

CREDIT ANALYSIS

[Rate this Research](#)


Table of Contents:

RATINGS	1
SUMMARY RATING RATIONALE	1
RATING OUTLOOK	1
WHAT COULD CHANGE THE RATING - UP	1
WHAT COULD CHANGE THE RATING - DOWN	1
ISSUER PROFILE	2
KEY RATING CONSIDERATIONS	2
RATING HISTORY	6
ANNUAL STATISTICS	7
MOODY'S RELATED RESEARCH	10

Analyst Contacts:

TORONTO +1.416.214.1635

Jennifer A. Wong +1.416.214.3854
Assistant Vice President - Analyst
 jennifera.wong@moodys.com

Michael Yake +1.416.214.3865
Assistant Vice President - Analyst
 michael.yake@moodys.com

Aaron Wong +1.416.214.3633
Associate Analyst
 aaron.wong@moodys.com

LONDON +44.20.7772.5454

David Rubinoff +44.20.7772.1398
Managing Director - Sub Sovereigns
 david.rubinoff@moodys.com

This Credit Analysis provides an in-depth discussion of credit rating(s) for University of Toronto and should be read in conjunction with Moody's most recent Credit Opinion and rating information available on [Moody's website](#).

University of Toronto

Ontario, Canada

Ratings

University of Toronto

Category	Moody's Rating
Outlook	Stable
Bonds	Aa2

Summary Rating Rationale

The University of Toronto's (U of T) issuer and debt ratings are rated Aa2 with stable outlook. The Aa2 ratings reflect the university's consistent operating performance, moderate debt burden and strong balance sheet, balanced by significant unfunded pension liabilities. The university retains strong fiscal flexibility and is able to make ongoing adjustments to its budgets in order to ensure the posting of satisfactory fiscal outcomes. The ratings also take into account U of T's strong market position as Canada's largest post-secondary institution and a national and international leader in research.

Rating Outlook

The outlook is stable.

What Could Change the Rating - Up

Increased flexibility to set tuition fees, leading to higher revenue growth and increased financial flexibility, combined with growth in the university's endowment could apply upward pressure on the rating. If the university were to also successfully resolve its significant unfunded pension liabilities, this could put upward pressure on the rating.

What Could Change the Rating - Down

Sustained deterioration in financial performance and/or sustained losses in the asset value of the university's endowment, leading to a deterioration of the university's financial and liquidity profile, could exert downward pressure on the rating. An inability to address the significant unfunded pension liabilities could also put downward pressure on the rating.

Issuer Profile

The University of Toronto (U of T), Canada's largest post-secondary institution, is a comprehensive teaching and research university offering programs in 18 faculties, including Applied Science & Engineering, Arts & Science, Medicine, Law and Management. Enrolment exceeds 70,000 full-time-equivalents (FTE).

Key Rating Considerations

Government Relationship

Like other universities in the Province of Ontario, the University of Toronto was created by a separate act of the provincial legislature. While the province is ultimately responsible, constitutionally, for the delivery of post-secondary education, the University of Toronto operates at arm's-length from the province, as do other Ontario universities. The provincial government establishes broad strategies and targets for each university, provides operating grants and has the authority to control tuition fees, but each university retains autonomy to carry out its activities. While the Ontario Ministry of Training, Colleges and Universities monitors developments at individual universities and demands that universities be accountable, the "hands-off" approach to the university sector in Ontario is unlike that in some other Canadian provinces, such as Quebec and British Columbia, where the level of provincial control and oversight is considerably greater.

In our view, this lower level of provincial oversight and monitoring over Ontario universities, in and of itself, would be considered as a credit negative, increasing the likelihood that universities could experience financial difficulties without the province being aware of it; however, this relative independence of Ontario universities is balanced by prudent fiscal management. U of T's strong standalone characteristics including strong governance and management mitigate any concerns posed by the relative independence of Ontario universities from the provincial government.

Market Position

Continued Enrollment Growth Driven by Student Demand

Student demand for U of T's various programs has been strong in recent years, resulting in a consistent increase in enrolment. In the 2012-13 academic year, enrolment reached 70,311 on a full-time equivalent (FTE) basis, up from 62,301 in 2007-08, an increase of approximately 13%, or 2% on a compound annual growth rate (CAGR) basis. Due to the demographics of the Greater Toronto Area, the Province of Ontario's continued commitment to education including an announcement of 60,000 new post-secondary student spaces over 2011-12 through 2015-16, and the university's academic reputation, strong student demand is expected to be sustained, and the U of T projects that enrolment will reach over 78,000 FTEs by 2017-18.

High Proportions of Graduate Students and International Students

Reflecting provincial government priorities to provide funding support for graduate programs, graduate enrolment growth is expected to slightly outpace undergraduate enrolment growth over the near term. If the university's enrolment plan comes to fruition, graduate students would account for around 22% of total FTEs by 2017-18, up from the current level of around 20%. International enrolments, which currently account for about 14% of U of T's total enrolment (on a total students basis), are also expected to grow and account for roughly 16% of total enrolment by the 2017-18 academic year.

The relatively high proportions of international students and graduate students enrolled at U of T also reflect the university's excellent reputation and strong international profile. Additionally, U of T's high proportion of graduate students also indicates greater research intensity that supports the university's market position.

National Leader in Research

The University of Toronto, and its affiliated institutions, including several hospitals, continues to be the leader among Canadian universities in securing federal government research funding from the three granting councils and from other federal programs. Research funding from all sources is substantial and the university continues to rank highly in terms of research output. Over the last decade, total research grants and contracts earned by U of T have grown at a CAGR of roughly 5%, registering C\$391.5 million in 2012-13. In addition to this amount, there are also substantial research grants and contracts awarded to university faculty and administered by the affiliated teaching hospitals.

Research activities at the University of Toronto have benefited from increased federal funding, including through the Canada Research Chairs program, which provides funding for about 2,000 research chairs allocated to degree-granting institutions countrywide. At present, 248 chairs have been awarded to University of Toronto researchers, up from 238 chairs in 2011 and the most of any Canadian university.

Operating Performance

Prudent Practices Contribute to Consistent Outcomes

The University of Toronto's operating budget model, which involves a rolling five-year planning cycle, has helped the university produce generally consistent fiscal outcomes. In 2006-07, the university's operating budget process was modified to improve decision-making at the faculty level, and each academic division now submits its own annual multi-year budget plan according to overall budget guidelines. The university has by and large registered a surplus in recent fiscal years, except for 2008-09, where a C\$125.3 million investment loss realized during the global financial crisis contributed to a net loss of C\$169.2 million, and 2011-12, where a net loss was recorded with expense pressures related to pensions.

Return to Net Income in 2012-13 After Net Loss in 2011-12

In 2011-12, the university registered a net loss of C\$326 million after recording a sizeable increase in salaries and benefits expenses primarily related to the university's increased unfunded pension liabilities (discussed below).¹ The university returned to a net income position in 2012-13, registering a net income of C\$173.3 million. On a Moody's-adjusted basis, which makes adjustments to the university's annual fiscal outcomes to smooth the impact of investment returns and remove scholarships, fellowships and bursaries from both revenues and expenses, reflecting the "flow-through" nature of these expenses, U of T posted a net income of C\$162.6 million (6.9% of adjusted revenues). On a cash basis of accounting, funds from operations was C\$186.0 million, up from C\$56.1 million in 2011-12. U of T's operations have consistently generated significant funds from operations in recent years, allowing the university to provide internal financing for capital projects and limit debt financing requirements.

¹ The net loss was revised from C\$34.5 million reported previously given accounting changes introduced in 2012-13 and restated for 2011-12, which now fully record the change in the deficit in the university's pension plans and employee future benefits in the statement of operations.

Salaries and Benefits Costs Present Challenges

Due to the need to remain competitive with other top institutions and attract academic talent as well as an expansion in the number of faculty and staff, the University of Toronto continues to face challenges from rising costs of salaries and benefits, the university's largest expense item. This is further pressured by significant pension expenses arising from the university's pension plan deficit (discussed below) in recent years. While expense growth related to salaries and benefits has outpaced revenue growth in recent years, the university's prudent budgetary policies have helped to manage these cost pressures. With an increased emphasis on controlling expenses over the near term, we expect the university will continue to manage these pressures.

Debt Profile

Updated Debt Strategy

U of T's debt strategy was updated and approved by the Business Board in November 2012. This replaced the previous borrowing strategy, which stated that external borrowing capacity must not exceed 40% of net assets averaged over 5 years. The updated strategy is based on a debt burden ratio of 5%, which provided a debt limit of C\$1.4 billion at April 30, 2013. Further to this, the university will also consider the debt strategy and pension strategy combined. This updated strategy allows for a clearer picture of debt affordability considering both internal and external sources with less variation due to volatility of investment returns on net assets and also explicitly considers pension pressures.

Debt Burden Expected to Rise But Remain Moderate

Between 2001-02 and 2011-12, the university issued five debentures totaling C\$710 million to help finance capital outlays. As at April 30, 2013, net direct debt totaled C\$721.2 million, amounting to 30.5% of adjusted revenues, while interest costs consumed only 1.7% of adjusted revenue during the fiscal year. Given the university's new debt strategy, as at May 31, 2013, the university had about C\$286.1 million of unused borrowing capacity. If this amount of debt were issued, U of T's debt burden would increase to roughly 42% of revenues, a moderate level that remains manageable and in line with the current high rating. The university also sets aside principal and interest payments from departments into its Long-Term Borrowing Pool, a sort of internal sinking fund, to repay these bullet debentures.

Significant Unfunded Pension Liability Being Addressed

The university's pension fund position deteriorated in recent years, with the emergence of a larger unfunded liability due to the impact of poor investment performance on fund assets, longer life expectancy and other factors. As of April 30, 2013, the unfunded liability measured C\$1.12 billion using funding assumptions, down from C\$1.25 billion a year ago. U of T made a C\$150 million lump sum payment into the pension plan in June 2011, expects to make another by June 2014, and intends to substantially increase its annual special payments (budgeted from C\$27.2 million per year in 2010-11 to C\$77.2 million in 2013-14 and C\$97.2 million per year by 2015-16) to improve the current deficit position. In addition, the university has negotiated increases in employee pension contributions as part of recent labour negotiations with employee groups that have members in the university's pension plans.

U of T has applied for the provincial solvency funding relief program, and has received Stage 1 approval whereby the university has developed a plan to make its pension plans more sustainable. If the university were to receive Stage 2 approval (based on actuarial filing date July 1, 2014), this would allow the university to amortize special pension payments required to address the solvency deficiency over 10 years, i.e. until 2024, instead of five years. We recognize that the university has put in place plans to address its significant unfunded liabilities, including a strategy of increased special payments

approved by the Business Board, though special and lump sum payments will put pressure on its operating budgets. Addressing this significant unfunded position, however, will take several years to resolve and if Stage 2 approval were not granted, this would put significant pressure on the university's budget. We expect the university will be able to manage these pressures but we will continue to monitor the progress of the university's plan and the success in moving the pension plans to a more sustainable footing.

Balance Sheet Strength

U of T also has sufficient flexibility to finance fiscal requirements internally from its strong liquidity position, allowing them to access capital markets only when conditions are favourable.

Strong Balance Sheet Supported by Financial Resources

U of T's financial resources have grown over the medium term. Net cash and investments, which excludes externally restricted endowments and provides a measure of liquidity, totaled C\$1.6 billion at April 30, 2013, up from C\$929 million at the end of fiscal 2005-06. Net cash and investments now provide 2.3 times coverage of the university's net direct debt. This cushion provides an additional layer of safety for debenture holders. It also provides U of T with the flexibility to finance fiscal requirements internally, allowing them to access capital markets only when conditions are favourable.

Endowment Assets Hold Steady

At April 30, 2013, the university's endowment assets totaled C\$1.7 billion, up from C\$1.5 billion a year earlier. The university's Long-Term Capital Appreciation Pool, which includes assets of the endowment fund, experienced a gain of 11.4% in 2012-13 after recovering from a 31.0% loss in 2008-09 during the global financial crisis. Following the suspension of the endowment payout in 2008-09, the payout was restored in 2009-10 and has continued.

Boundless Fundraising Campaign Underway

The University of Toronto has traditionally been successful in its fundraising activities, and in November 2011, Boundless, a new fundraising campaign, was officially launched. With an ambitious goal of C\$2 billion for U of T and its federated universities, the new Boundless campaign is the largest in the history of Canadian universities. However, roughly half of the planned target had already been secured prior to the campaign's official launch. Over the fiscal year 2012-13, C\$211.1 million in new pledges and gifts were raised. With its large alumni base, strong reputation and fundraising experience, U of T is expected to continue its success in fundraising activities.

Governance and Management

The Governing Council oversees the academic, business and student affairs of the university. The Council is composed of 50 members, of whom 25 are internal members (including administrative staff, teaching staff and students) and 25 are external members (including alumni and provincial appointees). A variety of boards and committees oversee specific areas of the university's affairs, including a Business Board, a Planning and Budget Committee, an Audit Committee, a Pension Committee and a Committee on Academic Policies & Programs. U of T's academic mission is clearly articulated and the Governing Council possesses the tools necessary to effectively oversee and monitor management's activities.

The success of U of T in maintaining a strong balance sheet, while meeting academic goals, is underpinned by the development and execution of multi-year frameworks for academic and financial planning. These plans identify performance benchmarks and facilitate the development of operating budgets and capital plans. Internal financial management policies are comprehensive and support both

growth in the university's net asset position and the management of investment and debt related risks. University of Toronto Asset Management Corporation (UTAM), a wholly owned subsidiary, is tasked with managing the investment assets of the university's Long-Term Capital Appreciation Pool (which includes assets of the endowment fund), the Expendable Funds Investment Pool (including short- to medium-term funds) and assets of the university's pension plans. The university made changes to the governance arrangements of UTAM following the financial crisis to improve oversight over investment activities and has also modified its investment strategies, placing greater emphasis on risk management and stress-testing the portfolio from both a liquidity and an asset allocation standpoint.

Application of Joint-Default Analysis

As a reflection of Moody's joint-default analysis (JDA) methodology for government-related issuers, the university's Aa2 rating is composed of two principal inputs: a baseline credit assessment of aa2 and a high likelihood that the Province of Ontario (Aa2, stable outlook) would act to prevent a default by the university. High support is based on Moody's assessment of the risk posed to the province's reputation as a regulator of the university sector if U of T were allowed to default.

Rating History

University of Toronto

Date	Rating
May 2012	Aa2
August 2002	Aa1
January 2001	Aa2

Annual Statistics

University of Toronto

	2009	2010	2011	2012	2013
Debt Statement (C\$ Millions, as at April 30)					
Mortgages and Term Loans	46.0	22.8	15.3	13.9	12.5
Debentures	507.0	507.0	507.1	708.6	708.7
Net Direct Debt	553.0	529.8	522.4	722.5	721.2
Debt Trends (as at April 30)					
Net Direct Debt per Student (C\$, per FTE)	8,787	8,101	7,843	10,611	10,257
Net Direct Debt as a % of Revenue ^[1]	27.2	25.5	24.1	32.0	30.5

[1] Revenue is net of scholarship expenses and adjusted to smooth investment returns.

Market Demand Trends

Total Enrolment (FTE)	62,934	65,402	66,611	68,088	70,311
of which, undergraduate	50,336	52,286	53,226	54,334	56,157
Total Students	73,685	76,108	77,288	79,085	80,899
of which, undergraduate	59,794	61,632	62,666	64,120	65,612
of which, international	7,866	8,482	9,099	10,120	11,309
Undergraduate FTEs as a % of Total FTEs	80.0	79.9	79.9	79.8	79.9
Undergraduate Students as a % of Total Students	81.1	81.0	81.1	81.1	81.1
Selectivity (%) ^[1]	54.4	54.0	50.3	52.1	-
Matriculation (%) ^[2]	33.8	33.4	33.9	32.5	-
Average Entry Grade (%)	83.6	84.1	84.6	84.7	-

[1] Number of acceptances divided by number of applicants.

[2] Number of students enrolling divided by number of acceptances.

Statement Of Operations (C\$ Millions, Year Ending April 30)

Revenue					
Government Grants for Operations	650.6	678.0	691.0	702.2	703.6
Tuition Fees	636.4	701.3	764.3	847.4	944.7
Grants and Contracts	429.9	395.9	406.4	420.3	391.5
Investment Income (Loss)	(125.3)	124.9	135.6	102.9	151.3
Donations	82.1	57.7	63.7	59.9	83.7
Other	251.0	253.1	260.1	273.3	288.5
Total Revenue	1,924.7	2,210.9	2,321.1	2,406.0	2,563.3
Expenses					
Salaries and Benefits	1,224.0	1,319.5	1,459.9	1,805.1	1,443.0
Materials and Supplies	195.8	200.4	206.3	222.2	212.6
Scholarships, Fellowships and Bursaries	144.6	132.1	141.4	176.3	186.3
Amortization of Capital Assets	117.2	124.1	132.1	137.0	141.2
Interest Payments	33.7	32.4	32.6	34.3	39.9
Other	378.6	357.0	341.6	357.1	367.0

University of Toronto

	2009	2010	2011	2012	2013
Total Expenses	2,093.9	2,165.5	2,313.9	2,732.0	2,390.0
Net Income (Loss)	(169.2)	45.4	7.2	(326.0)	173.3
Adjustments					
Revenue ^[1]	2,031.7	2,077.8	2,168.3	2,258.7	2,366.3
Expenses ^[2]	1,949.3	2,033.4	2,172.5	2,555.7	2,203.7
Net Income (Loss)	82.4	44.4	(4.2)	(297.0)	162.6
Funds from operations	125.4	124.5	138.2	56.1	186.0
Free cash flow	62.1	123.0	42.0	(33.6)	129.1

[1] Revenue is net of scholarship expenses and adjusted to smooth investment returns.

[2] Net of scholarship expenses.

Fiscal Trends (Year Ending 4/30)

Provincial Funding as a % of Revenue ^[1]	32.0	32.6	31.9	31.1	29.7
Net Tuition as a % of Revenue ^{[1][2]}	24.2	27.4	28.7	29.7	32.1
Interest Expense as a % of Revenue ^[1]	1.7	1.6	1.5	1.5	1.7
Debt Service as a % of Revenue ^[1]	1.8	2.9	1.6	1.5	1.8
Total Gift Revenue ^[3]	131.5	77.2	85.1	83.5	118.3
Funds from Operations as a % of Revenue ^[1]	6.2	6.0	6.4	2.5	7.9
Annual Operating Margin (%)	4.1	2.1	(0.2)	(13.1)	6.9
Average Operating Margin (%)	5.4	3.9	2.0	(3.9)	(2.0)

[1] Revenue is net of scholarship expenses and adjusted to smooth investment returns.

[2] Tuition fees are net of scholarship expenses.

[3] Includes both donations recorded as revenue and as direct additions to endowments.

Consolidated Balance Sheet (C\$ Millions, as at 4/30)

Assets					
Cash and Short-term Investments	578.4	560.0	634.4	784.9	749.2
Accounts Receivable	119.9	105.8	104.8	84.7	82.7
Investments	1,633.1	1,965.0	2,078.4	2,095.6	2,403.6
Capital Assets	1,532.4	1,618.5	1,769.2	3,921.9	4,018.8
Other	45.2	43.6	53.7	68.7	65.0
	3,909.0	4,292.9	4,640.5	6,955.8	7,319.3
Liabilities					
Accounts Payable and Accrued Liability	182.8	234.4	248.0	278.1	298.4
Deferred contributions	328.4	357.9	370.3	371.2	372.7
Long-term Debt and Debentures ^[1]	558.9	528.2	526.8	727.7	726.0
Deferred Capital Contributions	831.0	881.7	986.3	1,018.3	1,076.4
Employee future benefit obligation ^[2]	390.8	490.7	612.7	1,867.0	1,857.6
	2,291.9	2,492.9	2,744.1	4,262.3	4,331.1

University of Toronto

	2009	2010	2011	2012	2013
Net Assets					
Unrestricted	(232.0)	(186.8)	(173.9)	(134.9)	(129.7)
Committed	179.0	136.4	90.6	(1,192.8)	(1,097.0)
Equity in Capital Assets	383.8	413.2	440.3	2,503.1	2,551.2
Endowments					
Externally Restricted	1,081.2	1,212.0	1,301.7	1,287.3	1,415.8
Internally Restricted	205.1	225.2	237.7	230.8	247.9
	1,617.1	1,800.0	1,896.4	2,693.5	2,988.2

[1] Includes bank overdraft in 2001.

[2] Includes accrued pension liability and employee future benefit obligation other than pension

Balance Sheet Trends (as at 4/30)

Total Cash and Investments (C\$ Millions)	2,211.5	2,525.0	2,712.8	2,880.2	3,152.8
Total Cash and Investments per FTE (C\$)	35,140	38,607	40,726	42,301	44,841
Net Cash and Investments ^[1]	1,130.3	1,313.0	1,411.1	1,391.4	1,626.9
Net Cash and Investments-to-Net-Direct-Debt (x)	2.0	2.5	2.7	1.9	2.3
Net Cash and Investments per FTE (C\$)	17,960	20,076	21,184	20,435	23,139
Net Cash and Investments-to-Operations (x)	0.6	0.6	0.6	0.5	0.7
Unfunded Pension Liabilities (C\$ Millions)	784.0	1,266.9	1,392.6	1,250.2	1,122.9
as % of Revenue	38.6	61.0	64.2	55.3	47.5
Annual Employer Contribution (C\$ Millions)	91.4	97.9	140.1	254.7	168.6
Annual Employer Contribution / Total Revenue	4.5	4.7	6.5	11.3	7.1

[1] Cash, short-term and long-term investments net of unspent debenture proceeds less externally restricted endowments.

Moody's Related Research

Credit Opinions:

- » [Canada, Government of](#)
- » [Ontario, Province of](#)

Special Comment:

- » [Resource-Rich Canadian Provinces : Strong Balance Sheets and Management Practices Mitigate Volatile Resource Revenues, May 2013 \(152020\)](#)

Credit Focus:

- » [Canadian Provinces of Ontario and Québec: High Debt Does Not Preclude High Ratings, June 2013 \(154994\)](#)

Statistical Handbook:

- » [Non-U.S. Regional and Local Governments, June 2012 \(141944\)](#)

Rating Methodologies:

- » [Methodology for Rating Public Universities, August 2007 \(103498\)](#)
- » [Government-Related Issuers: Methodology Update, July 2010 \(126031\)](#)

To access any of these reports, click on the entry above. Note that these references are current as of the date of publication of this report and that more recent reports may be available. All research may not be available to all clients.

Rate this Research



» contacts continued from page 1

Analyst Contacts:

TORONTO +1.416.214.1635

Michael Yake +1.416.214.3865
Assistant Vice President - Analyst
michael.yake@moodys.com

Aaron Wong +1.416.214.3633
Associate Analyst
aaron.wong@moodys.com

LONDON +44.20.7772.5454

David Rubinoff +44.20.7772.1398
Managing Director - Sub Sovereigns
david.rubinoff@moodys.com

Report Number: 159657

Author
Jennifer A. Wong

Production Associate
Atmaj Rane

© 2013 Moody's Investors Service, Inc. and/or its licensors and affiliates (collectively, "MOODY'S"). All rights reserved.

CREDIT RATINGS ISSUED BY MOODY'S INVESTORS SERVICE, INC. ("MIS") AND ITS AFFILIATES ARE MOODY'S CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES, AND CREDIT RATINGS AND RESEARCH PUBLICATIONS PUBLISHED BY MOODY'S ("MOODY'S PUBLICATIONS") MAY INCLUDE MOODY'S CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES. MOODY'S DEFINES CREDIT RISK AS THE RISK THAT AN ENTITY MAY NOT MEET ITS CONTRACTUAL, FINANCIAL OBLIGATIONS AS THEY COME DUE AND ANY ESTIMATED FINANCIAL LOSS IN THE EVENT OF DEFAULT. CREDIT RATINGS DO NOT ADDRESS ANY OTHER RISK, INCLUDING BUT NOT LIMITED TO: LIQUIDITY RISK, MARKET VALUE RISK, OR PRICE VOLATILITY. CREDIT RATINGS AND MOODY'S OPINIONS INCLUDED IN MOODY'S PUBLICATIONS ARE NOT STATEMENTS OF CURRENT OR HISTORICAL FACT. CREDIT RATINGS AND MOODY'S PUBLICATIONS DO NOT CONSTITUTE OR PROVIDE INVESTMENT OR FINANCIAL ADVICE, AND CREDIT RATINGS AND MOODY'S PUBLICATIONS ARE NOT AND DO NOT PROVIDE RECOMMENDATIONS TO PURCHASE, SELL, OR HOLD PARTICULAR SECURITIES. NEITHER CREDIT RATINGS NOR MOODY'S PUBLICATIONS COMMENT ON THE SUITABILITY OF AN INVESTMENT FOR ANY PARTICULAR INVESTOR. MOODY'S ISSUES ITS CREDIT RATINGS AND PUBLISHES MOODY'S PUBLICATIONS WITH THE EXPECTATION AND UNDERSTANDING THAT EACH INVESTOR WILL MAKE ITS OWN STUDY AND EVALUATION OF EACH SECURITY THAT IS UNDER CONSIDERATION FOR PURCHASE, HOLDING, OR SALE.

ALL INFORMATION CONTAINED HEREIN IS PROTECTED BY LAW, INCLUDING BUT NOT LIMITED TO, COPYRIGHT LAW, AND NONE OF SUCH INFORMATION MAY BE COPIED OR OTHERWISE REPRODUCED, REPACKAGED, FURTHER TRANSMITTED, TRANSFERRED, DISSEMINATED, REDISTRIBUTED OR RESOLD, OR STORED FOR SUBSEQUENT USE FOR ANY SUCH PURPOSE, IN WHOLE OR IN PART, IN ANY FORM OR MANNER OR BY ANY MEANS WHATSOEVER, BY ANY PERSON WITHOUT MOODY'S PRIOR WRITTEN CONSENT.

All information contained herein is obtained by MOODY'S from sources believed by it to be accurate and reliable. Because of the possibility of human or mechanical error as well as other factors, however, all information contained herein is provided "AS IS" without warranty of any kind. MOODY'S adopts all necessary measures so that the information it uses in assigning a credit rating is of sufficient quality and from sources MOODY'S considers to be reliable including, when appropriate, independent third-party sources. However, MOODY'S is not an auditor and cannot in every instance independently verify or validate information received in the rating process. Under no circumstances shall MOODY'S have any liability to any person or entity for (a) any loss or damage in whole or in part caused by, resulting from, or relating to, any error (negligent or otherwise) or other circumstance or contingency within or outside the control of MOODY'S or any of its directors, officers, employees or agents in connection with the procurement, collection, compilation, analysis, interpretation, communication, publication or delivery of any such information, or (b) any direct, indirect, special, consequential, compensatory or incidental damages whatsoever (including without limitation, lost profits), even if MOODY'S is advised in advance of the possibility of such damages, resulting from the use of or inability to use, any such information. The ratings, financial reporting analysis, projections, and other observations, if any, constituting part of the information contained herein are, and must be construed solely as, statements of opinion and not statements of fact or recommendations to purchase, sell or hold any securities. Each user of the information contained herein must make its own study and evaluation of each security it may consider purchasing, holding or selling.

NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY SUCH RATING OR OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY MOODY'S IN ANY FORM OR MANNER WHATSOEVER.

MIS, a wholly-owned credit rating agency subsidiary of Moody's Corporation ("MCO"), hereby discloses that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by MIS have, prior to assignment of any rating, agreed to pay to MIS for appraisal and rating services rendered by it fees ranging from \$1,500 to approximately \$2,500,000. MCO and MIS also maintain policies and procedures to address the independence of MIS's ratings and rating processes. Information regarding certain affiliations that may exist between directors of MCO and rated entities, and between entities who hold ratings from MIS and have also publicly reported to the SEC an ownership interest in MCO of more than 5%, is posted annually at www.moodys.com under the heading "Shareholder Relations — Corporate Governance — Director and Shareholder Affiliation Policy."

For Australia only: Any publication into Australia of this document is pursuant to the Australian Financial Services License of MOODY'S affiliate, Moody's Investors Service Pty Limited ABN 61 003 399 657AFSL 336969 and/or Moody's Analytics Australia Pty Ltd ABN 94 105 136 972 AFSL 383569 (as applicable). This document is intended to be provided only to "wholesale clients" within the meaning of section 761G of the Corporations Act 2001. By continuing to access this document from within Australia, you represent to MOODY'S that you are, or are accessing the document as a representative of, a "wholesale client" and that neither you nor the entity you represent will directly or indirectly disseminate this document or its contents to "retail clients" within the meaning of section 761G of the Corporations Act 2001. MOODY'S credit rating is an opinion as to the creditworthiness of a debt obligation of the issuer, not on the equity securities of the issuer or any form of security that is available to retail clients. It would be dangerous for retail clients to make any investment decision based on MOODY'S credit rating. If in doubt you should contact your financial or other professional adviser.