

ENTRY #634**UNPRICED AND UNPREPARED: APPLYING ACTUARIAL DISCIPLINE TO SOUTH AFRICA'S STUDENT FUNDING CRISIS***Category: Undergraduate**Word count: 1951 words (excluding references)***1. Introduction: The annual “surprise”**

Every February, South Africa's Finance Minister stands at a podium and reveals how much bigger NSFAS's shortfall has grown since the year before. R2.5 billion. Then R5 billion. R13 billion. R15 billion. A projected R33 billion by 2029 if nothing changes (Manamela, 2026). Each year, the number is reported like breaking news. It should not be. Any actuary looking at this trajectory would have called it years ago. That is not because the scheme spends too much, but because nobody has ever actuarially valued what it owes.

Here is the reframe this essay makes: NSFAS is not, and has never been treated as, what it actually is. Since 2018 it has funded qualifying students through non-repayable bursaries. This is a deliberate, non-negotiable redress commitment, not a debt to be recovered. Structurally, that makes it a pay-as-you-go social benefit scheme, no different in principle from a state pension. The government makes a promise, and must fund it out of future revenue, indefinitely, for as long as the promise stands. Every pension fund in the country is legally required to actuarially value that kind of promise against its funding base. NSFAS has never been held to the same standard.

This essay applies that actuarial lens to South Africa's student-financing crisis. It diagnoses NSFAS as an unvalued liability scheme, tests what Australia's HECS-HELP and England's Plan 2 loans (genuine contributory systems) can and cannot teach a non-contributory one and proposes a funding model built on actuarial forecasting rather than annual surprise.

2. NSFAS as an unvalued liability scheme

NSFAS was established under Act 56 of 1999 to redress the near-total exclusion of Black, Indian, and Coloured students from higher education under apartheid, when no coordinated national funding mechanism existed for disadvantaged students (Wangenge-Ouma, 2012). For its first two decades it operated as a loan scheme. In December 2017, following sustained student protest and the Heher Commission's findings, government converted NSFAS into a fully subsidised, non-repayable bursary for qualifying students from poor and working-class households (DHET, 2018), a

deliberate policy choice to make redress unconditional, not contingent on a graduate's future earnings.

That choice is not this essay's concern. What follows it is. A bursary scheme funds every entitlement it grants, indefinitely, out of future fiscal allocation, and the size of that liability grows independently of the funding decided for it, driven by matriculation numbers, enrolment growth, and policy extensions such as the N+1 allowance (an extra year of funding beyond a qualification's minimum duration). This is precisely the structure of a defined benefit pension promise: government commits to pay and must reserve against a liability that compounds over time.

Every pension fund in South Africa is legally required, under the Pension Funds Act, to undergo periodic actuarial valuation, projecting liabilities forward and flagging funding gaps before they become a crisis. NSFAS has never been subject to an equivalent discipline. Its shortfall trajectory, R2.5bn, R5bn, R7bn, R13bn, R15bn, a projected R33bn by 2029 (Manamela, 2026) is not a sequence of surprises. It is the visible compounding of a liability nobody was required to value in advance.

3. What genuine contributory systems can (and cannot) teach a non-contributory one

If NSFAS is a pension promise with no contribution and no valuation, Australia's HECS-HELP is close to its structural opposite. Every student who takes on a Commonwealth-supported place effectively takes on a policy: a defined liability, indexed annually to CPI rather than a market interest rate, with repayment triggered only once income crosses a set threshold (currently AUD 54,435) and collected automatically through the tax system. Around 90 per cent of eligible students take it up (Australian Parliamentary Library; SBS, 2024). It is, in effect, a nationally compulsory insurance-style contribution: low-income years pay nothing, high-income years pay proportionally more, and the fund's actuaries can forecast recovery because the contribution mechanism is legally certain, even if any individual's timeline is not.

England's Plan 2 loans use the same income-contingent architecture but expose what happens when the underlying valuation is politically overridden. Repayment thresholds have been repeatedly frozen below inflation, most recently locked at £29,385 for three years from 2027, a move the Treasury itself justified as necessary "to ensure the sustainability of the student loan system" (Times Higher Education, 2025). Independent estimates put the share of loan value never recovered at 73 to 80 per cent (Taxing Wealth Report, 2024). The lesson is not that income-contingent recovery fails. It is that even a well-designed contributory valuation can be quietly re-priced by government for short-term fiscal relief, at the cost of the scheme's own actuarial integrity, precisely the discipline this essay argues NSFAS has never had in the first place.

Neither system transplants cleanly onto NSFAS, and for a reason more fundamental than policy preference: both are contributory. A HECS-style or Plan-2-style mechanism assumes a repayment base, a beneficiary who, upon crossing an income threshold, contributes back into the fund. NSFAS's post-2018 bursary structure has no such base by design; it was made non-repayable precisely because South Africa's poorest graduates cannot be assumed to reach a stable income threshold reliably, in a labour market where graduate unemployment materially undermines any repayment-based model (Yende, 2024). Importing HECS's collection mechanism onto NSFAS would therefore either quietly re-convert bursaries into loans, undermining the 2018 redress commitment this essay treats as non-negotiable, or fail to recover anything meaningful, replicating England's write-off problem without England's fiscal capacity to absorb it.

What is transferable is not the collection mechanism, but the discipline behind it: both Australia and England, whatever their political interference, run their schemes against an actuarially modelled liability, revalued and reported. NSFAS runs against an annual allocation decided in isolation from what it actually owes. That is the gap this essay closes next.

4. The solution: Introducing the NSFAS Actuarial Reserve Framework (NARF)

If NSFAS cannot be made contributory without abandoning its redress mandate, the reform must happen on the liability side, not the collection side. This essay proposes three actuarial disciplines, together forming what can be called the NSFAS Actuarial Reserve Framework (NARF).

First, mandatory periodic actuarial valuation, legislated the same way it is for pension funds. NSFAS's future liability projected qualifying-student numbers, average funding duration including N+1 extensions, and per-student cost inflation, should be modelled forward on a rolling multi-year basis and published alongside the annual budget, not discovered mid-year as a shortfall.

To illustrate: NSFAS's future liability in any given year can be expressed simply as $L = N \times D \times C \times (1 + i)^n$, where N is the number of qualifying students, D is average funding duration including N+1 extensions, C is current per-student annual cost, i is cost inflation, and n is years projected forward. Even this basic formulation, the kind of first principles projection taught in any introductory actuarial course, would have flagged the shortfall trajectory years before it became a "surprise." NSFAS does not need a complex model to begin; it needs any model, applied consistently and published. Applying this to NSFAS's own published figures makes the point concrete. NSFAS confirmed 660,039 students funded for the 2026 academic year, against a total 2026 allocation of R50.53 billion (National Assembly reply, 2026), implying an average cost of roughly R76,556 per student annually. Holding this cohort's cost constant and inflating it forward at a conservative 6 per cent a year to 2029, the same horizon the Minister himself uses,

produces a single year cost of approximately R60.2 billion, already well above the R33 billion figure currently cited as the "shortfall." But this understates the true position, because NSFAS's commitment to a funded student is not a single year's cost. It is a multi-year promise, typically the minimum duration of the qualification plus the N+1 allowance, averaging around four years. Applying that duration across the formula gives a projected accrued liability closer to R240 billion, not a single year's funding gap, but the total forward commitment NSFAS has already made to its current cohort. This is precisely the distinction a pension fund's actuarial valuation is designed to surface, and precisely the distinction NSFAS's own reporting currently does not make: the difference between next year's cash outflow and the full liability already incurred.

Second, a statutory contingency reserve, funded by ring-fencing a fixed percentage of each year's NSFAS allocation rather than spending it in full. An insurer holds capital against unexpected claims volatility; NSFAS currently holds none against unexpected enrolment volatility, which is precisely what caused the 2025 registration crisis when demand exceeded the year's allocation.

Third, scenario-based stress testing of the funding base itself, modelling what happens to the liability under higher matriculation pass rates, slower GDP growth, or extended qualification durations, the way an insurer stress-tests a portfolio against adverse mortality or lapse scenarios. This would let Treasury see a shortfall coming years in advance, as this essay's opening trajectory shows was entirely foreseeable.

A natural objection is that actuarial reserving assumes broadly predictable claims experience, whereas NSFAS's beneficiary numbers are set by political and policy decisions, matric pass rates, university capacity and cabinet-level funding announcements, not by a stable statistical process the way mortality or morbidity is. This is a fair distinction, but it does not defeat the case for valuation, it strengthens it. Insurers routinely reserve against liabilities driven by regulatory and behavioural change, not just biological randomness, new legislation, shifting consumer behaviour, catastrophe risk. The response to non-random uncertainty is not to abandon valuation, but to widen it: scenario-based stress testing, the third discipline proposed here, exists to price exactly this kind of policy-driven volatility.

NARF's outputs should not sit in an internal Treasury model. An annual NSFAS Sustainability Report disclosing projected liability, funding allocated, the reserve balance, and stress-test results, would let Parliament and the public assess the scheme's solvency the way pension fund members can assess theirs, closing the transparency gap that let five consecutive shortfalls arrive as annual surprises.

None of this requires converting NSFAS back into a loan scheme, and none of it asks beneficiaries to bear the risk their households already cannot absorb. The valuation burden shifts to where it belongs, the fiscus, which made the promise, and which, like

any institution managing a long-dated liability, is capable of planning for it. What Australia and England demonstrate is not a collection mechanism South Africa should copy, but a habit of actuarial seriousness South Africa has never adopted for a scheme it has run for over two decades.

5. Conclusion

Picture next February's podium again. If nothing changes, the Minister will announce a number larger than R33 billion, and it will again be reported as news. It will not be news to anyone who has read this essay.

NSFAS's crisis has never been a story about graduates, debt, or entitlement, it was never a loan book to begin with. It is a pay-as-you-go redress commitment that South Africa made deliberately in 2018 and has never valued the way it values every other long-dated public liability. Australia's HECS-HELP and England's Plan 2 loans cannot be transplanted onto a non-contributory scheme without quietly reversing that commitment. What they demonstrate instead is a discipline South Africa has never applied to NSFAS: actuarial valuation, reserving, and stress-testing against a liability that was always going to grow.

South Africa does not need to make NSFAS cheaper, and it does not need to make it repayable. What South Africa needs is not a name change for NSFAS, but a mechanism: the NSFAS Actuarial Reserve Framework, that finally treats a two-decade-old promise with the same actuarial seriousness the law already requires of every pension fund in the country.

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