Rating Report

Canada Pension Plan Investment Board & CPPIB Capital Inc.

DBRS Morningstar
June 19, 2020

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Ratings

Issuing Entity	Debt	Rating	Rating Action	Trend
Canada Pension Plan Investment Board	Issuer Rating	AAA	Confirmed	Stable
CPPIB Capital Inc.	U.S. Commercial Paper Notes	R-1 (high)	Confirmed	Stable
CPPIB Capital Inc.	Canadian Short-Term Promissory Notes	R-1 (high)	Confirmed	Stable
CPPIB Capital Inc.	Euro Commercial Paper Notes	R-1 (high)	Confirmed	Stable
CPPIB Capital Inc.	Medium-Term Notes	AAA	Confirmed	Stable

Rating Update

DBRS Limited (DBRS Morningstar) confirmed the Issuer Rating of Canada Pension Plan Investment Board (CPP Investments or the Fund) at AAA. CPP Investments is the federal nonagent Crown corporation responsible for managing the assets of the Canada Pension Plan (CPP or the Plan). DBRS Morningstar also confirmed CPPIB Capital Inc.'s Canadian Short-Term Promissory Notes, U.S. Commercial Paper Notes, and Euro Commercial Paper Notes programs at R-1 (high) and CPPIB Capital Inc.'s Medium-Term Notes at AAA. All trends remain Stable. DBRS Morningstar notes that the ratings on the short-term notes programs and long-term notes are predicated on the unconditional guarantees provided by CPP Investments on issuances. Furthermore, the strong ratings are primarily reflective of CPP Investments' exclusive legislated mandate to manage CPP assets (including the legislative protection entitling the Fund to retain at all times assets that have a fair market value not less than its liabilities, including the liabilities under the guarantees in respect of debt issued by CPPIB Capital Inc., its robust liquidity position, its low recourse debt burden, and the strong fundamentals of the CPP.

In December 2016, the *Canada Pension Plan Act* (the CPP Act), the *Canada Pension Plan Investment Board Act* (the CPPIB Act), and the Income Tax Act were amended to increase the amount of retirement pensions and benefits that will be paid from contributions made after 2018. Starting in January 2019, CPP Investments received and invested its first transfer of funds for the additional CPP. Although all assets are held by the Fund, contributions, benefits and assets for the additional CPP are accounted for separately from the base CPP. Investment returns and benefits from the contributions made at the rates established before 2018 are managed through the base CPP account, while investment returns and benefits stemming from the increased contributions are managed through the additional CPP account.

The total fund earned a net return of 3.1% in F2020, outperforming the reference portfolio's return of negative 3.1% by 6.2%. The Fund generated net income of $12.1 billion, which, combined with the $5.5 billion in net contributions received, increased the Fund's assets to $409.6 billion, corresponding to $407.3 billion in base CPP and $2.3 billion in additional CPP.

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Recourse debt, consisting of commercial paper (CP) outstanding and long-term debt, ended F2020 at $38.4 billion, or 8.6% of adjusted net assets, up from 7.3% as at fiscal year-end (YE) 2019. In the second half of F2020, the Fund increased the authorized limit on unsecured debt to an aggregate principal amount of $40 billion outstanding while maintaining the $15 billion limit on outstanding unsecured debt with a remaining term of less than one year. DBRS Morningstar expects that recourse leverage may continue to increase over the near term; however, overall recourse debt is expected to remain low, providing considerable room for cyclical fluctuations in asset values.

DBRS Morningstar notes that the Fund meets the DBRS Morningstar criteria for CP liquidity support outlined in the appendix to the *Rating Canadian Public Pension Funds & Related Exclusive Asset Managers* methodology, entitled "Self-Liquidity for Canadian Public Pension Funds and Related Exclusive Asset Managers' CP Programs" The Fund's liquidity position remains sound, with sufficient same-day available funds equal to at least five business days of upcoming liabilities and discounted assets equal to the remaining maximum authorized CP program limit, consistent with DBRS Morningstar's policy on back-up liquidity support for pension plans, and it provides considerable short-term financial flexibility.

DBRS Morningstar notes that in F2019, the board approved Strategy 2025, which focuses on adopting a global investment approach, including increasing the Fund's allocation to emerging markets, using more technology and data in its investment decisions, and furthering talent and culture at CPP Investments. As CPP Investments continues to place more emphasis on risk management, it established a new role of Chief Financial and Risk Officer (CFRO) in F2018, formally constituted a Risk Committee of the Board in F2019, and continued to refine its integrated risk framework in F2020.

Issuer Description

Canada Pension Plan Investment Board

Created in 1997, CPP Investments is a federal nonagent Crown corporation responsible for managing the assets of the CPP. CPP Investments operates independently of the CPP and at arm's length from the federal and provincial governments that are jointly responsible for the CPP.

CPPIB Capital Inc.

CPPIB Capital Inc. is a wholly owned subsidiary of CPP Investments . It was created in 2009 to raise financing for investment activities through short-term and long-term borrowing. CPPIB Capital Inc.'s short-term notes programs and long-term debt are unconditionally guaranteed by CPP Investments .

Financial Information

	For the year ended March 31				
	2020	**2019**	**2018**	**2017**	**2016**
Net assets ($ millions)	409,588	391,980	356,134	316,677	278,941
Recourse debt as % of adjusted net assets*	8.6%	7.3%	6.3%	5.9%	5.3%
Investment return base CPP	3.1%	8.9%	11.6%	11.8%	3.4%
Reference portfolio return base CPP	(3.1)%	6.6%	9.8%	14.9%	(1.0%)
Investment return additional CPP**	4.2%	5.0%			
Reference portfolio return additional CPP**	0.7%	7.0%			

* Net assets adjusted to add back recourse debt for ratio calculation purposes.
** For the three months ended March 31, 2019.

Rating Considerations

Strengths

1. Large investment portfolio and robust liquidity

As at March 31, 2020, the Fund had net assets of $409.6 billion, which provides a considerable cushion against any potential claims arising from the guarantees provided to CPPIB Capital Inc.'s notes issuances. The Fund maintains sufficient same-day available funds equal to at least five business days of upcoming liabilities and discounted assets equal to the remaining maximum authorized CP program limit, consistent with DBRS Morningstar's Self-Liquidity Criteria, which further enhances financial flexibility and supports the short-term ratings.

2. Exclusive mandate to manage pension assets

The CPP is required under its constituting Act, the CPP Act, to transfer all net pension contributions to CPP Investments . CPP Investments acts as exclusive manager of the assets of the CPP, and its mandate is to maximize returns for the Plan without undue risk of loss. This adds stability and certainty to cash flows and assets for CPP Investments . Furthermore, the statutory operating framework entitles the Fund to retain at all times assets that have a fair market value not less than the Fund's liabilities, including the guarantees provided by the Fund over any debt issued by CPPIB Capital Inc.

3. Strong predictable cash flow outlook because of favourable member demographics

The CPP benefits from fairly favourable plan membership demographics relative to other large pension plans that are projected to translate into net contribution inflows to CPP Investments until the end of 2021 for the base CPP, with a portion of investment earnings required to pay some of the benefits thereafter, while contributions to the additional CPP are projected to exceed benefit payments until at least 2057. The CPP currently has approximately 2.5 working members for each retirement beneficiary, a ratio that is expected to slowly decline to 2.0 by 2030. Stability of cash flows is further enhanced by the predictability of payments to CPP beneficiaries; the diversification of CPP membership, which includes all working Canadians except those in Québec; and the contribution-rate default mechanism. According to the most recent report by the Chief Actuary of Canada, the CPP is sustainable throughout the report's 75-year projection period.

4. No direct responsibility for CPP liabilities

Based on the CPP Act and the CPPIB Act, the Fund has no direct responsibility for the liabilities of the CPP in relation to its members, which translates into a much more stable net asset position. However, CPP Investments' mandate is to invest the Plan's assets with a view to maximizing returns for the Plan while maintaining sufficient liquidity to meet both CPP Investments' and the Plan's short-term obligations and cash flow requirements.

5. Superior transparency

CPP Investments releases updates to its financial performance every quarter, comparing very favourably with the annual releases of most of its DBRS Morningstar-rated peers and fostering accountability within the organization.

Challenges

1. Financial impact from the coronavirus pandemic

An expected economic contraction and weakened businesses performance due to the Coronavirus Disease (COVID-19) pandemic have already affected asset valuations in public equity and private markets. A significant impact on asset valuations could result in a material erosion in the plan's asset base. However, CPP Investments' F2020 net assets already incorporate some of the impact from the coronavirus pandemic, which, coupled with a low recourse debt burden, continue to provide considerable cushion for asset base movements.

2. Inherent volatility of investment activities

Asset valuations fluctuate over time. Like most other large fund managers, CPP Investments maintains considerable exposure to public equities (28.2% of net investments as at March 31, 2020), which contribute above-average volatility to returns and net asset value compared with nonpublic equity investments, as displayed by the Fund's extremely volatile performance in F2009 (-18.8% net return) and, more recently, in Canadian and emerging market public equities. The current outlook of increased geopolitical risk, slow global economic growth, low interest rates, and maturing demographics can lead to an increased exposure to riskier assets. Riskier assets can offer potentially higher long-term results, but may also add more volatility to the valuation of the asset base in the short term.

3. Exposure to legislative changes

The AAA and R-1 (high) ratings largely rely on the stability of CPP Investments's exclusive investment mandate and the high level of liquid assets available to pay for any short-term obligations (including guaranteed liabilities). Although highly unlikely, new legislation could conceivably be introduced that could adversely affect CPP Investments's operating environment by, for example, allowing the CPP to seek alternative asset managers or blocking the contribution-rate default mechanism. However, the risk of political interference is significantly mitigated by the requirement to have any legislative changes approved by at least two-thirds of the provinces and representing at least two-thirds of the population. Furthermore, since the Fund was set up especially to service the CPP, and given the moral obligation to protect the financial integrity of the CPP, DBRS Morningstar considers any adverse wholesale change in CPP Investments's operating framework as a very remote possibility.

4. Establishing framework to meet growth requirements

CPP Investments has experienced rapid growth since it first received funds from CPP in 1999. It has done a commendable job at managing its assets while growing a global workforce of 1,824 employees at fiscal YE2020; however, CPP Investments continues to integrate and fine tune its global resources to meet growth, return expectations, and manage the additional CPP assets. Additionally, its active investment and risk management procedures, particularly of private market assets, are continuing to develop with additional operational and risk management capabilities being introduced. CPP Investments continues to seek and develop investment and risk management expertise with the goal of attracting and retaining high-quality employees to assist in meeting its mandate. Furthermore, processes and procedures and investment risk management systems and controls will require continual refinement as the Fund continues to grow in scale and accommodates the additional CPP.

Investment Performance

Investment Returns

			For the year ended March 31				
	5-year Average	**10-year Average**	**2020**	**2019**	**2018**	**2017**	**2016**
Total investment return	7.7%	9.9%	3.1%	8.9%	11.6%	11.8%	3.4%
Benchmark return	5.2%	8.3%	(3.1)%	6.6%	9.8%	14.9%	(1.0%)

CPP Investments posted a net return of 3.1% in F2020, which is lower than the 8.9% net return achieved in F2019 but above the Reference Portfolio's return of negative 3.1% by 6.2% (see Investment Portfolio Profile below for a description of the Reference Portfolio). The Fund has outperformed or been comparable to the Reference Portfolio in every year since the comparison began in 2007, except for F2010 and F2017. The Fund also reports its performance relative to the Reference Portfolio on a dollar-value-added (DVA) basis and believes this to be more representative of its relative performance. The Fund reported a net DVA of $23.5 billion in F2020, after deducting all costs, mainly generated by the assets under the base CPP account, since the DVA contributed by the additional CPP was not significant given its recent inception date. Over a ten-year period, which is a better indication of performance given the Plan's long-term horizon, the Fund has delivered an annualized net real return of 8.1%, exceeding the Chief Actuary of Canada's 3.95% assumed real rate of return required to sustain the base CPP at current contribution rate levels. Furthermore, the Fund has delivered a compounded DVA of $52.6 billion, net of all fund costs, since inception of active management in 2006.

Economic contraction and weakened businesses performance due to the coronavirus pandemic affected asset valuations in public equity and private markets in the fourth quarter of CPP Investments' fiscal year. Due to the sharp market sell-off in global equity markets during this time, Canadian and Foreign (Emerging) public equities experienced losses of 12.2% and 9.1%, respectively. Private equities tend to exhibit less volatility than the daily-moving prices of comparable public market equivalents and, as a result, private market investments are relatively resilient to the negative performance of public markets. Private Equities delivered net returns of 6.0% in foreign developed markets and 8.0% in emerging markets. Government bonds continued to benefit from the flight to safety with returns of 16.1% in marketable bonds. The Fund's infrastructure and real estate assets recorded a loss of 1.0% and gain of 5.1%, respectively.

Returns by Major Portfolio[1]						
(For the year ended March 31)	**2020**	**2019**	**2018**	**2017**	**2016 - Updated[2]**	**2016**
	Return	**Return**	**Return**	**Return**	**Return**	**Return**
Bonds & money market	n/a	n/a	n/a	n/a	n/a	2.4%
Nonmarketable bonds	n/a	n/a	n/a	n/a	n/a	-0.2%
Foreign sovereign bonds	n/a	n/a	n/a	n/a	n/a	5.6%
Other debt	n/a	n/a	n/a	n/a	n/a	7.9%
Government Bonds[3]						
Marketable	16.1%	5.3%	1.6%	-0.9%	2.3%	
Nonmarketable	4.7%	4.8%	2.7%	1.8%	-0.2%	
Canadian public equities	-12.2%	7.9%	2.2%	19.2%	-6.4%	-6.4%
Canadian private equities	-5.1%	5.7%	1.8%	8.6%	4.0%	-4.2%
Foreign (developed) public equities	1.6%	7.5%	11.0%	18.9%	-2.8%	-2.8%
Foreign (developed) private equities	6.0%	18.0%	16.0%	15.8%	8.8%	8.6%
Foreign (emerging) public equities	-9.1%	-1.7%	18.6%	18.9%	-8.7%	-8.7%
Foreign (emerging) private equities	8.0%	11.8%	19.5%	15.4%	17.0%	17.0%
Credit Investments	0.5%	8.7%	6.9%	13.9%	8.4%	
Real Assets						
Real estate	5.1%	6.4%	9.4%	8.3%	12.3%	12.3%
Infrastructure	-1.0%	14.0%	15.2%	7.4%	9.3%	9.3%
Other[4]	-6.3%	0.0%	-9.8%	16.8%	-7.7%	
Total weighted-average return	3.4%	9.3%	11.9%	12.2%	3.7%	3.7%

n/a = not available
1 Gross returns.
2 F2016 percentages were updated in F2017 to be consistent with the latest presentation format.
3 Government Bonds contains Bonds & money market, Nonmarketable Bonds, Foreign sovereign bonds, and Other debt from 2013 to 2016.
4 Other includes energy & resources and power & renewables.

Over the course of 2020, an extended economic lockdown and the threat of a second wave of coronavirus infections may significantly affect returns and, in some cases, the sustainability of investments such as those linked to businesses that have been deemed as nonessential and rely on direct human interactions. An expected economic contraction and weakened businesses performance due to the coronavirus pandemic have already affected asset valuations in public equity and private markets. Although public equity markets have recovered most of the initial losses suffered between February 19, 2020, and March 23, 2020, there is concern that high price-to-earnings (P/E) multiples could be indicating that public equities are overvalued. However, the risk of lower valuations in public equities and some private investments may be partially offset by a diversified portfolio and strong performance in public fixed-income investments.

Operating expenses rose by 4.2% to $1,254 million, or $0.31 per $100 of net assets in F2020, compared with $1,203 million, or $0.33 per $100 of net assets in F2019. The increase was mainly caused by costs related to increased staffing levels to manage the growing size of the Fund, including the opening of an office in San Francisco, incentive compensation, and higher investments in technology and data. Generally, CPP Investments' costs have increased in recent years as the Fund has further developed internal capabilities to execute its global investment strategy and manage expected asset growth. CPP Investments also incurred external investment management fees totalling $1,808 million in F2020, up from $1,586 million in F2019. The increase is largely driven by more assets under management by fund managers and higher performance fees paid to external fund managers in public market strategies. Transaction costs decreased to $390 million in F2020 from $429 million the prior year.

Outlook

CPP Investments' very long investment horizon, diversified asset base, net contribution inflows expected through the end of 2021 for the base CPP and 2057 for the additional CPP, and substantial scale will enable the Fund to continue to take advantage of investment opportunities as they arise, especially in the private market space, which offers premiums for illiquidity and, given the patient nature of CPP Investments' investment approach, will allow it to realize the value embedded in these assets and also benefit from cash flows over the holding period of these assets.

Net Asset Position

Statement of Change in Net Assets

	As at March 31				
($ millions)	**2020**	**2019**	**2018**	**2017**	**2016**
Net investment income [1]	13,351	33,213	37,792	34,362	10,007
Expenses	(1,254)	(1,203)	(1,053)	(923)	(876)
Net income from operations	12,097	32,010	36,739	33,439	9,131
Net transfers (withdrawals) from CPP	5,511	3,836	2,718	4,297	5,187
Accounting changes	-	-	-	-	-
Increase in net assets	17,608	35,846	39,457	37,736	14,318
Net assets at fiscal year-end	409,588	391,980	356,134	316,677	278,941
Operating costs (per $100 of net assets) [2]	0.306	0.328	0.315	0.313	0.320
Recourse debt ($ millions)	38,395	30,861	24,056	19,873	15,568
- as a % of adjusted net assets [3]	8.6%	7.3%	6.3%	5.9%	5.3%
Derivative exposure (notional value)	396,476	336,532	195,878	205,530	345,935
Commitments and guarantees ($ millions)	60,488	52,012	44,786	42,206	37,416
Net assets / CPP annual expenditures (base CPP) [4]	7.6x	6.6x	6.6x	6.6x	6.5x

1 Includes realized and unrealized gains & losses on investments, interest income, dividends, securities lending income and private real estate operating income, net of interest expenses.
2 Reported operating costs do not include external management fees and transaction costs.
3 Net assets adjusted to add back recourse debt for ratio calculation purposes.
4 At calendar year-end. Based on latest actuarial valuation as at December 31, 2015, for fiscal 2016–2019 results, as at December 31, 2018 for fiscal 2020 results.

CPP Investments' net asset position increased by 4.5%, or $17.6 billion year over year to $409.6 billion as at March 31, 2020, driven by income net of operating costs totalling $12.1 billion and net contribution inflows of $5.5 billion.

As at the fiscal year ended March 31, 2020, CP and term debt outstanding totalled $5.8 billion and $32.6 billion, respectively. As such, recourse debt ended F2020 at 8.6% of adjusted net assets, up from 7.3% in the prior year. The remainder of the investment-related liabilities carried by the Fund in F2020 ($93.9 billion) consisted mainly of securities short-selling, repurchase agreements and derivative liabilities.

Capital Market Debt Outstanding

As at March 31, 2020

(millions)	**Maturity**	**Currency**	**Interest Rate**	**Issuance Amount**
Commercial Paper Notes	< 1 year	Various		CAD Equivalent $4,323
Medium Term Notes, Series A[1]	Jun. 2020	CAD	1.400%	CAD $1,000
Series 2 Fixed Rate Notes	Jan. 2022	USD	2.250%	USD $2,000
Series 3 Fixed Rate Notes	Jun. 2024	EUR	0.375%	€2,000
Series 4 Fixed Rate Notes	Nov. 2027	USD	2.750%	USD $1,000
Series 5 Fixed Rate Notes	Jan. 2021	USD	2.375%	USD $2,000
Series 6 Fixed Rate Notes	Mar. 2033	EUR	1.500%	€1,000
Series 8 Fixed Rate Notes	Jun. 2028	CAD	3.000%	CAD 1,500
Series 9 Fixed Rate Notes	Sep. 2023	USD	3.125%	USD $2,000
Series 10 Floating Rate Notes	Oct. 2020	USD	3M USD LIBOR + 0.03%	USD $750
Series 11 Fixed Rate Notes	Jul. 2021	USD	2.750%	USD $2,000
Series 12 Fixed Rate Notes	Feb. 2029	EUR	0.875%	€1,000
Series 13 Fixed Rate Notes	July 2049	EUR	0.750%	€1,000
Series 14 Fixed Rate Notes	Sep. 2029	CAD	1.950%	CAD $1,000
Series 15 Fixed Rate Notes	Nov. 2029	USD	2.000%	USD $1,000
Series 16 Floating Rate Notes (Green Bond)	Dec. 2020	USD	WA SOFT + 32 bps	USD $500
Series 17 Fixed Rate Notes	Dec. 2024	GBP	0.876%	£500
Series 18 Fixed Rate Notes	Mar. 2025	USD	1.250%	USD $1,000
Series 19 Fixed Rate Notes (Green Bond)	Apr. 2027	EUR	0.250%	€1,000
Series 20 Fixed Rate Notes	Apr. 2022	USD	0.750%	USD $1,250
Series 23 Fixed Rate Notes	Dec. 2029	GBP	1.125%	£750
Total (CAD Equivalent) [1]				CAD $38,395

1 Includes private placements.

The Fund's liquidity position remains sound, with sufficient same-day available funds equal to at least five business days of upcoming liabilities and discounted assets equal to the remaining maximum authorized CP program limit, consistent with DBRS Morningstar's policy on back-up liquidity support for pension plans, and it provides considerable short-term flexibility. As additional sources of liquidity, CPPIB maintains a CAD 1.5 billion uncommitted credit facility and a USD 3.5 billion committed credit facility guaranteed by CPP Investments for general corporate purposes. Both credit facilities remained undrawn at the time of this report.

Outlook

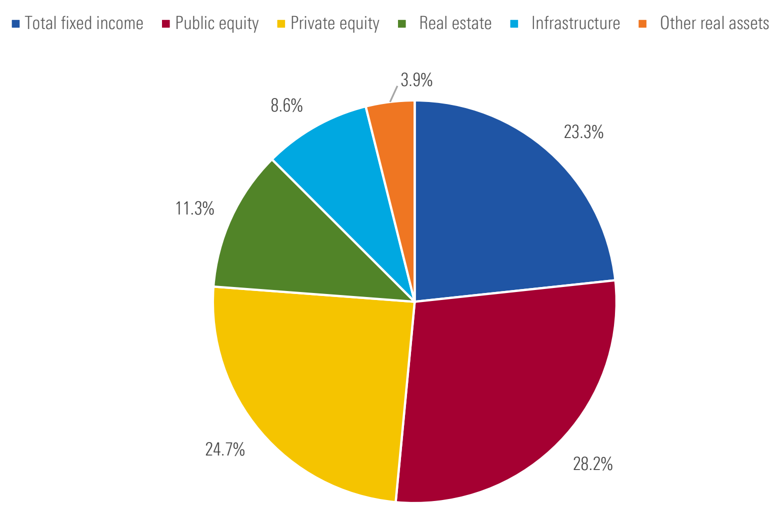
CPP Investments does not set individual limits for each CP program but instead has an aggregate Canadian dollar limit for short-term debt to maintain flexibility to assess the relative pricing in each market over time.

Management has continued to reduce its reliance on the short-term market and has issued more long-term notes instead. DBRS Morningstar expects combined recourse debt to continue to increase marginally over the medium term but to remain low, providing considerable room for cyclical fluctuations in asset values.

The latest actuarial report by the Chief Actuary of Canada, released in December 2019, which assesses the base CPP as at December 31, 2018, finds that the CPP is expected to remain financially sustainable throughout the report's 75-year projection period, despite a significant projected increase in benefit expenses as a result of population aging. Furthermore, the Chief Actuary of Canada determined that annual contributions into the CPP are expected to exceed benefits paid to pensioners before 2022 for the base CPP, giving the Fund two more years that net contribution inflows are available for investment purposes. Further, the report projects that the base CPP's net assets will grow to $688 billion by 2030 and to $1.7 trillion by 2050. In addition, the actuarial report finds that the additional CPP assets will grow to $191 billion by 2030 and to $1.3 trillion by 2050. It also finds that the annual contributions for the additional CPP are expected to exceed the additional benefits paid to pensioners until 2058.

Investment Portfolio Profile

Exhibit 1 Net Asset Allocation at March 31, 2020



CPP Investments manages the CPP Investment Portfolio with a very long-term horizon through six overarching investment departments: Total Portfolio Management, Capital Markets and Factor Investing, Active Equities, Credit Investments, Private Equity, and Real Assets. Each of the six investment departments oversees a set of specialized portfolios that are managed in accordance with the overall objective of maximizing returns without undue risk of loss while having regard for the factors that may affect the funding and ability of the base CPP and additional CPP to meet their financial obligations.

CPP Investments' investment strategy emphasizes long-term total returns in addition to long-term, value-added returns versus a low-cost, passive benchmark portfolio. The Fund uses the total portfolio approach, which manages risk exposures at the total portfolio level within specified limits and seeks to mitigate any unintended risks that are not adequately compensated. The total portfolio is rebalanced as needed.

The Fund started receiving and investing the net contributions relating to the additional CPP in January 2019. As the additional CPP is fully funded from inception, expected risk targets and portfolio composition differ from that of the base CPP. To account for the two portfolios with different requirements, CPP Investments established a two-account, two-pool investment structure, whereby each of the base CPP account and additional CPP account invests in units of two pools: a core pool, which is a diversified portfolio of equities, fixed income, real assets, and absolute return strategies with an 85% equity/15% debt risk equivalence (same as CPP Investments' existing portfolio), and a supplementary pool, which is solely composed of fixed income. Currently, the base CPP is 100% allocated to the core pool, while the additional CPP is allocated to both the core and supplementary pools in proportions that achieve a 50% equity/50% debt risk equivalence (currently approximately 55 to 60%% in the core pool and the remainder is invested in the supplementary pool). The proportions of each pool are rebalanced by adjusting how much of the weekly cash flow from the additional CPP goes into each pool.

CPP Investments' investment framework comprises three key elements:
1. The CPP Investments Reference Portfolio is a passive low-cost benchmark portfolio comprising global public equities and Canadian government bonds that expresses the overall risk appetite of the Fund. This is the level of investment risk that satisfies the Fund's legislative mandate of maximizing returns without undue risk of loss. At a minimum, the overall risk appetite of the Fund must be at a level that would be expected to generate the long-term net real return assumed by the Chief Actuary of Canada (3.95% for the base CPP and 3.38% for the additional CPP), which would allow the CPP to maintain contribution rates at current levels. Each of the base CPP and additional CPP has its own Reference Portfolio to reflect the different risk profiles of the base CPP and additional CPP.

From F2013 to F2015, the Reference Portfolio (now the base CPP Reference Portfolio) maintained an overall exposure to equities of 65% and a weighting in fixed income of 35%. On the equities side, the allocation to Canadian equities was at 10%, while the developed foreign markets and emerging market asset classes had a combined exposure of 55%. Starting in F2015, CPP Investments gradually shifted the base CPP Reference Portfolio to a composition of 85% global equities (including Canadian equities) and 15% Canadian government bonds by the end of F2018. Correspondingly, CPP Investments' base CPP portfolio allocation has shifted to a risk equivalence of the base CPP Reference Portfolio. The additional

CPP Reference Portfolio has a 50% exposure to equities and 50% to government bonds. The Reference Portfolios are reviewed every three years, typically after the publication of each actuarial report.

2. The Strategic Portfolio lays out the expected composition of each Investment Portfolio by asset class and geography with a long-term view of the portfolio (five+ years). To determine the Strategic Portfolio, weightings are assigned to six public and private asset classes and three geographic regions based on an analysis of key return-risk factors. Each of the base CPP and additional CPP has its own Strategic Portfolio, with different weights assigned to the asset classes and geographies. The Strategic Portfolios are reviewed at least every three years, concurrently with the review of the Reference Portfolios.

3. The Target, Active and Balancing Portfolios take into account the change in the values of investments and key risk exposures in each Investment Portfolio. The Target Portfolio defines percentage weight ranges, and in some cases, specific limits, for each asset class and geographic region as determined by the Strategic Portfolios, with a one-year view of the investment portfolio. The Active Portfolio consists of specific investments at their current values, and the Balancing Portfolio consists of tradeable public market securities. Based on the key risk exposures in the Active Portfolio at any time, the Balancing Portfolio is adjusted to maintain the overall mix for the total portfolio.

For the most part, the Fund does not hedge foreign holding exposures to the Canadian dollar.

The Fund's private market assets include private equity, real estate, infrastructure, private debt, private real estate debt, energy and resources, and power and renewables. Together, these assets accounted for approximately 48.5% of the Fund in F2020, which is up from just 4.3% in F2005. Private market assets tend to exhibit less volatility than public market securities and provide the added benefit of cash flows during the holding period. However, DBRS Morningstar notes that with a growing number of institutional investors actively competing in this space, prices are being bid higher, and as the Fund grows in size and capital must be deployed, it will have to be vigilant to prevent overpaying for private market assets. Additionally, DBRS Morningstar notes that the valuation of private market assets entails a degree of subjectivity relative to more liquid publicly traded securities; however, CPP Investments has an established internal valuation process for these assets that includes a valuation committee and continues to refine its internal models for biases.

In addition, CPP Investments continues to expand the geographic scope of its investment strategy, particularly in emerging markets. While headquartered in Toronto, it has international offices in Hong Kong, London, New York, São Paulo, Luxembourg, Mumbai, and Sydney. CPP Investments recently opened an office in San Francisco as well, to provide a local presence in the world's largest innovation hub. In new investment destinations, CPP Investments will seek out strategic partnerships with local experts to aid in investment decision making. In F2020, 46 global transactions of over $300 million each were completed; 85.0% of the Fund was invested outside of Canada. It is expected that this allocation will continue to grow as the Fund seeks to capitalize on its global presence, build out teams in recently opened offices, and increase its assets invested in emerging markets, such as China, India, and Latin America, by up to one-third (currently 21.4%).

DBRS Morningstar notes that while increasing exposure in emerging markets brings on added risks, DBRS Morningstar is of the opinion that, in light of its relatively robust projected cash inflows and long investment horizon, CPP Investments could conceivably absorb greater short-term risk and market volatility relative to its peers.

Breakdown of Net Investments[1]

	As at March 31				
	2020	**2019**	**2018**	**2017**	**2016**
Fixed Income					
Bonds, inflation-linked bonds, money market securities & other[2]	10.9%	10.0%	11.1%	16.0%	19.4%
Other debt	12.4%	9.1%	6.3%	5.5%	7.5%
Total fixed income	23.3%	19.1%	17.4%	21.5%	26.9%
Public Equities					
Canadian	1.7%	2.0%	2.4%	3.3%	4.3%
Foreign	26.5%	31.2%	36.4%	33.6%	27.3%
Total public equity	28.2%	33.2%	38.8%	36.9%	31.6%
Private Equities					
Canadian	0.3%	0.2%	0.3%	0.4%	1.1%
Foreign	24.4%	23.5%	20.0%	18.1%	19.6%
Total private equity	24.7%	23.7%	20.3%	18.5%	20.7%
Real Assets					
Real estate	11.3%	12.1%	12.9%	12.6%	13.2%
Infrastructure	8.6%	8.5%	8.0%	7.7%	7.6%
Other real assets[3]	3.9%	3.4%	2.6%	2.8%	
Total real assets	23.8%	24.0%	23.5%	23.1%	20.8%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

1 Incorporates market exposure of derivatives, associated money market securities and other investment receivables and liabilities.
2 Net of debt issuance and absolute return strategies.
3 Other includes energy & resources, power & renewables.

Cash for Benefits Portfolio: In addition to funds invested in the CPP Investment Portfolio, since 2004, CPP Investments has had the mandate of managing the short-term cash needed for monthly benefit payments made by the CPP. This relatively small pool of assets (average of approximately $2.1 billion in F2020) is managed separately from the CPP Investment Portfolio and held in liquid money market instruments but is included in CPP Investments' total net assets.

About CPPIB

Established in 1997, CPP Investments is a federal nonagent Crown corporation that manages the net contributions from the CPP. CPP Investments' mandate is threefold: (1) To assist the CPP in meeting its obligations to contributors and beneficiaries, (2) to manage CPP assets in the best interests of contributors and beneficiaries and (3) to maximize returns without undue risk of loss.

Under section 108.1 of the CPP Act, net employee and employer contributions to the CPP that are not required to meet immediate CPP obligations are transferred weekly to the CPP Investments. As a result, CPP Investments' portfolio growth outlook is strongly influenced by CPP cash flows; however, as an exclusive asset manager, and in contrast to pension plans, CPP Investments has no direct responsibility for the liabilities of the CPP pertaining to the benefits earned by the beneficiaries.

CPP Investments operates independently of the CPP and at arm's length from the federal and provincial governments that are jointly responsible for the CPP. The organization is governed by a board of directors comprising 12 members, each appointed for a three-year term (renewable for up to nine years in total) by the federal minister of finance in consultation with the participating provinces and on the recommendation of an independent nominating committee. The board is responsible for, among other things, appointing the president and CEO, establishing investment and operational policies, standards and procedures and establishing a code of conduct. Each year, the board approves the annual business plan, including the target portfolio recommendation from the Investment Planning Committee (which has recently been replaced with the Investment Strategy & Risk Committee), risk policy, and risk limits. The IPC is responsible for approving investment deployment targets, approving investment programs, managing the total Fund asset currency and risk exposures and undertaking select strategic investments. Risk exposures are reported to the board at least quarterly. DBRS Morningstar notes that in light of its push to internationalize its investments, CPP Investments sought, and legislation was passed, to amend the CPP Investments Act to permit the addition of up to three nonresidents of Canada on the board, which will help to bring experts with on-the-ground expertise as CPP Investments expands its investment footprint globally. The board has currently two nonresident directors.

CPP Investments employs an enterprise risk management framework, which includes regular examination and semi-annual board-level reporting of a broad array of risks, including operational, strategic, investment, legislative and regulatory, and reputational. CPP Investments continues to make enhancements to its risk management practices, and in recent years, these included establishing the role of CFRO, creating a Risk Committee of the Board, adding a longer-term (five-year) risk model, enhancing scenario analysis for geopolitical events, improving controls and monitoring processes as well as establishing a climate change committee.

CPP Investments is required to report its annual results to Parliament through the federal finance minister and its quarterly and annual results to the federal and provincial ministers of finance and to the public. Overall, CPP Investments' operating framework is highly dependent on the CPP Act, the CPP Investments Act and related regulations, which potentially exposes the Fund to political interference and adverse legislative changes; however, DBRS Morningstar notes that amendments to CPP Investments legislation or related regulations can be made only if at least two-thirds of the participating provinces representing at least two-thirds of the group's population have approved them. This provides considerable stability to the mandate of CPP Investments as the exclusive manager of CPP assets.

About CPP

The CPP is a jointly managed federal-provincial public plan that provides retirement pensions to workers of all provinces, with the exception of Québec, where a similar plan exists. The plan also provides disability, death, survivor and children's benefits. The most recent actuarial valuation on the base CPP, as at December 31, 2018, found that total assets will amount to 6.5 times (x) the following year's expenditures for 2020 and will likely grow to $688 billion by the end of 2030 and $1.7 trillion by 2050. The ratio of assets to the following year's expenditures is projected to remain relatively stable at a level of 7.6x the annual expenditures over the period 2021 to 2031. Assets are expected to grow to 8.8x in 2050 and continue to increase over the projection period. The report also reaffirmed that the current legislated contribution rate of 9.9%, in place since 2003, is sufficient to keep the base CPP sustainable throughout the 75-year projection period, with annual contributions expected to exceed paid benefits until 2022. The CPP pursues two key financing objectives: (1) To have a contribution rate that results in the ratio of the projected assets of the CPP over the projected annual expenditures of the CPP in the following year be the same in the tenth and sixtieth year following a review period and (2) to fully fund all benefit enhancements.

The CPP is subject to an actuarial valuation conducted by the Chief Actuary of Canada every three years. The report is used by the federal and provincial ministers of finance to determine whether benefits and/or contribution rates should be changed, with any change subject to the approval of at least two-thirds of the provinces representing at least two-thirds of the group's population. As part of a review, if the Chief Actuary of Canada calculates a contribution rate necessary to ensure the long-term sustainability of the plan (the minimum rate) that is higher than the actual contribution rate, and if by October 1 of the year preceding the beginning of the next three-year period the finance ministers have failed to take action to increase or maintain the legislative rate, then an automatic rebalancing mechanism would be triggered. Accordingly, benefit indexation may stop until the next review, and the contribution rate would be raised over a three-year period as per a legislated formula (up to a maximum of 0.1% per year for employees and employers, or 0.2% for self-employed individuals). Likely for intergenerational equity reasons, the adjustment mechanism is fairly slow and only provides for a partial closing of the gap between the actual rate and the minimum rate during the three-year period.

Another deviation from the minimum contribution rate reported at the next actuarial review would, however, trigger another round of rate increases and a possible benefits freeze. DBRS Morningstar also notes that the CPP legislation does not prevent the finance ministers from deciding to not change the contribution rates or to not freeze benefits, thereby blocking the automatic rebalancing mechanism. Nevertheless, this scenario is currently viewed by DBRS Morningstar as very unlikely given the consensus required among ministers to achieve such an outcome, the statutory requirement to have such a decision made public and the government's moral obligation to protect the financial integrity of the Plan.

DBRS Morningstar notes that Bill C-26 was passed in December 2016 to amend the CPP Act, the CPP Investments Act and the Income Tax Act for enhancing the CPP (the additional CPP). The additional CPP came into effect in January 2019 and will be phased in over a period of seven years. The legislated contribution rate on the maximum amount of pensionable earnings will gradually increase from 2019 to 2023. A contribution rate on earnings below the Year's Maximum Pensionable Earnings (YMPE; the first additional contribution rate) will be phased in over five years and be set at 2% from 2023 onwards. Beginning in 2024, a separate contribution rate of 8% will be implemented on earnings between the YMPE and a new upper earnings limit (the second additional contribution rate). The most recent actuarial valuation on the additional CPP, as at December 31, 2018, found that total assets will likely grow to $191 billion by the end of 2030 and $1.3 trillion by 2050. The ratio of assets to the following year's expenditures is projected to increase rapidly until 2025 and then decrease to approximately 26.0x by 2080. The report also confirmed that the legislated first and second additional contributions rates of 2.0% for 2023 and thereafter and 8.0% for 2024 and thereafter, respectively, result are sufficient to fully pay the projected expenditures of the additional CPP over the long term. Annual contributions are expected to exceed paid benefits until 2058.

Structure of Guarantee from CPP Investments to CPPIB Capital Inc.

CPP Investments unconditionally guarantees the full payment of principal and interest in respect of short-term and long-term debt issued by CPPIB Capital Inc. Should CPPIB Capital Inc. fail to make required debt servicing payments, investors can seek payment from CPP Investments without first exhausting recourse to the debt issuer. The guarantees from CPP Investments are unconditional, irrevocable, and meet DBRS Morningstar's *North American Structured Finance Flow-Through Ratings* methodology.

Ranking and Legal Issues

In contrast with pension plans and similar to the Public Sector Pension Investment Board (rated AAA with a Stable trend by DBRS Morningstar), CPP Investments has no direct responsibility for the obligations faced by the CPP in relation to the benefits owed to Canadians. This greatly reduces the volatility of CPP Investments' net asset position.

The CPP Act and the CPP Investments Act create a system of debits and credits that legally entitles CPP Investments to retain at all times assets that have a fair market value not less than its liabilities, including the liabilities under the guarantees in respect of debt issued by CPPIB Capital Inc.

Rating History

	Current	2019	2018	2017	2016	2015
Issuer Rating	AAA	AAA	AAA	AAA	AAA	AAA
Canadian Short-Term Promissory Notes	R-1 (high)	R-1 (high)	R-1 (high)	R-1 (high)	R-1 (high)	R-1 (high)
U.S. Commercial Paper Notes	R-1 (high)	R-1 (high)	R-1 (high)	R-1 (high)	R-1 (high)	R-1 (high)
Euro Commercial Paper Notes	R-1 (high)	R-1 (high)	R-1 (high)	R-1 (high)	N/A	N/A
Medium-Term Notes	AAA	AAA	AAA	AAA	AAA	AAA

Related Research

- *Rating Canadian Public Pension Funds & Related Exclusive Asset Managers*, April 2020.
- *North American Structured Finance Flow-Through Ratings*, January 2020.

CPPIB Capital Inc. Debt Limits

- Unsecured debt outstanding:
    - Total: $40 billion
    - Remaining term less than one year: $15 billion

Previous Report

- Canada Pension Plan Investment Board & CPPIB Capital Inc.: Rating Report, June 20, 2019.

Notes:
All figures are in Canadian dollars unless otherwise noted.

About DBRS Morningstar

DBRS Morningstar is a global credit ratings business with approximately 700 employees in eight offices globally.

On July 2, 2019, Morningstar, Inc. completed its acquisition of DBRS. Combining DBRS' strong market presence in Canada, the U.S., and Europe with Morningstar Credit Ratings' U.S. footprint has expanded global asset class coverage and provided investors with an enhanced platform featuring thought leadership, analysis, and research. DBRS and Morningstar Credit Ratings are committed to empowering investor success, serving the market through leading-edge technology and raising the bar for the industry.

Together as DBRS Morningstar, we are the world's fourth-largest credit ratings agency and a market leader in Canada, the U.S., and Europe in multiple asset classes. We rate more than 2,600 issuers and 54,000 securities worldwide and are driven to bring more clarity, diversity, and responsiveness to the ratings process. Our approach and size provide the agility to respond to customers' needs, while being large enough to provide the necessary expertise and resources.