2010-2016	Cumulative factor to be applied to number of learners in each grade to generate forecast of number of grade 12 learners
	2016	2015 <sup>12</sup>	2014	2013	2012	2011	2010		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
12	705	590	572	597	552	535	579	69%	
11	902	870	897	835	874	848	842	79%	0.69
10	1,105	1,104	1,140	1,146	1,105	1,094	1,040	106%	0.54
9	905	1,030	1,049	1,073	1,096	1,050	1,009	106%	0.58
8	953	970	936	942	972	1,008	1,001	105%	0.61
7	900	920	875	902	913	941	981	97%	0.64
6	947	935	895	909	936	946	978	98%	0.62
5	1,027	960	930	924	939	953	979	96%	0.61
4	1,126	1,010	1,036	965	966	975	1,003	101%	0.59
3	1,119	1,020	1,073	1,025	967	957	973	96%	0.59
2	1,182	1,090	1,150	1,116	1,075	1,003	994	92%	0.57
1	1,209	1,195	1,236	1,223	1,209	1,177	1,117		0.50

From these data an attrition rate from the previous year and previous grade is calculated and averaged over the 7 sample years. The results are depicted in column 9 of Table 7.

<sup>12</sup> No official figures available for 2015 and so estimated by averaging the 2014 and 2016 figures.

These attrition rates reflect two factors: changes in the number of learners due to spikes in birth rate from year to year and the fall out rate of learners. The percentages all hover around 100% reflecting a good level of progression of learners and limited fluctuations in the birth rate, a decade before the sample period. The live birth rate for the first decade of the third millennium was remarkably static at approximately 1.1 million births<sup>13</sup> per annum indicating that the calculated percentages reflect stable participation rates.

For grades 1 to 10, the participation rates are clustered around 100%. However, in grades 11 and 12 there are notable drops with the percentages being 79% and 69% of the preceding grades, respectively. That is, on average, there were 79% of the grade 10 learners still learning in grade 11 of the following year and 69% of grade 11 learners progressed to grade 12. These percentages reflect the end of compulsory education on the successful completion of grade 9 and the possibility of completing basic education at a TVET college or leaving formal education completely.

These average annual attrition rates can be combined to gain a percentage attrition rate from each grade to grade 12. These are reflected in column 10 of Table 7. For example, grade 12 learner numbers in year are, on average, 62% of those in grade 6 in year (n-6) and 59% of those in grade 3 in year (n-9).

These attrition rates can be evaluated for accuracy, to some extent, by applying them to a subset of the learner data for which actual values are available (see Table 8). The cumulative forecast percentages recorded in column 10 of Table 7, are applied to the years and grades for which there are both base and outcome learner numbers from the DBE Annual Reports. For example, the 2011 grade 12 learner numbers can be estimated by multiplying 2010 grade 11 learner numbers by 0.69; the 2012 grade 12 learner numbers can be estimated by multiplying 2011 grade 11 learner numbers by 0.69 or 2010 grade 10 learner numbers by 0.54; 2013 grade 12 learner numbers can be estimated by multiplying 2012 grade 11 learner numbers by 0.69, 2011 grade 10 learners by 0.54 or 2010 grade 9 learners by 0.58; and so on. As the data for 2015 are estimated, due to a lack of the relevant annual report, this year is not included for this accuracy assessment.

<sup>13</sup> [www.statssa.gov.za](http://www.statssa.gov.za) (PDF)<http://www.statssa.gov.za/publications/P0302/P03022018.pdf>

**Table 8: Forecast Accuracy of Proposed Prediction Algorithm Using Known Data**

Predicted from grade	Grade 12 learner numbers ('000) predicted using relevant previous grade						average error
	2016	2015	2014	2013	2012	2011	
11	598	616	573	601	582	578	
10	598	618	621	598	593		
9	592	603	617	631			
8	594	573	577				
7	589	560					
6	583						
	% error between predicted and actual values						average error
11	-15%	4%	0%	1%	6%	8%	1%
10	-15%	5%	9%	0%	7%		1%
9	-16%	2%	8%	6%			0%
8	-16%	-3%	1%				-6%
7	-16%	-5%					-11%
6	-17%						-17%
average error	-16%	1%	4%	2%	6%	8%	1%

Whilst not an extensive test, and an in-sample test at that, the percentage errors for each of the years 2011-2016, inclusive, are reassuring in that they are all single digit (except for 2016). There is no clear bias (although the overall average is positive, meaning that the forecasts to be generated are unlikely to underestimate demand) and that the error rates do not display a monotonic increase as the forecast window becomes longer. The increased error rates in 2016 result from an approximate 100,000 jump in grade 12 numbers from the average of the previous 5 years. The reason for this jump is unknown.

The forecast figures of the number of grade 12 learners for the years 2017 to 2024 are generated by applying the cumulative percentage forecast percentages from column 10 of Table 7 to the number of learners in 2016 at each grade from grade 10 (for 2018 prediction) to grade 4 (for 2024 prediction) from column 2 of Table 7.

## 5. Forecasting University Demand

Previous work<sup>14</sup> reports that, on average, 93% of grade 12 learners sit for the NSC exam. Applying this factor leads to the forecast number of learners who will sit for the NSC examination in years 2018 to 2024, inclusive (column 9, Table 9). Applying the average pass rates over the period 2010 – 2016 for bachelor, diploma and certificate passes (see Table 9) leads to the potential pool of PSET applicants for each of the years 2018 – 2024 for bachelor, diploma and certificate courses as set out in columns 2, 4 and 6 of Table 9, respectively.

**Table 9: Number of Successful Learners and Pass Rates at Bachelor, Diploma and Certificate levels of the NSC examination for years 2010 to 2017 and Forecasts for years 2018-2024**

Year	Qualified for Bachelor's		Qualified for Diploma		Qualified for Higher Certificate		Total number of learners	
	Number	% of those who wrote	Number	% of those who wrote	Number	% of those who wrote	who passed	who sat
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
<i>Number of Successful Learners and Pass Rates at Bachelor, Diploma and Certificate levels</i>								
2010	126,371	23	146,854	27	91,290	17	364,515	547,061
2011	120,767	24	141,584	29	85,296	17.2	347,647	496,984
2012	133,992	27	129,991	30	88,604	17.3	352,587	503,729
2013	171,755	31	173,292	31	94,540	16.8	439,587	561,291
2014	150,752	28	166,689	31	86,022	16.1	403,463	532,693
2015	166,263	26	183,720	29	105,770	16.4	455,753	644,430
2016	162,374	27	179,619	29	100,486	16.5	442,479	610,429
2017	153,610	29	161,333	30	86,265	16.1	401,208	535,226
<b>mean pass rate</b>		<b>26.75</b>		<b>29.48</b>		<b>16.67</b>		<b>74.96</b>
<i>Forecasts for years 2018-2024</i>								
2018	148,934	26.75	164,134	29.48	92,840	16.68	405,909	556,764
2019	129,505	26.75	142,722	29.48	80,729	16.68	352,955	484,130
2020	145,112	26.75	159,921	29.48	90,458	16.68	395,491	542,474
2021	143,284	26.75	157,907	29.48	89,318	16.68	390,509	535,640
2022	146,922	26.75	161,917	29.48	91,586	16.68	400,425	549,242
2023	155,905	26.75	173,785	29.48	98,270	16.67	429,747	589,501
2024	164,745	26.75	180,962	29.48	102,328	16.67	447,495	613,848

It is assumed that only applicants with the appropriate pass (bachelor, diploma, certificate) will be accepted for registration on a course at the relevant level

<sup>14</sup> NSFAS Policy and Research Unit; Briefing Paper Series 02: PSET sector and NSFAS profile; NSFAS, 2018

Consequently, only bachelor and diploma passes will be considered for university entry. The forecast for the demand for bachelor and diploma places for the years 2019 to 2025 (the demand for 2019, for example, coming from successful passes in 2018) inclusive are contained in the lower rows of columns 2 and 4 of Table 9, respectively.

Of those that pass the NSC examination only 68.5% have, historically, accessed higher education (refer to footnote 1). Applying this factor to the forecast number of successful bachelor passes provides an anticipated demand for first time entering (FTEN) bachelor students for the following academic year (Table 10, column 3). The cumulative latent demand resulting from the 31.5% who successfully passed the NSC examination at bachelor level in previous years (since 2010) but who have not, as yet, proceeded to higher education are recorded in column 4 (373,553) of Table 10.

It is assumed that the supply of bachelor places for both FTEN and senior students (columns 5 and 6, respectively, of Table 10) remain static to 2025. This may be considered an inappropriate assumption. However, to date, DHET has not published post 2019 recruitment targets for universities. Therefore, for the purposes of this research, it is considered prudent to assume zero growth in recruitment targets. This is an important proviso when interpreting the results of this research and in related policy proposals.

**Table 10: Forecast Demand and Supply for Bachelor Qualifications 2018-2025**

Year	Forecast demand			Forecast supply numbers based on latest DHET recruitment targets		Resultant outcome of forecast supply and demand comparison		
	NSC exam bachelor passes (from preceding year from Table 9 column 2)	Demand take up: 68.5% of column (2)	cumulative latent bachelor demand 2010-2017	First time entering students (FTEN)	Senior students	Total bachelor students  ((Minimum of ((3) or (5))+((6)))	Unmet demand  ((3)-(5))	cumulative latent demand  ((4)+0.315 *((2)+(8)))
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
			373,553					
2019	148,934	102,020		141,236	447,754	549,774	-39,216	381,251
2020	129,505	88,711		141,236	447,754	536,465	-52,525	369,520
2021	145,112	99,402		141,236	447,754	547,156	-41,834	373,396
2022	143,284	98,149		141,236	447,754	545,903	-43,087	375,444
2023	146,922	100,642		141,236	447,754	548,396	-40,594	381,130
2024	155,905	106,795		141,236	447,754	554,549	-34,441	395,799
2025	164,745	112,850		141,236	447,754	560,604	-28,386	419,308



## 5.1 Supply of FTEN Bachelor Places

Whilst universities are independent organisations, the Department of Higher Education and Training (DHET) sets recruitment targets for universities for both FTENs and senior students (all students that are not FTEN). These enrolment targets are contained in Addendum F to the Ministerial Statement on University Funding 2016-2017 and 2017-2018. Addendum F is updated annually, and the most recent version dated January 25, 2018, contains actual enrolments from 2007-2015 and planned/expected enrolment from 2016 to 2019. The data for the period 2007-2019 show consistent annual growth. On that basis, it is assumed for the purposes of this research that, the 2019 recruitment targets are maintained until 2025. No further growth is assumed due to the cost implications, which current economic conditions are likely to preclude.

The average proportion of bachelor students amongst undergraduate students within universities over the period of 2013-2019, inclusive, is 67% (Table 3 of Addendum F). It is assumed that this proportion will remain the same until 2025. On that assumption, the supply of bachelor FTEN and continuing places in the period 2020 – 2025 is forecast and captured in Table 10, columns 5 (FTEN) and 6 (senior).

Comparing demand in column 3 with supply in column 5 produces shortfall/excess figures on an annual basis for FTEN students in column 8. These are then added to the cumulative latent demand from the previous year plus the assumed 31.5% of successful passes from the year in question who are assumed not to proceed to produce a cumulative latent demand figure in column 9.

Whilst there are multiple reasons why individuals choose not to undertake higher education, cost and affordability are likely influential. With that constraint removed, following the introduction of the revised bursary scheme in January 2018, many of these qualified applicants may well now apply for university admission. The data contained in columns 8 and 9 indicate that:

- At the bachelor level, there is sufficient planned capacity in the system to meet forecast demand;
- Indeed, there is sufficient over capacity on an annual basis that the historical latent demand will, initially fall from the c. 375,000 individuals in 2018 and then increase marginally to c. 420,000 by 2025;
- Thereafter it is likely that there will be unfilled bachelor places at some or all public universities due to a shortage of suitably qualified potential applicants.

## 5.2 Supply of FTEN Diploma Places

The same process as for bachelor places is applied to diploma places. The only difference results from the fact that demand outstrips supply. For the purposes of this research, it is assumed that all unmet demand at the diploma level will not add to the cumulative latent demand pool but, rather, become additional demand for certificate places in the same year. The resultant data are captured in Table 11.

**Table 11: Forecast Demand and Supply for Diploma Qualification 2018-2025**

Forecast demand				Forecast supply numbers based on latest DHET recruitment targets		Resultant outcome of forecast supply and demand comparison		
Year	NSC exam bachelor passes (from preceding year from Table 9 column 2)	Demand take up: 68.5% of column (2)	cumulative latent bachelor demand 2010-2017	First time entering students (FTEN)	Senior students	Total bachelor students  ((Minimum of ((3) or (5))+((6)))	Unmet demand  ((3)-(5))	cumulative latent demand  ((4)+0.315*(2)+(8))
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9) **
			373,553					
2019	148,934	102,020		141,236	447,754	<b>549,774</b>	-39,216	381,251
2020	129,505	88,711		141,236	447,754	<b>536,465</b>	-52,525	369,520
2021	145,112	99,402		141,236	447,754	<b>547,156</b>	-41,834	373,396
2022	143,284	98,149		141,236	447,754	<b>545,903</b>	-43,087	375,444
2023	146,922	100,642		141,236	447,754	<b>548,396</b>	-40,594	381,130
2024	155,905	106,795		141,236	447,754	<b>554,549</b>	-34,441	395,799
2025	164,745	112,850		141,236	447,754	<b>560,604</b>	-28,386	419,308

\*\* assuming unmet demand (column (8)) becomes additional demand for certificate courses

The data show that:

- At the diploma level, there is insufficient planned capacity in the system to meet forecast demand of around 40,000 places per annum;
- As a consequence, even with in-year unmet demand being assumed to become additional demand for certificate places. The cumulative latent unmet demand will increase from 400,000 places in 2017 to 800,000 by 2025.

## 6. Demand for TVET College Places

TVET colleges offer National Certificate (Vocational) (NC(V)), courses at Levels 2-4 and National Accredited Technical Education Diploma (NATED or Report 191) courses at levels N1-N6, as well as various occupational and part-qualifications. Only the NC(V) and Report 191 qualifications are funded by NSFAS. Levels L2-L4 of the NC(V) qualifications and N1-N3 of the Report 191 qualifications are equivalent to basic education grades 10-12. NC(V) Level 4 and Report 191 level N3 are equivalent to a NSC examination pass and can be used as a progression qualification to Report 191 Level 4 courses. Learners who have successfully passed grade 9 may apply for entry to NC(V) L2 or Report 191 N1 courses. Entry to Report 191 N4 courses may come from successful graduates of NC(V) L4, NATED N3 and the NSC examination at certificate level.

The data in Tables 12 and 13<sup>15</sup> show that both the headcount and percentage of students taking unfunded occupational qualifications and other courses at TVET colleges, have fallen monotonically (apart from 2012) between 2010 and 2016. By 2016, they amounted collectively to only 5% of total TVET registrations. During the same period the percentage of NC(V) courses has fallen from 36% to 25% of total registrations and that for Report 191 courses has risen from 47% to 70% in 2016.

**Table 12: Number of students enrolled in TVET colleges, 2010 - 2016**

Qualification Category	2010	2011	2012	2013	2014	2015	2016
NC(V)	130,039	124,658	140,575	154,960	166,433	165,459	177,261
NATED, Report 191	169,774	222,754	359,624	442,287	486,933	519,464	492,026
Occupational Qualifications	23,160	20,799	62,359	19,000	19,825	20,533	13,642
Other	35,420	32,062	95,132	23,371	29,192	32,424	22,468
<b>Total</b>	<b>358,393</b>	<b>400,273</b>	<b>657,690</b>	<b>639,618</b>	<b>702,383</b>	<b>737,880</b>	<b>705,397</b>

**Table 13: Percentage of total students enrolled in TVET Colleges, 2010-2016, per qualification category**

Qualification Category	2010	2011	2012	2013	2014	2015	2016	average
NC(V)	36%	31%	21%	24%	24%	22%	25%	26%
NATED, Report 191	47%	56%	55%	69%	69%	70%	70%	62%
Occupational Qualifications	6%	5%	9%	3%	3%	3%	2%	5%
Other	10%	8%	14%	4%	4%	4%	3%	7%

These data reflect the perverse reflection of what might best be described as 'qualification creep'. The persistently high drop-out rates at university level and the growing chronic skills shortage in South Africa, suggest that higher education policy may not be supporting the aspirations of the National Development Plan (NDP) in an optimal fashion. In that document, the development of skills is identified as a primary driver of South African economic success and the elimination of economic imbalance flowing from the Apartheid regime. The data in Tables 12 and 13 highlight that in the absence of sector expansion, the growth in NATED registrations is at the cost of registrations for predominantly grade 9 graduate school leavers. This leaves a potential gap in skills levels within the South African economy. In many ways, it mirrors the situation at universities where bachelor and diploma demand are roughly equal whilst the supply of diploma places is half that for bachelors.

The skills shortage in South Africa is well documented, not least in government planning documents. Whilst the output from basic education splits more or less equally between those qualified for university places and those for TVET places, the supply side is heavily weighted towards universities with 50% more places at university than at TVET colleges (roughly 900k places at university and roughly 600k places at TVET (66% of university places). This planning imbalance is also reflected in the planned numbers in the

<sup>15</sup> Generated from *Department of Higher Education and Training; Statistics on Post-School Education and Training in South Africa: 2016*

National Development Plan (NDP) of 1.62m registered university places and 1.25m (77% of university places) in TVET colleges by 2030. The output of basic education would suggest that plans should reflect the provision of an equal number of university and TVET places.

It was envisaged in the 2013 White Paper<sup>16</sup> that, academic opportunities in TVET colleges would be instrumental in raising overall PSET enrolments and would play a pivotal role in building the skills of South African youth and the unemployed. The demand data, reported in this paper and, more alarmingly, the supply data also, indicate how far the reality of the 2020s will be from the aspirations of the 2010s. The opportunities for reskilling in today's dynamic global economic environment and for the ever-growing number and proportion of persons not in employment, education or training (NEETs) within South Africa<sup>17</sup>, seem to be diminishing rather than expanding.

As noted previously, the demand for TVET college places extends beyond NSC certificate pass graduates. Those who have completed the compulsory basic education to grade 9 may choose to undertake further study at a TVET college. The potential demand from such learners is estimated by adding the drop in numbers between grade 11 of the previous year, and grade 12 of the current year to the drop in numbers between grade 10 of the previous year and grade 11 of the current year; using the numbers from Table 7, and applying the historical uptake percentage.

The demand for university degree and diploma places can be forecast from forecasts of learner numbers and pass rates at the NSC examination. The demand for TVET places, on the other hand, is rather more complex. Colleges may receive applications from grade 10-12 school leavers, NSC examinees who pass at certificate level and any unfilled demand from the university sector as well as from unfunded occupational or skills courses. Applicants may apply for entry at NC(V) L2, Report 191 level N1 or Report 191 level N4. All remaining levels are accessed by progression from one of these three entry points.

## **7. Forecasting TVET Demand for Entry to Report 191 N4 Courses**

DHET produces annual statistics on post-school education and training in South Africa. Whilst the reported statistics are not consistent across the years, pass rates for NC(V) L4 and Report 191 level N3 courses are reported for 2016 in the 2016 report<sup>18</sup>, released in March 2018. These are applied to the average proportions of L4 and N3 enrolments to total enrolments to forecast progression demand for N4 courses in the following year from NCV L4 and NATED N3 graduates. As L4 is an exit qualification in its own right, it is assumed that only 20% of eligible students progress. Whilst, N3 is also an exit qualification, it is assumed that 50% of eligible students will progress to N4 as the full, diploma is only available to N6 graduates. Data on the real progression rates from these two sources would enhance the reliability of forecasts made.

Students with certificate passes at the NSC examination (see Table 9) may apply for entry into NATED N4 and, for the purposes of this research, it is assumed that the unmet demand at diploma level (see Table 11, column 8) will also flow through to additional NATED N4 demand. Thus, there are four potential sources

<sup>16</sup> Department of Higher Education and Training, 2013; White Paper for Post-School Education and Training

<sup>17</sup> Department of Higher Education and Training; Fact Sheet on 'NEETs'; 2017

<sup>18</sup> Department of Higher Education and Training; Statistics on Post-School Education and Training in South Africa: 2016

of N4 applications: NCV L4 and NATED N3 progressing students, NSC examination certificate passes and unmet demand from diploma pass students. The total resultant annual forecast demand for NATED N4 places are listed in column 6 of Table 14.

**Table 14: Projected Demand and Supply for Places at N4, 2018-2025**

Year	Certificate passes at NSC examinations in previous year	Demand from NSC certificate passes @ 68.5% take up  (0.685*(2))	NCV L4 and N3 progression to N4: L4 @ 1,9% of total enrolment, 20% progress; N3 @ 5.2% of total enrolment, 50% progress	Unmet diploma demand (from Table 11, column 8))	Total N4 demand  ((3)+(4)+(5))	Supply of N4 places: N4 entrants @ 12% of enrolment (assumed static at 570,000 places)	Unmet N4 demand  ((6)-(7))	cumulative latent N4 demand  (previous year + 0.315*(2))
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)**
			570,000			570,000		261,800
2019	96,050	65,794	14,820	37,123	<b>117,737</b>	68,400	49,337	292,056
2020	92,840	63,596	14,820	23,205	<b>101,620</b>	68,400	33,220	321,301
2021	80,729	55,299	14,820	34,385	<b>104,504</b>	68,400	36,104	346,730
2022	90,458	61,963	14,820	33,075	<b>109,859</b>	68,400	41,459	375,224
2023	89,318	61,183	14,820	35,682	<b>111,684</b>	68,400	43,284	403,359

\*\* assuming unmet demand (column (8)) becomes additional demand for certificate courses

## 7.1 Supply of Report 191/NATED N4 Places

In the DHET Annual Performance Plan of 2016/17<sup>19</sup>, it is reported that the 2016 TVET enrolment target is 829,000. The actual enrolment (667,999) was 80.5% of the target. In the 2017/18 Annual Performance Plan of the DHET, it is reported that the total planned enrolment for 2018 is 710,535. For the purposes of this paper, it is assumed that the actual enrolment for the period 2018-2025 is 80.5% of the 2018/19 target (710,535) reported in the 2017/18 APP. This leads to an enrolment of 571, 981, say 570,000, per annum.

The data from 2013-2016 indicate that, on average, 12% of enrolled students in the TVET system are new entrants at level N4. From this, the supply of N4 places for the period 2018-2025 is calculated and tabulated in column 7 of Table 14.

The data show that:

- At the N4 level at TVET colleges, there is insufficient planned capacity in the system to meet forecast demand of between 30,000 and 60,000 places per annum;
- Assuming that that unmet demand flows to additional demand at the NCV L2 and N1 levels, the cumulative latent unmet demand for N4 courses will increase from 260,000 places in 2018 to 460,000 by 2025.

<sup>19</sup> Department of Higher Education and Training; Annual Performance Plan 2017/18

## 7.2 Demand and Supply for L2 and N1 courses

The entry point for NC(V) courses is at L2 and for Report 191 courses at N1. Entry to the other levels, below L4 and N4, is only by progression. As access to N4 is by a successful pass at NSC examination at certificate level, it is assumed for the purposes of this paper that demand for L2 or N1 courses only comes from learners who have left school after successfully passing grade 9 of basic education, or from unmet demand for N4 courses.

For the period 2013 – 2016, registrations at NCV L2 and N1 levels were at 27% of school leavers from grades 10 and 11<sup>20</sup>. This same percentage is applied to forecast school leaver numbers who progress to study at L2 and N1 levels in 2018 – 2025, to generate forecast demand numbers found in column 3 of Table 15.

Using published TVET data<sup>15</sup> for 2013-2016, the average percentage of TVET students who are new entrants at NCV L2 and N1 is calculated at 15% of total enrolment.

The same percentage is applied to forecast total enrolments and generate the supply figures tabulated in column 6 of Table 15.

**Table 15: Projected Demand and Supply for Places at L2 and N1, 2018-2025**

Year	Grade 10-12 leavers	TVET demand for L2 and N1 at 27%** of grade 10-12 leavers take up	Unmet demand from N4 (Table 14, column 8)	Total demand (3)+(4)	Supply at 15% of total enrolment of 570,000	Shortfall of supply over demand (5)-(6)	Cumulative latent demand and potential NEETs
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
							3,017,654
2019	464,493	125,413	49,337	<b>174,750</b>	85,500	89,250	3,445,984
2020	490,228	132,361	33,220	<b>165,582</b>	85,500	80,082	3,883,932
2021	492,575	132,995	36,104	<b>169,099</b>	85,500	83,599	4,327,111
2022	513,306	138,593	41,459	<b>180,051</b>	85,500	94,551	4,796,375
2023	543,606	146,774	43,284	<b>190,058</b>	85,500	104,558	5,297,765
2024	560,920	151,448	51,273	<b>202,721</b>	85,500	117,221	5,824,457
2025	565,716	152,743	61,441	<b>214,184</b>	85,500	128,684	6,366,115

\*\* generated from DBE data on grade 10-12 numbers in 2015 and 2016 and DHET data on TVET recruitment in 2016

<sup>20</sup> Estimated by combining data from DBE Annual Reports and DHET Statistics on PSET

The data shows that:

- At the lowest entry level for TVET colleges, NCV L2 and N1, there is insufficient planned capacity in the system to meet forecast demand by around 100,000 places per annum. The shortfall grows monotonically year on year from 2020;
- Consequently, the cumulative latent unmet demand will increase from 3m places in 2018 to 6.3m by 2025;
- As the lowest entry point to PSET, the data can be used to estimate the impact of inadequate provision on the number of potential NEETs in society. The latent demand figure reflects the number of qualified learners who do not proceed to any form of post school education or training. Some of these will be by personal choice, but this research has highlighted that the currently planned supply of TVET places is grossly inadequate to take those suitably qualified to higher levels of educational achievement.

### **7.3 Forecast NSFAS Funding**

The numbers reported above are important for policy planning and long-term decisions regarding the PSET sector. They also provide the basis for estimating future costs of the new bursary scheme.

Combining the forecasts of total student numbers from Tables 10 and 11 produces a forecast of bachelor and diploma undergraduate numbers to 2025. As discussed above, it is forecast that 55% of FTEN students into the university sector will be NSFAS eligible in 2019. The percentage of eligible senior students at universities is forecast at 35% for 2019. The difference in FTEN and senior rates reflect the change in household income limit from R122,000 to R350,000. This difference will be eliminated by 2023 when all students will have their financial eligibility evaluated against a household income threshold of R350,000. The merging of the two rates is assumed to occur smoothly year on year to 2023. For the purposes of this research, therefore, it is assumed that the funding rate of senior students increases by 5% per annum so that the funding rate in 2020 is 40%, in 2021 is 45%, in 2022 is 50% and in 2023 is 55% (see Table 1).

The NSFAS financial eligibility rate for TVET colleges is forecast to remain the same as the 2019 figure of 53% of registrations.

Applying these rates to the data in Table 11, produces an estimate of NSFAS funded university students to 2025 as reported in Table 16.

As it has been shown that demand far outstrips supply in TVET colleges, the number of NSFAS fundable students at TVET colleges will simply be the fundable rate (53%) times the number of places on offer (570,000). These numbers are captured in column 8 of Table 16, thus providing

**Table 16: Forecast number of bachelor and diploma students at universities and the number fundable by NSFAS for the period 2019-2025**

Year	FTEN university Students	% NSFAS fundable	Senior university Students	% NSFAS fundable	Total university students (2)+(4)	NSFAS fund-able university students (2)*(3)+(4)*(5)	Total NSFAS fundable TVET students (0.53*570,000)	Total NSFAS fundable students (7)+(8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
2019	171,584	55	668,290	35	<b>839,874</b>	328,273	<b>302,100</b>	<b>630,373</b>
2020	158,275	55	668,290	40	<b>826,565</b>	354,367	<b>302,100</b>	<b>656,467</b>
2021	168,966	55	668,290	45	<b>837,256</b>	393,662	<b>302,100</b>	<b>695,762</b>
2022	167,713	55	668,290	50	<b>836,003</b>	426,387	<b>302,100</b>	<b>728,487</b>
2023	170,206	55	668,290	55	<b>838,496</b>	461,173	<b>302,100</b>	<b>763,273</b>
2024	176,359	55	668,290	55	<b>844,649</b>	464,557	<b>302,100</b>	<b>766,657</b>
2025	182,414	55	668,290	55	<b>850,704</b>	467,887	<b>302,100</b>	<b>769,987</b>

The increase in the maximum household limit for financial eligibility, will likely increase demand for bursary support but the extent of changes is still uncertain. Consequently, lower and upper limits on funding needs are estimated as follows: the lower estimate is calculated using the minimum of forecast demand or DHET projected supply at each level (bachelors, diploma, N4 and L2 plus N1) (this is the number reported in Table 16, column 9). The higher estimate is based on the maximum of forecast demand or DHET projected supply at each level (bachelors, diploma, N4 and L2 plus N1) levels. That is, based on an assumption that all forecast demand at each level is met. In both cases, the historic take up rate of suitably qualified candidates of 68.5% is assumed to persist in the future.

A final extreme limit is calculated using the higher limit figures plus the maintenance of cumulative latent demand at current levels. This, effectively, assumes that those that chose not to participate in PSET in the past will now be settled elsewhere and will not consider joining PSET at this stage, whilst those that are just exiting the basic education system will take advantage of the improved funding mechanisms offered by NSFAS, such that all those suitably qualified will progress to PSET. Thus, it is assumed that the current take-up rate for successful NSC learners increases from 68.5% to 100%. In addition, it is assumed that the current take-up rate of 27% for grade 10 and 11 learners to progress to TVET college increases to 50%. In the unlikely event that the take up rate of grade 9 school leavers grows even more, this 'extreme' forecast provides a theoretical maximum participation and cost measure against which actual delivery can be assessed. The forecast student numbers provide a guide as to how close the country will be to its NDP targets.



**Table 17: University NSFAS funded student numbers under different demand and supply assumptions**

Year	Total university numbers under lower assumptions	Additional university numbers to meet full demand	Total university numbers under higher assumptions (2)+(3)	Additional university numbers if uptake increases from 68.5% to 100%	Total university numbers under extreme assumptions (4)+(5)
(1)	(2)	(3)	(4)	(5)	(6)
2019	<b>839,874</b>	37,123	<b>876,997</b>	104,361	<b>981,358</b>
2020	<b>826,565</b>	23,205	<b>849,770</b>	90,747	<b>940,517</b>
2021	<b>837,256</b>	34,385	<b>871,641</b>	101,682	<b>973,323</b>
2022	<b>836,003</b>	33,075	<b>869,078</b>	100,403	<b>969,481</b>
2023	<b>838,496</b>	35,682	<b>874,178</b>	102,951	<b>977,129</b>
2024	<b>844,649</b>	42,116	<b>886,765</b>	109,246	<b>996,011</b>
2025	<b>850,704</b>	48,449	<b>899,153</b>	115,440	<b>1,014,593</b>

**Table 18: TVET NSFAS funded student numbers under different demand and supply assumptions**

Year	Total TVET numbers under lower assumptions	Additional TVET numbers to meet full demand	Total TVET numbers under higher assumptions (2)+(3)	Additional TVET numbers if uptake increases from 68.5% to 100%	Total TVET numbers under extreme assumptions (4)+(5)
(1)	(2)	(3)	(4)	(5)	(6)
2019	<b>570,000</b>	52,127	<b>622,127</b>	137,090	<b>759,217</b>
2020	<b>570,000</b>	56,877	<b>626,877</b>	141,997	<b>768,874</b>
2021	<b>570,000</b>	49,214	<b>619,214</b>	138,723	<b>757,937</b>
2022	<b>570,000</b>	61,476	<b>631,476</b>	146,555	<b>778,031</b>
2023	<b>570,000</b>	68,876	<b>638,876</b>	153,164	<b>792,040</b>
2024	<b>570,000</b>	75,105	<b>645,105</b>	157,861	<b>802,966</b>
2025	<b>570,000</b>	80,235	<b>650,235</b>	160,729	<b>810,964</b>

For university students, the costs of NSFAS funding support is based on the average fee and allowance figures for 2018 escalated each year by 5% per annum. The 2019 figure includes the elimination of the DHET subsidies for increased fees that have been in place since 2017 and which have been removed in 2019. In 2019 this equates to an average cost of a university student for fees and allowances of R65,810.

For TVET students, the costs of NSFAS funding support are based on 2019 DHET payments for fees and allowances that were announced in December 2018. The total average cost (fees plus allowances) of a TVET student in 2019 is R49,350. As NSFAS only funds 20% of tuition fees, the average cost per TVET student for fees plus allowances for NSFAS is R21,910. As with university costs, this figure is escalated by 5% per annum to account for inflation.

The total forecast cost figures to NSFAS, assuming the annual 5% increase in fees and allowances, for the period 2019-2025 are summarised in Table 19.

**Table 19: Forecast Costs of NSFAS Bursary Support for Low, High and Extreme forecast numbers of eligible students.**

Date		Total sector registrations			Total NSFAS funded			Total NSFAS cost (R bn)		
		Lower	Higher	Extreme	Lower	Higher	Extreme	Lower	Higher	Extreme
2019	University	839,874	876,997	981,358	328,273	348,690	406,089	21,604	22,947	26,725
	TVET	570,000	622,127	759,217	302,100	329,727	402,385	6,619	7,224	8,816
	<b>Total</b>	<b>1,409,874</b>	<b>1,499,124</b>	<b>1,740,575</b>	<b>630,373</b>	<b>678,417</b>	<b>808,474</b>	<b>28,223</b>	<b>30,172</b>	<b>35,541</b>
2020	University	826,565	849,770	940,517	354,367	367,130	417,041	23,321	24,161	27,445
	TVET	570,000	626,877	768,874	302,100	332,245	407,503	6,619	7,279	8,928
	<b>Total</b>	<b>1,396,565</b>	<b>1,476,647</b>	<b>1,709,391</b>	<b>656,467</b>	<b>699,375</b>	<b>824,544</b>	<b>29,940</b>	<b>31,440</b>	<b>36,374</b>
2021	University	837,256	871,641	973,323	393,662	412,574	468,499	25,907	27,151	30,832
	TVET	570,000	619,214	757,937	302,100	328,183	401,707	6,619	7,190	8,801
	<b>Total</b>	<b>1,407,256</b>	<b>1,490,855</b>	<b>1,731,260</b>	<b>695,762</b>	<b>740,757</b>	<b>870,206</b>	<b>32,526</b>	<b>34,342</b>	<b>39,633</b>
2022	University	836,003	869,078	969,481	426,387	444,578	499,800	28,061	29,258	32,892
	TVET	570,000	631,476	778,031	302,100	334,682	412,356	6,619	7,333	9,035
	<b>Total</b>	<b>1,406,003</b>	<b>1,500,554</b>	<b>1,747,512</b>	<b>728,487</b>	<b>779,260</b>	<b>912,156</b>	<b>34,680</b>	<b>36,591</b>	<b>41,927</b>
2023	University	838,496	874,178	977,129	461,173	480,798	537,421	30,350	31,641	35,368
	TVET	570,000	638,876	792,040	302,100	338,604	419,781	6,619	7,419	9,197
	<b>Total</b>	<b>1,408,496</b>	<b>1,513,054</b>	<b>1,769,169</b>	<b>763,273</b>	<b>819,402</b>	<b>957,202</b>	<b>36,969</b>	<b>39,060</b>	<b>44,565</b>
2024	University	844,649	886,765	996,011	464,557	487,721	547,806	30,572	32,097	36,051
	TVET	570,000	645,105	802,966	302,100	341,906	425,572	6,619	7,491	9,324
	<b>Total</b>	<b>1,414,649</b>	<b>1,531,870</b>	<b>1,798,977</b>	<b>766,657</b>	<b>829,627</b>	<b>973,378</b>	<b>37,191</b>	<b>39,588</b>	<b>45,375</b>
2025	University	850,704	899,153	1,014,593	467,887	494,534	558,026	30,792	32,545	36,724
	TVET	570,000	650,235	810,964	302,100	344,625	429,811	6,619	7,551	9,417
	<b>Total</b>	<b>1,420,704</b>	<b>1,549,388</b>	<b>1,825,557</b>	<b>769,987</b>	<b>839,159</b>	<b>987,837</b>	<b>37,411</b>	<b>40,096</b>	<b>46,141</b>

## 8. Results Summary and Considerations for Policy

- At the bachelor level:
  - o There is sufficient planned capacity in the system to meet forecast demand;
  - o The forecasts indicate that there will be unfilled bachelor places at some or all the public universities by 2025.
- At the diploma level:
  - o There is insufficient planned public capacity<sup>21</sup> in the system to meet forecast demand of around 30,000 places per annum;
  - o The cumulative latent unmet demand will increase from 400,000 places in 2017 to 800,000 by 2025.
- At the N4 level:
  - o At TVET colleges, there is insufficient planned capacity in the system to meet forecast demand by around 40,000 places per annum;
  - o The cumulative latent unmet demand will increase from 260,000 places in 2018 to 460,000 by 2025.
- At the lowest entry level for TVET colleges, L2 and N1:
  - o There is insufficient planned capacity in the system to meet forecast demand by around 100,000 places per annum;
  - o The cumulative latent unmet demand will increase from 3m places in 2017 to 6.4m by 2025;
  - o As the lowest entry point to PSET, the data can also be used to estimate the impact of inadequate provision on the number of NEETs in society.
- Forecast university student numbers on forecast demand levels rise from 839,000 in 2019 to 850,000 in 2025.
- If future demand rises due to the more generous levels of NSFAS funding, the maximum number of university students will rise to just over 1m in 2025.
- Under the same increase in demand assumptions, TVET college numbers will rise to 810,000 in 2025.
- Both the university and TVET numbers under the 'extreme' forecast assumptions fall far below the National Development Plan targets of 1.62m university places and 1.25m TVET college places by 2030.
- The cost to NSFAS of the three assumption sets, in 2025 are forecast as R37bn (low), R40bn (high) and R46bn (extreme), respectively.
- If DHET's targets are met, then NSFAS funding for university students will be five times that of TVET students by 2025.
- Remembering that 80% of TVET fees are paid directly to colleges by DHET, and if these costs are factored into total cost, the funding to the university sector is approximately double that for the TVET sector.
- The balance of places and funding will have to be rethought if National Development Plan targets are to be realised.
- If the current balance of supply numbers is maintained, then a possible policy response to alleviate the forecast imbalance between demand and supply might be to increase the availability of bridging courses from diploma to bachelor courses. To some small extent this would relieve the forecast demand pressure on TVET colleges.

<sup>21</sup> Private provision may well help to meet the demand but as students at these institutions are currently excluded from receiving NSFAS funding, such provision will not be available to poor and working-class applicants.

- The forecast figures reflect a marked increase in NEET numbers over the next decade. Not only is this contrary to the NDP, but it also creates a ticking social time bomb. Policy responses need to go far beyond a simple recasting of university and TVET college numbers, although this would clearly be an important first step.

