

CREDIT OPINION

28 November 2023

Update



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RATINGS

Nanyang Technological University

Domicile	Singapore
Long Term Rating	Aaa
Type	LT Issuer Rating - Fgn Curr
Outlook	Stable

Please see the [ratings section](#) at the end of this report for more information. The ratings and outlook shown reflect information as of the publication date.

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Nanyang Technological University (Singapore)

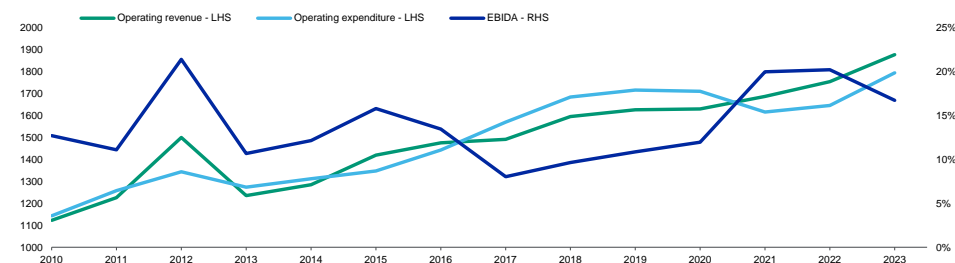
Regular update

Summary

The credit profile of [Nanyang Technological University](#) (NTU, Aaa stable) reflects the university's prudent financial management, underpinned by its healthy operating margin, ample internal liquidity and low debt levels. It also benefits from the strong institutional framework for higher education in [Singapore](#) (Aaa stable), whose government provides substantial funding for the university's operations and capital spending.

Exhibit 1

NTU has a track record of stable financial performance
 SGD million (LHS); % of operating revenue (RHS)



Years ending 31 March shown

Sources: NTU and Moody's Investors Service

Credit strengths

- » Robust institutional framework encompassing predictable government funding
- » Ongoing strengthening in academic reputation amid expansion of degree offerings
- » Significant liquidity and low indebtedness

Credit challenges

- » Cost pressures related to efforts to enhance its international profile
- » Adverse demographic trends that potentially impact medium-term enrollment

Rating outlook

The stable rating outlook reflects our expectation that NTU will continue to maintain a healthy operating margin, ample liquidity and a strong balance sheet over the foreseeable future. Along with the continued demonstration of ongoing support from the government—as well as indications of the likelihood of extraordinary support—we expect NTU's credit profile to remain consistent with an Aaa rating.

Factors that could lead to an upgrade

The final rating of Aaa and Baseline Credit Assessment (BCA) of aaa cannot be upgraded.

Factors that could lead to a downgrade

While unlikely, a reduction in the government's financial support to NTU or a change in the debt subsidy program for approved capital projects would indicate a lowering of the potential for extraordinary support and may lead to a downgrade of NTU's ratings.

NTU's ratings and/or BCA could also be downgraded if the university registered a sustained deterioration in its financial performance, a substantial rise in borrowing, or a significant reduction in cash and investments that leads to a material decline in the coverage of expenditure and/or debt outstanding.

Key indicators

Exhibit 2

Nanyang Technological University

(Fiscal Year Ending 3/31) [1]	2019	2020	2021	2022	2023
Operating Revenue (USD '000) [1]	1,198,928	1,188,451	1,235,492	1,299,250	1,391,581
EBIDA Margin (%)	11.0%	12.2%	20.1%	20.9%	17.5%
Total Cash and Investments (USD '000)	2,722,506	2,669,713	3,421,676	4,209,131	4,279,781
Total Cash and Investments to Operating Expenses (x)	2.2	2.2	2.9	3.5	3.2
Total Cash and Investments to Total Adjusted Debt (x)	21.4	28.6	36.7	8.7	8.8
Annual Debt Service Coverage (x)	76.4	33.7	47.3	39.1	17.3

[1] All ratios are based on 'Adjusted' financial data and incorporate our Global Standard Adjustments for Non-Financial Corporations.

Source: NTU and Moody's Investors Service

Profile

NTU was inaugurated in 1991 with the merger of the Nanyang Technological Institute and the National Institute of Education that same year. NTU has grown beyond the Nanyang Technological Institute's original mandate to train the bulk of Singapore's engineers to become a comprehensive, research-intensive university comprising five colleges and five autonomous institutes.

Currently one of Singapore's two largest autonomous universities, NTU has over 34,000 undergraduate and postgraduate students in the Engineering, Business, Science, Medicine, Humanities, Arts, & Social Sciences, and Graduate colleges. NTU is also home to world-renowned autonomous institutes – the National Institute of Education, the S Rajaratnam School of International Studies, and the Singapore Centre for Environmental Life Sciences Engineering – and various leading research centres such as the Nanyang Environment & Water Research Institute (NEWRI) and Energy Research Institute @ NTU (ERI@N).

The Board of Trustees is currently comprised of 19 members (including the Chair), largely occupying senior positions from academia, the public sector and government-linked entities, reflecting in part the university's linkages with the government. The Minister of Education has the power to appoint and remove members of the Board of Trustees under the Nanyang Technological University (Corporatisation) Act of 2005.

This publication does not announce a credit rating action. For any credit ratings referenced in this publication, please see the issuer/deal page on <https://ratings.moody.com> for the most updated credit rating action information and rating history.

Detailed credit considerations

NTU's BCA of aaa is in line with its Aaa issuer rating.

Baseline credit assessment

Close relationship with government, encompasses both financial support and oversight

NTU is characterized by its very strong operational, research and funding relationships with the Government of Singapore given the framework governing autonomous public universities in Singapore. Providing high-quality higher education is a premier policy goal of the Singapore government, reflecting its view that education is of key importance to the country's economic prospects.

The university's relationship with the government has evolved, with greater autonomy awarded to NTU since 2006. At that time, the government corporatised two of the country's public institutions, including NTU, to provide them with greater operating flexibility than they had previously as statutory corporations to help them better compete in the international arena.

Despite NTU's increased autonomy, the government's role in the university's activities remains prominent. Over the medium term, as the government faces competing pressures for spending on social services, the university sector could be required to increase its own funding of operations. Still, even under such a scenario, we do not believe support from the government would be materially reduced.

As with most traditional government-directed university systems, NTU's enrollment is largely determined by the government, which sets the number of student spaces through subsidies provided for enrolled students, particularly for domestic undergraduates. Tuition fees for undergraduate students must ultimately be approved by the government.

The university's Board of Trustees comprises of members who are leading representatives of Singapore's business community, professionals from the public and private sector, and academics, as well as one representative from the Ministry of Education (MOE).

The government is the primary source of the university's operating and capital funding. Funds are provided through three main grant programs: (1) an annual operating grant provided on a per student basis, (2) research grants, and (3) development grants. The government subsidizes capital projects through a mix of grants and debt-service subsidies.

Market profile: Strong student demand, reflecting evolving offerings and strengthening academic reputation

For much of Singapore's history as a country (founded in 1965), NTU (and its predecessor institution, Nanyang Technological Institute) was one of only two universities, although that number has expanded to five autonomous universities over the past 20 years. NTU has expanded beyond the original mandate of its predecessor institution to produce the bulk of the country's engineers to become a comprehensive university that spans more traditional academic offerings. This has helped it to further distinguish itself from the newer autonomous universities, as well as achieve more diverse sources of revenue such as research grants.

The development of NTU as a more comprehensive institution has coincided with its rapid rise in global rankings. NTU ranks 32nd in the Times Higher Education World University Rankings 2024, having climbed 142 places since 2011, and the world's best young universities below 50 years old. Similarly, NTU had climbed to 19th in the 2023 QS World University Rankings from 47th in 2012, although it has fallen to 26th in the 2024 rankings. The university has similarly high rankings from other providers such as US News and World Report, while several of its departments and schools are also highly regarded including its engineering and technology program which ranked 14th in the world according to the 2023 QS World University Rankings.

NTU has also proven to be responsive to market demands, especially in the context of Singapore's wider economic restructuring efforts, which has in turn supported enrolment growth. For example, in 2019, NTU announced a 50% increase in its intake for computing-related undergraduate programs versus 2015 levels, to meet the prospective demand for data scientists and cyber security specialists, and subsequently added degrees in data science and artificial intelligence. In line with the government's goals towards decarbonization and other sustainability-linked goals such as the development of a "Green Economy," as articulated in the Singapore Green Plan 2030, the university has introduced related academic programmes including second majors in sustainability for undergraduates.

It also unveiled new engineering specializations to match Singapore's aspirations in biotechnology and R&D, including concentrations in pharmaceutical manufacturing, intellectual property for bioengineering, and smart manufacturing and digital factory. In 2023,

NTU launched a pilot programme in partnership with Temasek Holdings and the National University of Singapore to build deep-tech ventures in areas such as energy transition, biotechnology and the future of computing.

Beyond degree-granting programs, NTU has also responded to the government's emphasis on "upskilling" to help working adults adapt to structural changes in the economy through an expansion of its continuing education programs; as part of this initiative, NTU has also introduced a "FlexiMasters" program to encourage participation, which has in turn bolstered revenue growth in recent years.

Additionally, in response to the government's push to expand the definitions of success beyond grades, NTU has launched the "NTU Talent Scholarship" with the aim of cultivating students' non-academic strengths. The scholarship will be awarded to undergraduates who are outstanding in their respective fields and have made a significant societal impact representing NTU or Singapore.

Operating performance: Operating margin remains robust driven by strong revenue growth

NTU has a favorable track record of financial performance with our estimate of earnings before interest, depreciation, amortization and other large noncash expenses (EBIDA) margin averaging 14.1% of operating revenue — adjusted to smooth out investment income — over the ten-year period between 2014 and 2023, consistent with an "A" score for operating performance.

For the fiscal year ended 31 March 2023 (fiscal 2023), NTU's EBIDA margin declined to around 17.5% from 20.9% in fiscal 2022 as the 9.0% rise in adjusted total expenditure outpaced the 7.0% increase in adjusted total revenue.

Expenditure growth was primarily driven by an increase in manpower expenditure and other expenses (i.e., teaching, research, administration, etc., but excluding capital expenditure) which grew by 6.0% and 23.6%, respectively. The rise in manpower expenses incorporates the university-wide compensation adjustment announced in 2021, as well as a pickup in the hiring of new faculty, both of which reflect cost pressures related to the university's efforts to sustain improving competitiveness and to meet the demand for its broadening course offerings. At the same time, higher spending on teaching, research and administration represents the effectively complete normalization from the pandemic as these expenses surpassed SGD500 million for the first time since fiscal 2018. Moreover, the increase also partly reflects the pass-through from higher inflation, particularly with regards to utility costs.

In mitigation, tuition and other student-related fees rose 5.4%, while research and other grants (excluding those from MOE) increased sharply by over 35%.

The uninterrupted growth of tuition fees continues to be underpinned by rising undergraduate and graduate enrollments, which rose by 0.8% and 14.1%¹, respectively. Similar to the expectations of other rated Singapore universities, NTU expects undergraduate enrollment to gradually decline over the medium-term, corresponding to the shrinking size of domestic undergraduate-age cohorts, underscoring the university's exposure to social risks from demographics. However, the university expects continued growth in graduate enrollment and international student enrollment to fully offset these pressures in the medium-term.

In addition to its degree-granting programs, NTU also expects greater revenue from its professional development and continuing education programs, which are reported separately from tuition and other fees. This is in line with the government's broader goals towards economic restructuring, in particular, "upskilling" and "lifelong learning" to prepare the labor force to avert structural/frictional job dislocation as the economy moves towards higher value-added manufacturing and services.

We expect the government to continue its strong support of the university's financial operations. In fiscal 2023, government grants (including amounts for operations, development and research, but excluding the amortization of deferred capital grants) amounted to SGD923 million (around 49% of adjusted operating revenue). We project government funding to continue to be composed of close to 50% of adjusted operating revenue and to remain a structural feature of NTU's credit profile, both in terms of its financial performance and potential implications for extraordinary support.

Over the next two to three years, we expect NTU's EBIDA margins to be sustained around current levels, somewhat lower than those recorded in fiscals 2021 and 2022 during which spending was curtailed by the pandemic amid the continued growth of enrollment and revenue more broadly. Going forward, upward adjustments to tuition fees for graduate courses in particular will help to offset ongoing increases in manpower expenditure and operational costs amid the persistence of inflation in Singapore². At the same time, there have been no major projects announced that would significantly increase the pipeline for capital expenditure.

Financial resources and liquidity: Substantial buffers provide strong financial flexibility

The university's holdings of cash and investments provide an ample buffer for its operations and substantial debt coverage, even after its maiden issuance under its multicurrency medium term note programme in 2021, allowing NTU an exceptional degree of financial flexibility. In fiscal 2023, total cash and investments experienced a marginal increase of around 1.6% to SGD5.8 billion (\$4.28 billion) from SGD5.7 billion (\$4.21 billion) the previous year. In the context of a higher interest rate environment, NTU's large cash holdings generated significantly higher interest income, which rose to \$17.7 million from only \$2.0 million over the same period.

Market volatility drove a recorded investment loss of SGD69 million in fiscal 2023, although it does not significantly reverse the outsized investment gains of SGD666.3 million and SGD267.4 million in fiscals 2021 and 2022, respectively. Notwithstanding the exposure of its investment portfolio to overseas assets and the relative stability of the Singapore dollar when compared to other countries in the region amid global capital flow volatility over the past couple of years, we do not expect exchange rate volatility to have a significant impact on NTU's balance sheet, partly reflecting the use of relevant hedging instruments.

The university's fundraising efforts have not been material to its financial performance, with donations making up around 3% of adjusted operating revenue in fiscal 2023, down slightly from 3.6% in fiscal 2022. However, the university's fundraising benefits from generous support from the government, which provides a matching grant of 1.5x to endowed donations for undergraduate programs and 1x for other donations.

NTU's liquidity remains solid, our calculations show total cash and investments covering expenditures by around 3.0x for a second consecutive year. Coverage of expenditure has been consistent with a score of 'Aaa' (>1.25x) since at least 2010, when the ratio was 1.5x. The improving trend of this coverage ratio over this period reflects the university's lengthy track record of stable investment performance, disrupted only by the global financial crisis.

Leverage and coverage: Low debt burden mostly supported by government subsidies

Since its maiden bond issuance of SGD650 million in October 2021, for which the university was able to lock in funding over the next 15 years at 2.185% per annum, NTU has not taken on any additional debt; moreover, there are no plans to pursue additional borrowings in the absence of major capital expansion plans. As such, we expect the ratio of cash and investments to total adjusted debt to remain around the same level through to at least fiscal 2025, which remains consistent with a 'Aaa' sub-factor score for this metric.

Annual debt service coverage, as defined by our estimate of EBIDA to the sum of interest expenses and scheduled principal payments (excluding the refinancing of short-term borrowings) declined to 17.3x in fiscal 2023 from 39.1x in the previous year, largely reflecting the commencement of coupon payments for NTU's bond issuance. We expect the coverage ratio to remain well above the 4x threshold for a 'Aaa' score for this subfactor through the next few years as the university currently does not intend to undertake any additional debt, as mentioned above, deterred in part by the high interest rate environment.

Although the university's strong financial performance provides ample coverage of debt servicing, the government actually absorbs much of the debt servicing burden through subsidies under the Debt-Grant Framework. For approved development projects, the government will fund 40% of the development costs upfront through a grant with the remainder of the costs borne by the university through debt. Debt support for principal and interest repayments are computed based on an assumed loan tenure according to the project category. The government will provide a sinking fund for 40% of associated servicing costs, i.e., maintenance and upkeep, while debt servicing will be split between tuition fees and additional subsidies specifically for borrowing costs. We expect that future bond issuance will be covered under the Debt-Grant Framework.

Financial policy and strategy: Long track record of quality of management

The 'Aaa' score for financial policy and strategy reflects the track record of the quality of the university's management, in part reflecting consistently strong margins, ample liquidity and low leverage, as well as the adherence to the government's broader economic restructuring strategies that have underpinned its ability to sustain growth in enrolment and revenue.

Data transparency is very high, with regular audits by a number of different bodies for various purposes, including a private auditor, the Ministry of Education and the Auditor-General's Office. In addition, NTU has adopted best practices as per the Code of Governance for Charities and Institutions of Public Character, including the disclosure of the extent of its compliance with the Code.

Enterprise risk management includes a framework of financial policies whose aim is to achieve and maintain a sustainable capital structure, reflecting extremely limited risk appetite. Associated rules include targets for conservative leverage (total debt/total assets <15%), ample liquidity coverage (minimum cash balance >3 months of operating expenditure) and capital adequacy (designated reserves >20% of total expenditure).

The utilization of reserves requires the approval of the Executive Committee or the wider Board of Trustees, depending on the limits. Policies are reviewed and endorsed by the Executive Committee while the Audit & Risk Committee is responsible for reviewing and endorsing statutory reports.

Extraordinary support considerations

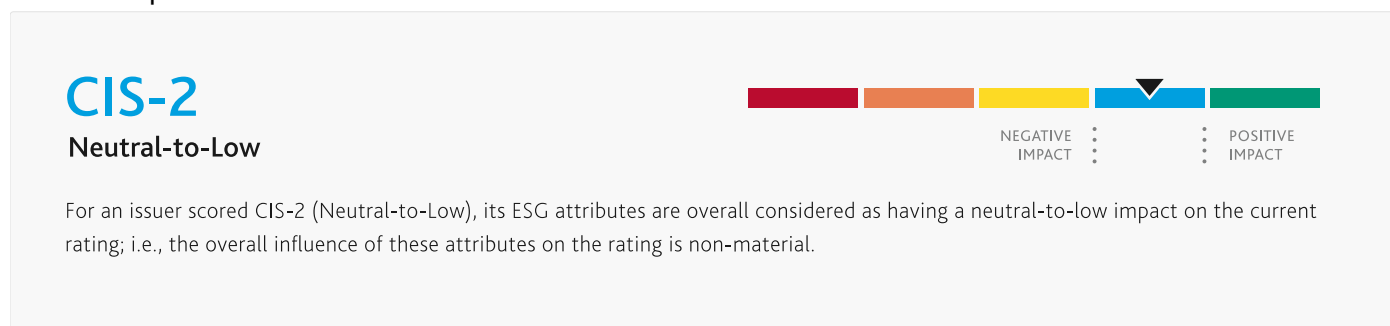
We assign a very high likelihood of NTU receiving extraordinary support from the Singapore government, reflecting our assessment of the risk posed to the government's financial reputation if the university were to experience acute liquidity stress. Our assessment of support is also based on NTU's prominent position in Singapore's university system and the importance of universities to the country's key policy goal of increasing participation in higher education, as well as economic restructuring more broadly. We also assess that there is a very high default dependence between the university and the government, reflecting the shared exposure to prolonged economic shock.

ESG considerations

Nanyang Technological University's ESG Credit Impact Score is CIS-2

Exhibit 3

ESG Credit Impact Score

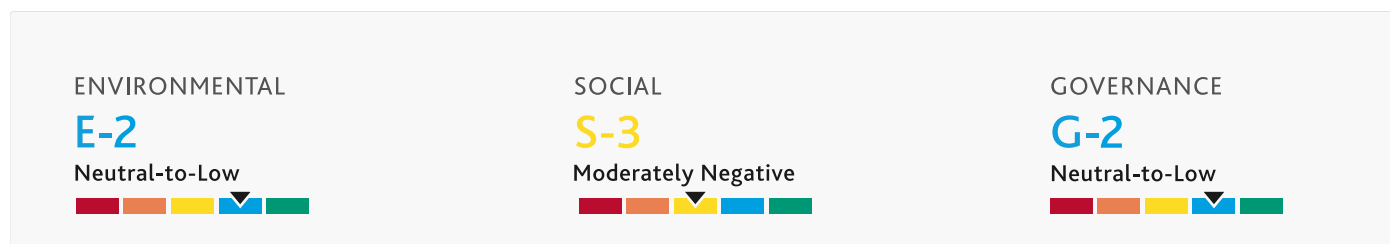


Source: Moody's Investors Service

NTU's ESG Credit Impact Score (**CIS-2**) reflects negative risks largely stemming from demographic factors, although these have been mitigated by strong enrollment trends for its postgraduate programs and among international students.

Exhibit 4

ESG Issuer Profile Scores



Source: Moody's Investors Service

Environmental

The **E-2** issuer profile score indicates that environmental risks are not material to NTU's credit profile. In particular, risks stemming from carbon transition, water management, natural capital and waste and pollution are low given the university's aim to achieve carbon neutrality by 2035, involving a significant reduction of net energy utilization, water usage and waste generation. Although Singapore is moderately exposed to physical climate risk stemming from the country's exposure to sea level rise over the long run as a low-lying island nation, the expected impact on the university is not expected to be as severe.

Social

The **S-3** issuer profile score broadly mirrors the risks associated with demographic and societal trends in Singapore. In particular, given Singapore's persistently low birthrates, the expected decline in the domestic undergraduate-age population is expected to weigh on enrollment beyond the next few years. However, these risks are mitigated by continued growth of international student enrollment, as well as its postgraduate programs, both of which are supported by the university's burgeoning academic reputation, especially in engineering and computing. As with other autonomous universities in Singapore, NTU continues to play a key role in the government's economic restructuring efforts, particularly through its provision of continuing education offerings; in addition, new academic offerings and degree programs reflect market demand for careers in emerging technologies and interdisciplinary areas such as sustainability. Extensive oversight of government includes extensive grant and loan assistance to students to ensure affordability, while Singaporean employees' mandatory participation in the government's compulsory provident fund scheme eliminates any potential risks with regards to pension liabilities.

Governance

The **G-2** issuer profile score captures NTU's excellent strategy and risk management, as well as for management credibility and track record. Strong governance has been demonstrated by the university's evolution from its initial focus on engineering and the sciences to a more comprehensive institution; alignment with government's broader strategic objectives is reflected in multi-year plans that help address and mitigate potential issues before they arise. Other governance factors do not represent material risks to the university's broader credit profile: NTU's organizational structure is typical for Singapore's autonomous universities, while its Board structure is robust with adequate oversight responsibilities.

ESG Issuer Profile Scores and Credit Impact Scores for the rated entity/transaction are available on Moody's.com. In order to view the latest scores, please click [here](#) to go to the landing page for the entity/transaction on MDC and view the ESG Scores section.

Rating methodology and scorecard factors

The principal methodologies used in this rating were the [Higher Education Methodology](#), published August 2021, and the [Government Related Issuers Methodology](#), published February 2020. Please see the Ratings Methodologies page on www.moody.com for a copy of this methodology.

The assigned BCA of Aaa is one notch above the scorecard-indicated outcome.

Exhibit 5

Nanyang Technological University

Scorecard Factors and Sub-factors	Value	Score
Factor 1: Scale (15%)		
Adjusted Operating Revenue (USD Million)	1,392	Aa
Factor 2: Market Profile (20%)		
Brand and Strategic Positioning	Aa	Aa
Operating Environment	Aaa	Aaa
Factor 3: Operating Performance (10%)		
EBIDA Margin	18%	Aa
Factor 4: Financial Resources and Liquidity (25%)		
Total Cash and Investments (USD Million)	4,280	Aaa
Total Cash and Investments to Operating Expenses	3.2	Aaa
Factor 5: Leverage and coverage (20%)		
Total Cash and Investments to Total Adjusted Debt	8.8	Aaa
Annual Debt Service Coverage	17.3	Aaa
Factor 6: Financial Policy and Strategy (10%)		
Financial Policy and Strategy	Aaa	Aaa
Scorecard-Indicated Outcome		aa1
Assigned BCA		Aaa

[1] Data is based on the most recent fiscal year available. Debt may include pro forma data for new debt issued or proposed to be issued after the close of the fiscal year.

[2] For non-US issuers, nominal figures are in US dollars, consistent with the Higher Education rating methodology.

Source: Moody's Investors Service

Ratings

Exhibit 6

Category	Moody's Rating
NANYANG TECHNOLOGICAL UNIVERSITY	
Outlook	Stable
Issuer Rating	Aaa
Senior Unsecured -Dom Curr	Aaa

Source: Moody's Investors Service

Endnotes

- On a full-time equivalent (FTE) basis.
- In its October 2023 Monetary Policy Statement, the Monetary Authority of Singapore projected headline inflation to come in at around 5.0% in 2023 and 3.0%-4.0% in 2024, far higher than the 1.2% average recorded in the preceding ten-year period between 2013 and 2022.

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