MOODY'S RATINGS

CREDIT OPINION
6 August 2024

Update

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RATINGS

Ontario Teachers' Pension Plan Board

Domicile	Canada
Long Term CRR	Not Assigned
Long Term Issuer Rating	Aa1
Type	LT Issuer Rating - Dom Curr
Outlook	Positive

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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Ontario Teachers' Pension Plan Board

Update to credit analysis

Summary

Ontario Teachers' Pension Plan Board's (OTPP) aa3 Baseline Credit Assessment (BCA) reflects its strong liquidity and predictability of future cash flows and a pension obligation that is over-funded after applying Moody's discount rate adjustments. On a Moody's adjusted basis, OTPP's funding ratio was 136% as of 31 December 2023. OTPP's credit profile also reflects a high proportion of high-risk assets (as defined in Moody's methodology) as well as growth in less-liquid and private market assets that help the fund meet its expected target return but reduce liquidity for creditors. Additionally, OTPP also has a moderate level of leverage and higher asset encumbrance and derivatives reliance compared to peers.

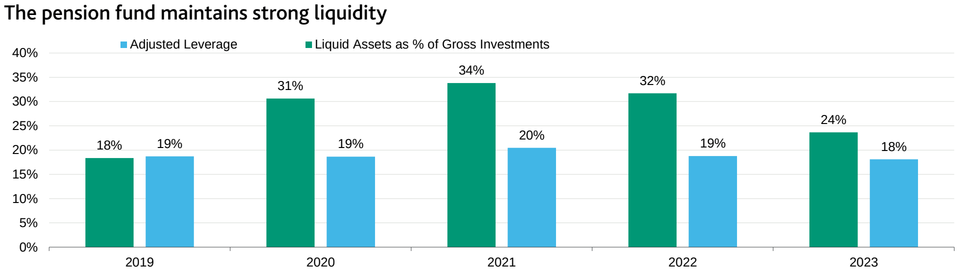
OTPP's co-sponsors are the Province of Ontario (Ontario, Aa3 positive) and the Ontario Teacher's Federation, which represents the four teacher associations in the province. As the province provides a salary to public teachers, for analytical purposes we view both sponsors as having the same creditworthiness as Ontario. OTPP's Aa1 long-term issuer rating is based on its aa3 BCA, and a high assumption of extraordinary support from its sponsor, Ontario. OTPP's Aa1 issuer rating benefits from an additional two notches of uplift from asset coverage because of a statutory framework that ranks OTPP's creditor obligations senior to the pension manager's pension obligations.

Ontario Teachers' Finance Trust (OTFT), a wholly-owned subsidiary of OTPP, has a backed senior unsecured rating of Aa1 and a backed commercial paper rating of Prime-1, reflecting the instrument-level guarantees provided by OTPP. OTFT adds a moderate degree of leverage by issuing commercial paper and term debt with the goal of diversifying funding sources and enhancing overall returns of the fund.

Exhibit 1

OTPP's adjusted leverage is moderate

The pension fund maintains strong liquidity



Fiscal year ending 31 December 2023. Liquid assets represent cash, short-term investments, securities purchased under reverse repurchase agreements, Government of Canada bonds and Canada Treasury bills.
Source: Company financials and Moody's Ratings

Credit strengths

» Creditors have an effective priority over pension obligations and benefit from strong asset coverage by high quality liquid assets

» An over-funded pension obligation, on a Moody's adjusted basis, which afford the pension manager greater financial flexibility compared to underfunded plans

» Flexible pension benefit obligation levers that share the risk of funding shortfalls with both contributors and retirees

» High expectation of extraordinary support from the Province of Ontario

» OTFT's issued instruments are unconditionally and irrevocably guaranteed by OTPP

Credit challenges

» Increasing cash outflows due to increasing longevity and decreasing active-to-retired member ratio, adding liquidity pressures from growing benefit payments

» Growing exposure to illiquid and private market assets helps the fund meet its expected target investment return, but reduces liquidity for creditors

» Higher level of funding sources secured with liquid assets, such as repos and short-sold securities, relative to peers which indicates liquid asset encumbrance

» Higher usage of derivatives relative to peers, which exposes the plan to greater liquidity, operational, and counterparty risk

Rating outlook

The positive outlook reflects the outlook of OTPP's sponsor and support provider, the Province of Ontario (Aa3 positive) as well as further strengthening of OTPP's funding profile.

Factors that could lead to an upgrade

» The key driver of an upgrade of OTPP's long-term issuer rating would be an upgrade of the Province of Ontario, as its support provider

» Adjusted leverage below 10% for a sustained period of time

» OTFT's ratings could be upgraded following an upgrade of OTPP's ratings

Factors that could lead to a downgrade

A ratings downgrade is unlikely given the positive outlook. However, the outlook on OTPP and OTFT's ratings could return to stable following:

» A return to stable outlook on the Province of Ontario

» Adjusted leverage above 25% for a sustained period of time

Key indicators

Exhibit 2

Ontario Teacher's Pension Plan Board	2023	2022	2021	2020	2019
Gross Assets (CAD millions)	310,203	316,320	321,549	278,945	263,887
Net Assets (CAD millions)	247,513	247,235	241,582	221,241	207,412
Gross Investments (CAD millions)	305,335	311,270	317,714	274,706	259,763
Alternative Investments % Gross Investments	11%	10%	7%	7%	7%
Fixed Income % Gross Investments	30%	32%	33%	39%	37%
Public Equities % Gross Investments	7%	6%	8%	9%	10%
Private Equity % Gross Investments	22%	22%	19%	17%	15%
Real Estate % Gross Investments	9%	9%	10%	11%	13%
Infrastructure % Gross Investments	13%	13%	8%	7%	7%
Inflation Sensitive Assets % Gross Investments	4%	4%	3%	3%	4%
Receivables % Gross Investments	4%	5%	11%	7%	6%
Repurchase Agreements (CAD millions)	23,795	26,316	25,529	14,185	19,821
Derivative Notionals (CAD millions)	735,090	566,319	729,770	550,649	576,053
Accrued Pension Benefits (CAD millions)	211,393	206,197	257,482	257,330	224,669
Reported Funding Ratio	117.1%	119.9%	93.8%	86.0%	92.3%
Adjusted Leverage	18%	19%	20%	19%	19%

Source: Moody's Ratings, company financials

Profile

OTPP was established by the Government of Ontario to manage the investments and administer the pension benefits of school teachers in the province. Its co-sponsors are Ontario and Ontario Teacher's Federation; the latter representing the four teacher associations in the province. As the province provides a salary to public teachers, for analytical purposes we view both sponsors as having the same creditworthiness as Ontario (Aa3 positive).

Detailed credit considerations

Funded Status - Excellent funding position with a conservative discount rate

Moody's considers the actuarial obligation of OTPP to be over-funded. As a pension fund, it has responsibility for the administration of benefits and in setting actuarial assumptions of the underlying obligation. At 31 December 2023, OTPP reported a funding surplus of 117% using a discount rate of 4.00%. We use the FTSE Pension Discount Curve and Liability Index as the standard discount rate to determine OTPP's pension benefit obligation to arrive at our adjusted funding ratio.

As of 31 December 2023, the discount rate under this Index was 4.83% compared to 5.02% as of 31 December 2022. On a Moody's adjusted basis, OTPP's funding ratio was 136% as of 31 December 2023, a slight deterioration from 137% as of 31 December 2022. We view the current higher-for-longer interest rate environment as favorable for OTPP's funding health.

OTPP has two funding levers that further support its strong funding profile; conditional inflation protection and contribution increases. Both these levers are key aspects of OTPP's Funding Management Policy. Conditional inflation protection benefits for credited service earned after 2009 are conditional on the plan's funded status. When the plan is in an underfunded position, on a going concern basis, the co-sponsors can reduce the level of inflation adjustments retirees receive. The pension obligation's long duration is driven by the long life expectancy of its predominantly female teacher membership. The fact that teachers live longer than average working Canadians, and low eligible retirement age of members, means that changes in expected benefit increases can produce large changes in the value of the benefit obligation. Over time, this lever will become more valuable as service credited after 2009 becomes a larger part of the obligation. Since January 1, 2018, contribution levels have been at the desired target level of 11% of pay per plan sponsor and 100% inflation protection levels have been provided on all benefits.

OTPP's has an initial funding ratio score of aaa to which we make no adjustments.

Liquidity - Benefits of liquid fixed income portfolio and stable cash flows offset by funding sources that encumber assets

As of 31 December 2023, OTPP had good coverage of liquid assets to cash obligations. The ratio of discounted liquid asset inflows to recognized obligation outflows was down from 260% at the end of 2022 to 224% at the end of 2023 but still at a strong level. The decline was due to lower holdings of level 1 fixed income securities, cash and investment receivables.

As well, plan members are legally obligated to become contributors to the plan; creating a very stable source of regular cash inflows. OTPP's active-to-retired plan members ratio has declined from 2.0 in the year 2000 to 1.2 in 2023. As the proportion of retired members rises, OTPP's benefit obligation will grow creating more liquidity pressure on the plan. In order to meet its net pension obligations, OTPP maintains sufficient income-based instruments in its investment portfolio that pay interest and dividends.

As a pension benefit obligation has an exceptionally long time horizon, we review its current cash flow pattern to determine coverage of creditor obligations. For 2023, OTPP's net cash outflow (benefit payments in excess of contributions) was approximately CAD4.3 billion. This outflow was more than offset by stable cash flows of CAD4.7 billion from interest and dividends as well as real estate operating income. In addition, further cash flow support was provided by CAD4.1 billion in realized gains.

OTPP uses relatively high levels of repo funding and short-sold securities compared to peers, resulting in above-average asset encumbrance and counterparty credit risk exposure. As at 31 December 2023, the proportion of gross assets funded by repos and short-sold securities was 7.6%, above the peer average of 6.2%. However, we note this proportion has fallen from 11.5% at the end of 2019.

OTPP has an initial liquidity score of aaa but we make a one-notch downward adjustment to aa1 to reflect that OTPP has higher levels of secured borrowings than its peers.

Asset Risk - High levels of less-liquid assets, although broadly diversified by geography and sector

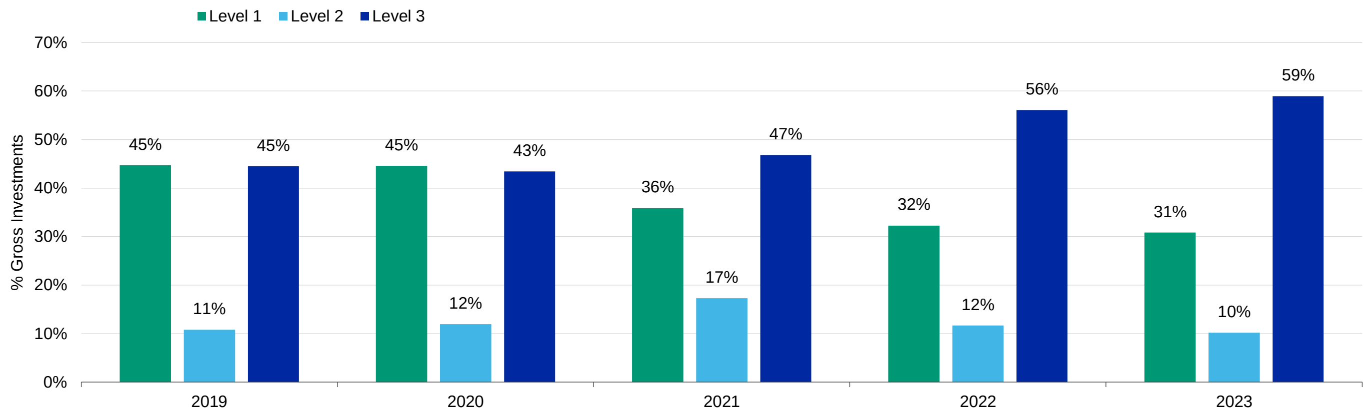
OTPP's ratio of high risk assets to gross assets was 75% as of 31 December 2023 which was in line with its peers. These assets are largely invested outside Canada and are broadly diversified across several asset classes and sectors. Moody's definition of high risk assets broadly comprises all investments other than investment-grade bonds and mortgage loans, including below-investment-grade and unrated bonds/loans, common and preferred stock equities, alternative investments such as private equity and hedge fund holdings, real estate assets, and other investments that are not classified on a pension manager's balance sheet.

At 31 December 2023, OTPP's investment assets were comprised of 30% fixed income, 7% public equity, 22% private equity, 9% real estate, and 13% infrastructure. In recent years, OTPP's investment portfolio has shifted toward less-liquid Level 3 assets such as real estate, infrastructure and private equity (Exhibit 3). In 2023, OTPP's Level 3 assets increased to 59% of gross investments from 56% in 2022. While these asset classes align to the pension manager's mandate to invest over a longer time horizon and offer attractive returns from a liquidity premium, they also add incremental liquidity and operational risks to the fund.

Exhibit 3

OTPP's encumbered funding sources require higher levels of Level 1 assets, but Level 3 assets have grown in recent years

Real estate, infrastructure and private equity align with OTPP's long time horizon



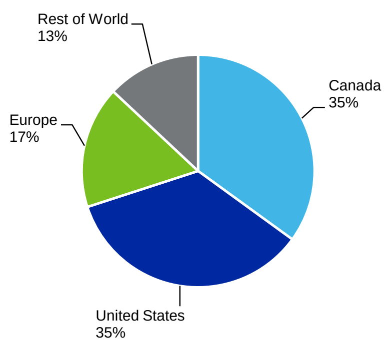
Data as of 31 December 2023

Source: Company Financials, Moody's Ratings

As of the same period, 65% of OTPP's investment portfolio was invested outside Canada (Exhibit 4) and is broadly diversified across several asset classes. The geographic diversification means that OTPP's cash flow generation in regions outside of Canada could be somewhat shielded from Canadian economic conditions that could affect its pension obligations and related contribution cash flows.

Exhibit 4

OTPP's investments are globally diversified



As of 31 December 2023

Source: Company financials and Moody's Ratings

OTPP's long investment horizon is a considerable advantage since it affords time to make portfolio shifts, particularly with less-liquid investments. For the year ended 31 December 2023, OTPP reported a 1.9% overall return on its investments primarily due to strong returns from public equities and credit which were offset by losses in infrastructure and real estate.

OTPP's initial asset risk score is ba2, to which we make a three-notch upward adjustment to reflect the benefits its diverse investment portfolio provides to its credit profile and serves to mitigate the incremental risks from a high level of less-liquid Level 3 assets. This results in an assigned score of baa2.

Financial Policy - Conservative financial policies and investment profile is natural hedge to creditor obligations

OTPP's financial policies are broadly conservative. It has good liquidity and risk management practices that mitigates the refinancing and counterparty risks associated with its modest portfolio leverage. OTPP hedges currency risks within certain portfolios and has natural currency hedges between its investments and funding. Over two-thirds of OTPP's investment portfolio is in USD or CAD which aligns with its creditor obligations, much of which is denominated in USD.

However, the pension manager employs greater use of derivatives and secured borrowing than its peers. OTPP uses derivatives for gaining exposures in their investment portfolio, carrying out absolute return strategies and for leverage and hedging purposes. The ratio of notional derivatives to gross assets was 2.4 times as of 31 December 2023 which was higher than the peer average of 1.0 times but in line with OTPP's long-term historical average of 2.0 times. While the derivatives usage is higher than peers, we view OTPP as having good liquidity and counterparty credit risk management policies. OTPP's manages its exposure to credit and counterparty risk through internal credit risk assessment processes, by primarily dealing with investment-grade counterparties and has policies to limit the maximum exposure to any individual counterparty.

Moreover, as of 31 December 2023, the pension manager is over-funded with a Moody's adjusted funding ratio of 136%. During the ow interest rate environment period of 2020-2021, the funding status had deteriorated at the margin to 97% as of 31 December 2020 but recovered to 101% as of 31 December 2021. Overall, we view the pension fund as having conservative financial policies and have assigned a “aa” financial policy score in line with the initial score.

Financial Profile

OTPP's scorecard-indicated Financial Profile Outcome is aa2 which incorporates a downward adjustment for Liquidity and an upward adjustment for Asset Quality. As OTPP's sponsor, Ontario's Aa3 long-term issuer rating is a constraint on OTPP's aa3 BCA as OTPP's BCA cannot be higher than Ontario's Aa3 rating. Therefore, the Scorecard-Indicated Outcome is aa3 and the BCA assigned to OTPP is aa3.

Support and structural considerations

High expectation of extraordinary support with a mandate as the exclusive pension manager of public school teachers in Ontario

Extraordinary support represents the probability that a government owner of a GRI would provide financial support, or other contractual protections, to a GRI to avoid a default on its debt obligations. The expectation of a continuation of ordinary support does not constitute extraordinary support and is instead considered in our assessment of the GRI's BCA.

As noted, OTPP has exclusive legal authority as the investment manager and provider of pension benefits for over 340,000 active and retired schoolteachers in Ontario as of 31 December 2023. The pension manager is a key element of the provincial government's employment system and an important contributor to the economy of Ontario. In our view, a default of OTPP would be politically embarrassing to the Province of Ontario and would have implications for the province’s own ability to access debt markets. As such, we believe the Province of Ontario would provide extraordinary support, financial or otherwise, to OTPP if necessary.

Creditors have an effective priority over pension obligations and therefore benefit from good coverage of high-quality liquid assets

OTPP's governing legislation does not explicitly define the priority of its unsecured creditors relative to its pension obligation. However, Moody's believes these obligations rank ahead of payments because Schedule 1 to the Teachers’ Pension Act places properly incurred liabilities to creditors ahead of accrued benefit entitlements of members, if the plan is wound up. As a result, OTPP's creditor and guarantee obligations rank senior to the amounts that become due to the pension plan beneficiaries and pari passu with other senior unsecured obligations.

As of 31 December 2023, OTPP had CAD310 billion in gross assets and CAD248 billion in net assets; which constitutes a loss absorbing cushion for the benefit of creditors. On a gross investment base of CAD305 billion, OTPP's investment portfolio is comprised of CAD12 billion of cash, money market instruments and reverse repos, CAD85 billion in investment grade fixed income securities and CAD21 billion in public equities. Its primary sources of leverage are repurchase agreements, securities sold short, term debt and commercial paper of CAD61 billion which is used to manage liquidity and augment investment return in a cost-effective manner while allowing it to retain economic exposure to government bonds. While this leverage strategy is higher than its peers, OTPP has an established track record of its use and has policies in place to mitigate liquidity and counterparty credit risks.

As at 31 December 2023, OTPP's leverage was 18% after adjusting for nettable repurchase agreements and derivatives that are not offset for accounting purposes. As noted previously, this results in two additional rating notches for the issuer and senior unsecured rating from the BCA.

ESG considerations

Ontario Teachers' Pension Plan Board's ESG credit impact score is CIS-2

Exhibit 5
ESG credit impact score

CIS-2

ESG considerations do not have a material impact on the current rating.

Source: Moody's Ratings

OTPP's ESG **CIS-2** score reflects the limited impact of impact of environmental, social and governance considerations on the current rating.

Exhibit 6
ESG issuer profile scores

ENVIRONMENTAL
E-3

SOCIAL
S-4

GOVERNANCE
G-2

Source: Moody's Ratings

Environmental

OTPP faces moderate exposure to environmental risk related to carbon-intensive investments in its portfolio, such as oil & gas, transportation and other utilities. As well, the fund's real estate and infrastructure portfolios are exposed to physical climate risk where assets could be damaged by extreme weather or rising sea levels. In addition, natural capital assets, such as agriculture, are used as hedge against inflation.

Social

OTPP faces high industry-wide exposure to social risks, primarily from changes in unemployment or immigration rates, which can impact contribution cash flows; however also from direct exposure to an aging population. OTPP also faces high industrywide risks related to cyber and personal data security, which raises the potential for a data leak of beneficiary information compared with pension managers that do not have such responsibility. These risks are mitigated by continued IT investments by the pension plan that are focused on threat prevention and detection.

Governance

OTPP faces low governance risks with governance practices that are in line with most standards within the Canadian financial services sector. This includes a defined risk appetite statement, risk and performance benchmarks and a professional board of directors and standing board control committees. OTPP has consistently maintained a high funding ratio due to a strong risk management function that stands out relative to its peers.

ESG Issuer Profile Scores and Credit Impact Scores for the rated entity/transaction are available on Moodys.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

Exhibit 7

Ontario Teachers' Pension Plan Board						
2023						
		Historical			Assigned	
	Factor Weights	Historic Ratio	Initial Score	Assigned Score	Key driver #1	Key driver #2
Funding Ratio*						
Net Assets / PBO	40%	136.0%	aaa	aaa	Benefit Flexibility	
Liquidity						
Liquidity Inflows / Outflows	20%	224.0%	aaa	aa1	Asset Encumbrance	
Asset Quality						
High Risk Assets / Gross Assets	20%	75.0%	ba2	baa2	Asset Class Diversification	Operational Risk
Financial Policy						
Financial Policy	20%	aa	aa	aa		
Financial Profile Outcome	**100%**		**aa3**	**aa2**		
Qualitative Notching						
Political Independence				0		
Corporate Behavior				0		
Scorecard-Indicated Outcome Before Constraint				**aa2**		
Consideration of:					**Comment**	
Sovereign Constraint (Y/N)				Yes		
Sovereign Rating				Aaa		
Sponsor Constraint (Y/N)				Yes		
Sponsor Rating				Aa3		
Scorecard-Indicated Outcome				**aa3**		

Source: Moody's Ratings

Ratings

Exhibit 8

Category	Moody's Rating
ONTARIO TEACHERS' PENSION PLAN BOARD	
Outlook	Positive
Baseline Credit Assessment	aa3
Issuer Rating -Dom Curr	Aa1
ONTARIO TEACHERS' FINANCE TRUST	
Outlook	Positive
Bkd Senior Unsecured	Aa1
Bkd Commercial Paper	P-1
ONTARIO TEACHERS' CADILLAC FAIRVIEW PROP TRT	
Outlook	Stable
Issuer Rating -Dom Curr	A1
Senior Unsecured	A1

Source: Moody's Ratings

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