

CREDIT OPINION

24 January 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 following ratings affirmation, outlook change to positive

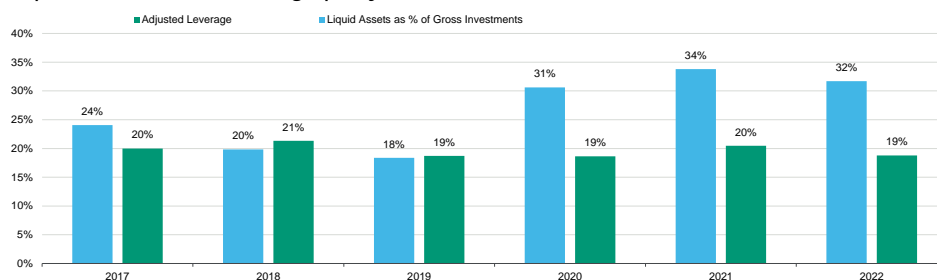
Summary

[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 further improved to 142% as of 30 June 2023 from 131% as of the same period the prior year. OTPP's credit strengths are offset by a high proportion of high-risk assets (as defined in Moody's methodology) including growth in less-liquid and private market assets that help the fund meet its expected target return but reduces liquidity for creditors; a moderate level of leverage; and higher asset encumbrance and derivatives reliance compared to peers.

OTPP's Aa1 long-term senior unsecured rating also reflects a high assumption of extraordinary support from its sponsor, the [Province of Ontario](#) (Ontario, Aa3 positive) which has a positive outlook since May 2023. OTPP's Aa1 long-term senior unsecured rating reflects its aa3 BCA as well as 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.

Exhibit 1

OTPP's adjusted leverage is moderate The pension fund maintains strong liquidity



Fiscal year ending 31 December 2022. 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 Investors Service*

[Ontario Teachers' Finance Trust](#) (OTFT), a wholly-owned subsidiary of OTPP, has an Aa1 senior unsecured long-term rating and its Prime-1 short-term rating which reflects 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.

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 change in 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 return to stable outlook

- » 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

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.moodys.com> for the most updated credit rating action information and rating history.

Key indicators

Exhibit 2

Ontario Teachers' Pension Plan Board	H1 2023	2022	2021	2020	2019	2018
Gross Assets (CAD millions)	308,611	316,320	325,308	278,945	263,887	260,901
Net Assets (CAD millions)	249,772	247,235	241,582	221,241	207,412	191,112
Gross Investments (CAD millions)	304,953	311,270	321,473	274,706	259,763	256,891
Alternative Investments % Gross Investments	10%	10%	7%	7%	7%	6%
Fixed Income % Gross Investments	31%	32%	32%	39%	37%	38%
Public Equities % Gross Investments	6%	6%	8%	9%	10%	9%
Private Equity % Gross Investments	23%	22%	19%	17%	15%	14%
Real Estate % Gross Investments	10%	9%	10%	11%	13%	12%
Infrastructure % Gross Investments	14%	13%	8%	7%	7%	7%
Inflation Sensitive Assets % Gross Investments	4%	4%	3%	3%	4%	4%
Receivables % Gross Investments	3%	5%	12%	7%	6%	10%
Repurchase Agreements (CAD millions)	18,177	26,316	25,529	14,185	19,821	28,280
Derivative Notionals (CAD millions)	935,714	566,319	729,770	550,649	576,053	1,248,662
Accrued Pension Benefits (CAD millions)	203,870	206,197	257,482	257,330	224,669	192,281
Reported Funding Ratio	122.5%	119.9%	93.8%	86.0%	92.3%	99.4%
Adjusted Leverage	17%	19%	20%	19%	19%	21%

Source: Moody's Investors Service, 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 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 30 June 2023, OTPP reported a net assets to pension benefit obligation ratio of 123% using a discount rate of 4.10%. We estimate OTPP's adjusted funding ratio on a financial statement basis after applying our standard discount rate adjustment to its pension benefit obligations which uses the [FTSE Pension Liability Index](#). As of 30 June 2023, the discount rate under this index was 4.92%. On a Moody's adjusted basis, OTPP's funding ratio further improved to 142% as of 30 June 2023 from 131% as of the same period the prior year.

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.

During the pandemic crisis, on a Moody's adjusted basis, OTPP's funding ratio deteriorated at the margin as interest rates decreased however the current higher interest rate environment is positive for the plan's funded status. 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 2022, OTPP had good coverage of liquid assets to cash obligations. The ratio of discounted liquid asset inflows to recognized obligation outflows was down from 359% at the end of 2021 to 259% at the end of 2022 but still at a strong level. The decline was due to lower holdings of reverse repos, equities, investment receivables and level 1 fixed income securities.

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 2022. 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 2022, OTPP's net cash outflow (benefit payments in excess of contributions) was approximately CAD3.8 billion. This outflow was more than offset by stable cash flows of CAD4.1 billion from interest and dividends as well as real estate operating income. In addition, further cash flow support was provided by CAD3.6 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 2022, the proportion of gross assets funded by repos and short-sold securities was 8.4%, above the peer average of 7.5%. 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.

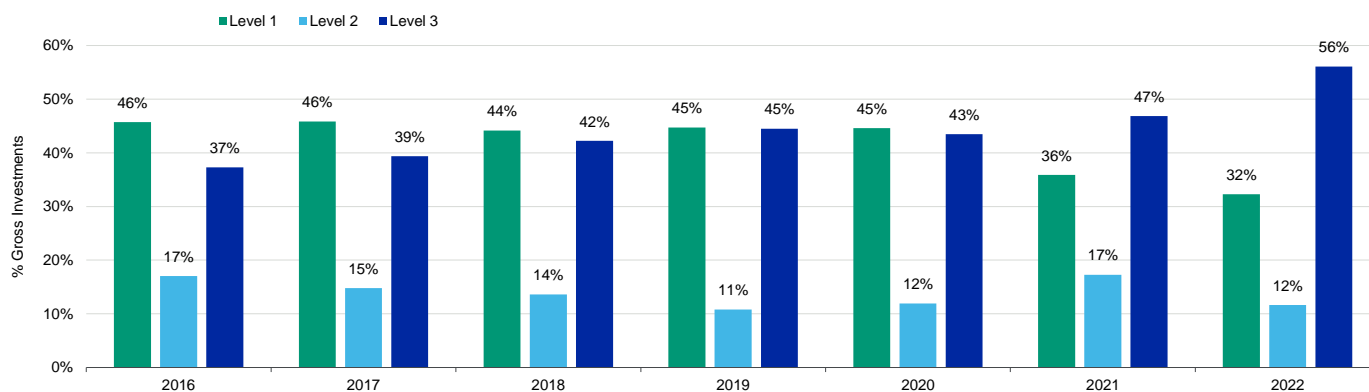
Asset Risk - High levels of less-liquid assets, although broadly diversified by geography and sector

OTPP's ratio of high risk assets to gross assets was 72% as of 31 December 2022 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 30 June 2023, OTPP's gross investment portfolio was comprised of 36% fixed income, 6% public equity, 23% private equity, 10% real estate and 14% 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 2022, OTPP's Level 3 assets increased significantly to 56% of gross investments from 47% in 2021. 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



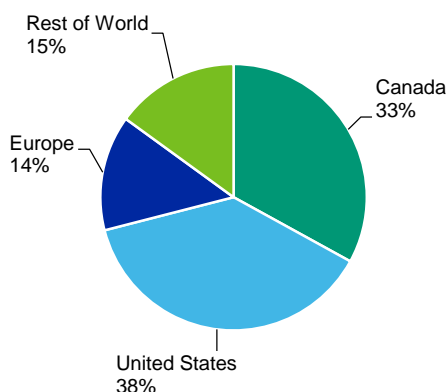
Data as of 31 December 2022

Source: Company Financials, Moody's Investors Service

As of the same period, 67% of OTPP's investment portfolio was invested outside Canada (Exhibit 4) and is broadly diversified across several asset classes. In our view, the benefits of this diversification strategy offsets higher liquidity and operational risks associated with reliance on level 3 assets and greater use of encumbered funding sources and derivatives. It also reduces common credit risks with the Canadian economy, providing diversification away from the geographic location of its pension obligation and related contribution cash flows.

Exhibit 4

OTPP's investments are globally diversified



As of 31 December 2022

Source: Company financials and Moody's Investors Service

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 2022, OTPP reported an 4.0% overall return on its investments driven by strong returns from inflation-sensitive assets (mainly commodities and natural resources) and infrastructure asset classes but down from a return of 11.1% in the prior year. For the first six months of 2023, OTPP reported a return of 1.9% due to positive returns in public and private equities, infrastructure and credit, up from 1.2% in the prior year period.

OTPP's initial asset risk score is ba1, to which we make a two-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 growing 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 1.8 times as of 31 December 2022 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. As of 30 June 2023, this exposure increased to 3.0 times as OTPP increased its exposure to fixed income. On a net investment basis, OTPP's fixed income exposure as a percentage of net investments increased to 52% as of 30 June 2023 from 35% as 31 December 2022. 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, the pension manager is over-funded with a Moody's adjusted funding ratio of 142% as of 30 June 2023 and during the pandemic, the funding status had deteriorated at the margin to 97% as of 31 December 2020 in the low rate environment. 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 336,000 active and retired schoolteachers in Ontario as of 31 December 2022. 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 30 June 2023, OTPP had CAD309 billion in gross assets and CAD250 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 CAD9 billion of cash, money market instruments and reverse repos, CAD82 billion in investment grade fixed income securities and CAD18 billion in public equities. Its primary sources of leverage are repurchase agreements, securities sold short, term debt and commercial paper of CAD58 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.

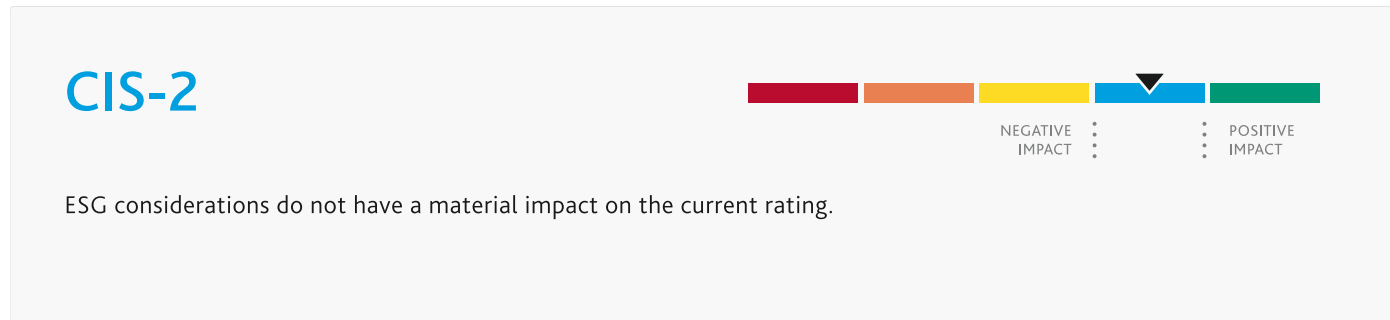
As at 30 June 2023, OTPP's leverage was 17% after adjusting for nettable repurchase agreements and derivatives that are not offset for accounting purposes. As noted previously, this results in two additional rating notches for the issuer and senior unsecured rating from the BCA.

ESG considerations

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

Exhibit 5

ESG credit impact score



Source: Moody's Investors Service

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



Source: Moody's Investors Service

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 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

Exhibit 7

Public Pension Manager

Ontario Teachers' Pension Plan Board

2022

	Historical		Initial Score	Assigned			
	Factor Weights	Historic Ratio		Assigned Score	Key driver #1	Key driver #2	
Funding Ratio*							
Net Assets / PBO	40%	100.0%	aaa	aaa	Benefit Flexibility		
Liquidity							
Liquidity Inflows / Outflows	20%	259.0%	aaa	aa1	Asset Encumbrance		
Asset Quality							
High Risk Assets / Gross Assets	20%	72.0%	ba1	baa2	Asset Class Diversification	Operational Risk	
Financial Policy							
Financial Policy	20%	aa	aa	aa			
Financial Profile Outcome	100%		aa2	aa2			
Qualitative Notching							
Political Independence				0			
Corporate Behavior				0			
Scorecard-Indicated Outcome Before Constraint				aa2			
Consideration of:							
Sovereign Constraint (Y/N)				Yes			
Sovereign Rating				Aaa			
Sponsor Constraint (Y/N)				Yes			
Sponsor Rating				Aa3			
Scorecard-Indicated Outcome				aa3			

Source: Moody's Financial Metrics

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 Investors Service

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