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INVESTORS SERVICE

CREDIT OPINION
14 March 2023

Update

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RATINGS

Canada Pension Plan Investment Board

Domicile	Canada
Long Term CRR	Not Assigned
Long Term Issuer Rating	Aaa
Type	LT Issuer Rating - Dom 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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Canada Pension Plan Investment Board

Update to credit analysis

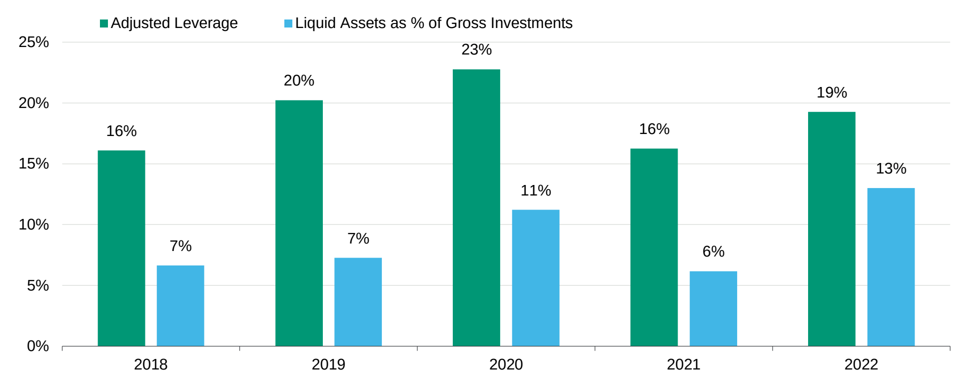
Summary

CPPIB's aa2 baseline credit assessment (BCA) reflects the pension manager's strong liquidity and predictability of future cash flows, as well as sound financial policies. The BCA is further supported by our positive view of its funding profile because as a pension manager, in contrast to a public pension plan, it does not have a direct funding obligations to pensioners. These credit strengths are constrained by a high proportion of high risk assets, growth in less-liquid investments, and a modest degree of leverage.

CPPIB's Aaa long-term senior unsecured rating is based on its aa2 BCA, our assumption of modest extraordinary support from the Government of Canada, and instrument-level structural support under our assumption that creditors have a priority of claim on net assets, creating high coverage of assets for creditors.

CPPIB Capital Inc., a wholly-owned subsidiary of CPPIB, has a backed commercial paper rating of Prime-1, reflecting the unconditional and irrevocable guarantee of its debt obligations by CPPIB. CPPIB Capital Inc. adds a moderate degree of leverage by issuing commercial paper and term debt guaranteed by CPPIB, with the goal of diversifying funding sources and enhancing overall returns of the fund.

Exhibit 1
Adjusted leverage is moderate and liquid assets offer strong coverage of obligations



Fiscal year ending March 31, Liquid assets represents money market securities, Government of Canada and Provincial government securities and securities purchased under reverse repurchase agreements. Moody's leverage ratio is adjusted for improved comparability between US GAAP and IFRS by deducting nettable, but not offset, repurchase agreements and derivative contracts.
Source: Moody's Investors Service, data from issuer reports

Credit strengths

» Governing legislation that mandates CPPIB as the exclusive asset manager for the national social retirement plan without responsibility for the underlying pension obligations; as such we view the plan as effectively fully-funded

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

» Sound financial policies and an investment profile that immunizes currency mismatches with debt obligations.

» CPPIB Capital Inc.'s issued instruments are unconditionally and irrevocably guaranteed by CPPIB

Credit challenges

» Execution risk associated with the transition to a higher allocation of private market investments

» Higher level of secured borrowings relative to peers

» Maintaining effective risk management as CPPIB continues to grow, particularly with respect to the Additional CPP

Outlook

The stable outlook reflects our expectations that CPPIB's credit fundamentals, specifically its strong and stable liquidity and level of high risk assets, will remain within current ranges over the next 12 to 18 months. It also reflects the stable outlook of its government extraordinary support provider, the Government of Canada (Aaa stable). The stable outlook on CPPIB Capital Inc.'s ratings reflect the outlook of CPPIB.

Factors that could lead to an upgrade

» An upgrade in the ratings is not possible.

» CPPIB's aa2 BCA could be upgraded if we were to assess a material and sustained decrease in high risk assets.

Factors that could lead to a downgrade

» The BCA could be downgraded if there was a material reduction in CPPIB's liquid assets or if a change in CPPIB's governing legislation or a legal precedent that casts doubt on the status of CPPIB's obligations as having preference over pension obligations. However, a downgrade in the BCA would not likely result in a downgrade of the long-term issuer rating because of our expectation of extraordinary support.

» A material increase in leverage above 25% for a sustained period of time

» A deterioration in the creditworthiness of the Government of Canada

» The supported ratings of CPPIB Capital Inc. could be downgraded if we were to assess a change in the guarantee from CPPIB.

Key indicators table

Exhibit 2
CPP Investments [1][2][3][4][5]

Statistics for Canada Pension Plan Investment Board	2022	2021	2020	2019	2018
Gross Assets (C$ millions)	687,675	599,385	543,144	500,547	431,941
CPPIB Net Assets (C$ millions)	539,311	497,187	409,588	391,980	356,134
Fixed Income % Investments	24%	24%	29%	25%	22%
Public Equity % Investments	23%	29%	22%	28%	34%
Private Equity % Investments	25%	27%	20%	19%	18%
Real Estate % Investments [4]	6%	6%	8%	9%	10%
Infrastructure % Investments	7%	7%	6%	7%	6%
Other Investments % Investments	15%	7%	15%	11%	9%
Total Funding % Gross Assets [5]	19%	17%	23%	21%	17%
Unsecured borrowing (CPPIB Capital; C$ millions)	49,507	39,997	38,395	30,861	24,056
Unsecured borrowing (CPPIB Capital; % Gross Assets)	7.2%	6.7%	7.1%	6.2%	5.6%
Derivative Notionals (C$ millions)	508,800	436,688	396,476	336,532	195,878
Annual Reported Return (%)	6.8%	20.4%	3.1%	9.3%	11.9%
Benchmark return (%)	4.7%	30.4%	-3.1%	6.6%	9.8%

[1] 2018-2022 information based on IFRS financial statements [2] Includes unrealized gains and loses on investments [3] Fiscal year ending 31 March [4] Data is net of debt on real assets [5] Data excludes debt on real assets
Source: Moody's Financial Metrics, data from company report

Profile

CPP Investments was established by the Canadian government to invest the assets of its national pension system (excluding the province of Québec), the Canada Pension Plan (CPP). CPPIB uses CPPIB Capital Inc. to add a moderate degree of leverage by raising both short-term and medium-term borrowings.

Detailed credit considerations

Funded Status - Pension reserve fund does not have responsibility for the obligation of the underlying pension liability

As an asset manager, CPPIB is not responsible for the administration of benefits, nor in setting actuarial assumptions of the underlying obligation; both of which are the responsibility of the sponsoring government. In contrast to a pension fund, CPPIB is the legal and beneficial owner of its assets. As such, we consider CPPIB to be fully funded and assign a aaa-score to its Funding Ratio score.

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

As of CPPIB's latest fiscal year-end of 31 March 2022, CPPIB had good coverage of its cash obligations by liquid assets. The ratio of discounted liquid asset inflows to recognized obligation outflows was 224%, down from 232% the year prior, largely because of higher levels of repos and payables.

CPPIB uses relatively high levels of repo funding and short-sold securities compared to peers, resulting in above-average asset encumbrance and counterparty risk exposure. As of 31 March 2022 the proportion of gross assets funded by repos and short-sold securities was 8%; double the Moody's-rated pension peer average of 4.1% for fiscal year ended 2021.

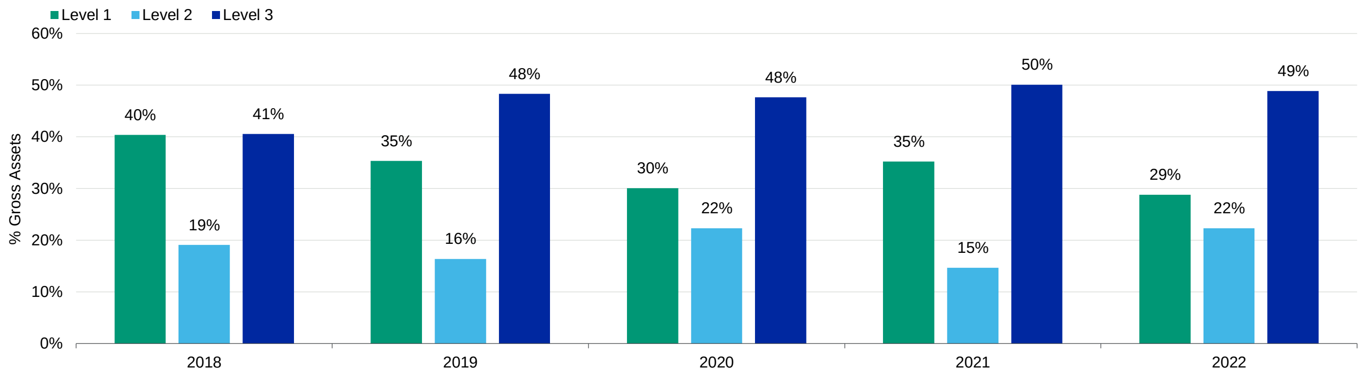
According to the Chief Actuary of Canada's most recent review released in December 2022, the base CPP will receive more in pension contributions than it pays out for pension benefit payments up to and including 2025, after which net outflows will be required to pay benefits. However, Additional CPP will be fully funded and net inflows related to its benefits are expected to be cash flow positive upon implementation until 2058. In aggregate, this results in a net positive contribution cash flow at least until then.

CPPIB has an initial liquidity score of aaa; however, we adjust the score down to aa1 to reflect that CPPIB has higher levels of secured borrowings than its peers.

Asset Risk - High levels of less-liquid assets, but with broad geographic and sector diversification

With a ratio of high risk assets to gross assets of 71%, CPPIB has very high asset risk exposure. Less-liquid Level 3 assets, such as real estate, infrastructure and private equity, have grown to 49% of the portfolio as of 31 March 2022 up from 41% in 2018 as highlighted in Exhibit 3. While these asset classes align to the pension manager's mandate to invest with a long-time horizon and offer attractive risk-adjusted returns, they also add incremental liquidity and operational risks to the fund.

Exhibit 3
CPPIB's less-liquid Level 3 assets have grown in recent years.
Real estate, infrastructure and private equity align with CPPIB's long time horizon



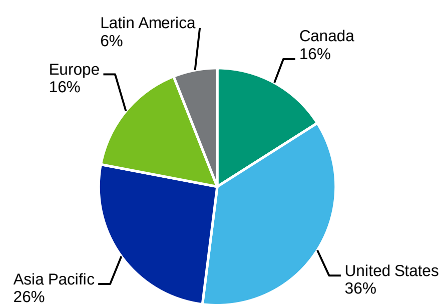
Fiscal year end 31 March
Source: Company Financials, Moody's Investors Service

Over 80% of CPPIB's investment portfolio was invested outside Canada as of 31 March 2022 (Exhibit 4) and is broadly diversified across several asset classes. The benefits of this diversification strategy offsets higher liquidity and operational risks associated with the portfolio's increasing share of Level 3 assets. It also reduces common credit risks with the Canadian economy, providing diversification away from the geographic location of the underlying pension obligation and related contribution cash flows. The effectiveness of these diversification efforts have been evident with the pension manager's positive investment performance during the current economic crisis.

For the fiscal year ending 31 March 2022, CPPIB posted a 6.8% return net of investment costs and the fund increased in size by CAD42 billion in net assets to CAD539 billion; CAD34 billion of the increase was from investment income. For the nine months ended 31 December 2022, CPPIB posted a net loss of 2.2% and the fund decreased by a CAD3.5 billion in net assets to net assets of CAD536 million. The net loss was mainly owing to the overall decline in equity markets and bond prices resulting from significant market volatility in the first and second fiscal quarters.

CPPIB has an initial asset risk initial score of ba3 but we adjust the score three-notches to Baa3 to reflect the benefits its diverse investment portfolio provides to its credit profile.

Exhibit 4
CPPIB's investments are diversified globally.



Data as of 31 March 2022
Source: Company Financials, Moody's Investors Service

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

CPPIB's financial policies are conservative as expressed in our aa-score for Financial Policy. The pension manager has good liquidity and risk management practices that mitigate a modest level of leverage that creates refinancing and counterparty risks. CPPIB has a policy of not hedging currency exposures within its investment portfolio which has generated volatility in its investment returns. That said, over 50% of CPPIB's investment portfolio is in USD or CAD which aligns with its creditor obligations, much of which is denominated in USD.

CPPIB's governing framework underpins its financial stability

A system of legislatively mandated and controlled cash flows provides for the overall stability and predictability of CPPIB's financial position. The Canada Pension Plan is funded by mandatory contributions from virtually all Canadian workers and their employers; the exception being workers in the province of Quebec which has its own mandatory pension system. The constituting act of the Canada Pension Plan (CPP Act) mandates that all pension contribution payments, in excess of immediate pension benefit payments, be transferred to the CPPIB.

CPPIB's mandate is to invest the amounts transferred to it with a view to achieving a maximum rate of return without undue risk of loss, having regard to the funding requirements of Canada Pension Plan. In addition, the CPP Act effectively mandates that no claims can be made by the Canada Pension Plan on CPPIB if the effect of such payments is to cause the net assets of CPPIB to fall below zero. This effectively places CPPIB creditors ahead of pension beneficiaries. A change in legislation would be required for CPPIB to lose its mandate to invest for the Canada Pension Plan. Amendments to the CPP Act require the agreement of two-thirds of the provinces of Canada representing two-thirds of the population, an amending formula more stringent than the formula for changing Canada's constitution.

ESG considerations

Canada Pension Plan Investment Board's ESG Credit Impact Score is Neutral-to-Low CIS-2

Exhibit 5
ESG Credit Impact Score

CIS-2

Neutral-to-Low

For an issuer scored CIS-2 (Neutral-to-Low), its ESG attributes are overall considered as having a neutral-to-low impact on the current rating; i.e., the overall influence of these attributes on the rating is non-material.

Source: Moody's Investors Service

CPPIB's ESG Credit Impact Score is neutral-to-low (**CIS-2**), reflecting limited impact of ESG considerations on the current rating. This reflects the potential for carbon transition and physical climate risks from the pension manager's commercial real estate portfolio as well as energy exposures. CPPIB's exposure to social risk factors are influenced by changes in unemployment and immigration, which have the potential to change contribution and benefit payment flows over time. As well, an aging population will pressure the fund's liquidity over time as benefit payments become larger than contributions and the fund needs to rely on cash flow from investments to make up shortfall. These ESG risks are offset by CPPIB's excellent liquidity, conservative financial policies and commitment to help and influence sectors with elevated carbon transition risks.

Exhibit 6
ESG Issuer Profile Scores

Source: Moody's Investors Service

Environmental

CPPIB faces moderately negative exposure to environmental risk related to carbon-intensive investments in its portfolio, such as oil & gas, transportation and financial services (insurance) holdings. 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 a hedge against inflation.

Social

CPPIB faces highly negative exposure to social risks, primarily from changes in unemployment or immigration rates, which can impact contribution cash flows. However, in contrast to a pension fund, CPPIB does not have direct exposure to an aging population because it is not responsible for making benefit payments nor in managing the pension benefit obligation. The fund can experience liquidity pressures as outflows increase, but this has been offset by immigration. This also reduces the impact of a privacy or data breach because CPPIB does not warehouse beneficiary data.

Governance

CPPIB has neutral-to-low governance risks. This reflects organizational complexity from its global investment footprint, offset by its strategic commitment to influence stronger ESG disclosures and practices of their investment companies through its ownership interests.

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.

Support and structural considerations

High expectation of extraordinary support with a mandate as the exclusive investment manager of Canada's national social retirement program; an essential public service

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, CPPIB has special legal status as the exclusive asset manager for investments related to the national social retirement program of Canada. We believe the pension manager is a key element of Canada's social retirement program and therefore an important contributor the Canadian economy. In our view, a default of CPPIB would be politically embarrassing to the Government of Canada and would have implications for the country's own ability to access debt markets. As such, we believe the Government of Canada would provide extraordinary support, financial or otherwise, to CPPIB if necessary.

CPPIB's creditors have an effective priority over pension obligations and benefit from strong coverage by high quality liquid assets

The legislative acts constituting the Canada Pension Plan and CPPIB do not explicitly define the priority of creditors over pension obligations. Nevertheless, in our view CPPIB's creditors have an effective priority because the CPP Act mandates that no claims can be made by the Canada Pension Plan on CPPIB if it would cause the net assets of CPPIB to be negative. In this instance net assets means assets less liabilities, including debt. As a result, CPPIB's obligations under the guarantee of CPPIB Capital Inc. debt rank senior to amounts payable to Canada Pension Plan and pari passu with CPPIB's other unsecured obligations. While there have been no precedents set for the settlement of claims for a failed public pension manager in Canada, several private sector failures has resulted in creditors placed before pensioners in liquidation.

On a gross asset base of CAD688 billion at 31 March 2022, CPPIB had net assets of CAD539 billion, which is effectively a loss absorbing cushion for the benefit of creditors. CPPIB's assets include CAD249 billion of liquid assets, comprising CAD16 billion of marketable Canadian federal, provincial and agency debt, CAD16 billion of cash and money market securities and CAD160 billion of public equities. This compares to debt liabilities comprising of commercial paper, term debt and loans of CAD44 billion. CPPIB maintains the equivalent of CAD1.5 billion in unsecured credit facilities as a liquidity backstop, which was undrawn as of 31 December 2022. CPPIB's liquidity monitoring also incorporates stressed collateral funding requirements. CPPIB has employed greater leverage while reducing its liquidity position in recent years as the fund shifts to a higher proportion of illiquid assets such as real estate and infrastructure.

Adjusting for nettable, but not offset, repurchase agreements, CPPIB's leverage ratio was 19% as at 31 March 2022 (the most recent data available). This level of leverage results in a two-notch upward adjustment to CPPIB's issuer rating at account for strong asset coverage.

Rating methodology and scorecard factors

Exhibit 7

Canada Pension Plan Investment Board

Public Pension Manager						
Canada Pension Plan Investment Board						
2022						
	Historical			Assigned		
	Factor Weights	Historic Ratio	Initial Score	Assigned Score	Key driver #1	Key driver #2
Funding Ratio*						
Net Assets / PBO	40%	100.0%	aaa	aaa		
Liquidity						
Liquidity Inflows / Outflows	20%	223.9%	aaa	aa1	Asset Encumbrance	
Asset Quality						
High Risk Assets / Gross Assets	20%	70.8%	ba1	baa3	Asset Class Diversification	Geographic Diversification
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				Aaa		
Scorecard-Indicated Outcome				aa2		

Source: Moody's Financial Metrics

Ratings

Exhibit 8

Category	Moody's Rating
CANADA PENSION PLAN INVESTMENT BOARD	
Outlook	Stable
Issuer Rating -Dom Curr	Aaa
CPPIB CAPITAL INC.	
Outlook	Stable
Bkd Senior Unsecured	Aaa
Bkd Commercial Paper	P-1

Source: Moody's Investors Service

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