

### INVESTING FOR OUR CONTRIBUTORS & BENEFICIARIES





#### Table of Contents Operational Highlights 2 3 Performance Chairperson's Report 4 President's Message 7 Purpose 10 Advantages 12 Global Investments 14 Our People 16 17 Senior Management Team Our Mission and Investment Strategy 18 Management's Discussion & Analysis 42 Compensation Discussion & Analysis 70 Governance Practices of the Board of Directors 86 Financial Statements and Notes 97

CPP Investment Board is an investment organization established to help ensure the Canada Pension Plan (CPP) will be there for generations to come.

We compete around the world to secure and manage public and private assets to maximize returns and deliver sustainable value. We have global teams who bring deep expertise and local knowledge.

We ensure the Fund has both asset and geographic diversification to make the Fund more resilient to single-market volatility and to safeguard the best interests of current and future beneficiaries against other factors affecting the funding of the CPP.

Our success depends on the strength of our governance framework, which safeguards our sole investment focus while upholding our accountability to the 20 million CPP contributors and beneficiaries.



## Operational Highlights

### Scaling Our Investment Programs

- > Grew equity programs in Public Market Investments by \$10.0 billion in assets under management through new and follow-on investments, including an approximate 20% stake in Advanced Disposal Services, Inc., the fourth largest solid waste company in the U.S.
- > Committed \$14.0 billion in Investment
  Partnerships including the acquisition of
  an 8.3% stake in MISA Investments
  Limited through our Thematic Investing
  team. MISA is the parent company of
  Viking Cruises, a market-leading river
  and ocean cruise operator with strong
  long-term growth drivers.
- > Deployed \$9.9 billion in Private Investments including the acquisition of Ascot Underwriting Holdings Ltd. and certain related entities, together with Ascot's management, for US\$1.1 billion. Ascot is a Lloyd's of London syndicate and a global specialty insurance underwriter with expertise spanning multiple lines of businesses.
- > Committed \$12.9 billion in Real Assets including our first infrastructure investment in Mexico, a stake in the concessionaire of the Arco Norte toll road, one of the largest federal toll road concessions in Mexico.

### **Developing Talent**

- > Over 800 employees took part in organization-wide training programs.
- > Expanded and improved our talent development initiatives including the launch of a leadership development program for Managing Directors.
- > Welcomed the inaugural cohort of female students through the Women in Capital Markets Internship Program.
- > Provided more opportunities for employees to receive cross-functional training via secondments and international assignments.
- > Increased campus hiring for both full-time and summer internship roles.
- > Reinforced and renewed employee commitment to our unique culture through the annual Living our Guiding Principles sessions held across the entire organization.

## Expanding Our Global Investment Activities

Grew our investments outside Canada from \$225.8 billion to \$264.7 billion during the year; this represents 83.5% of our total assets.

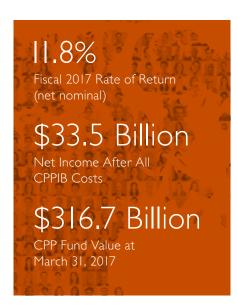
## Continuing to Enhance Our Investment Framework

> Completed the development of key tools for managing and governing the total Fund, including an enhanced daily process to optimize the Fund's return-risk factor exposures, leverage and liquidity, and a new Long-Term Risk Measure for use starting in fiscal 2018 (as described on page 26).

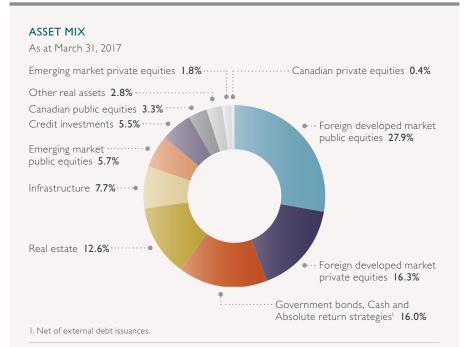
# Completing the Straight-through Processing of Publicly Traded Securities

> Completed the implementation of new trade execution and processing systems to support listed and over-the-counter securities across our public market portfolios. The benefits of this project include improved efficiencies, reduced operational risk and enhanced agility.

## Performance







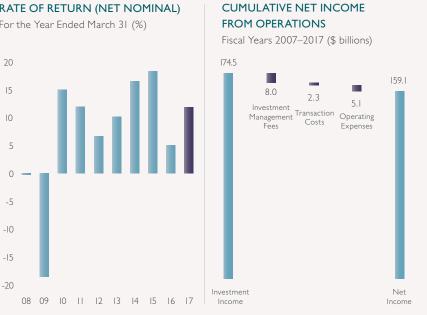
23.1% Real Assets

Fixed Income

55.4% Public and Private Equities 47.1% \$149.1 Billion

in Private Assets

**RATE OF RETURN (NET NOMINAL)** For the Year Ended March 31 (%)



## Chairperson's Report

## Dear fellow contributors to and beneficiaries of the Canada Pension Plan,

I am pleased to report to you on the work of CPPIB over the past year, on your behalf.



CPPIB serves a strong public purpose, playing a significant role in supporting Canada's national retirement income security system, and the confidence you place in your CPP retirement funds. We believe that transparency is the foundation of the trust that our stakeholders place in us. The confidence you have in CPPIB safeguards our singular focus on investing in your best interests, protected from other preoccupations, and at arm's length from governments.

Among the Board's prime responsibilities is to ensure that Management carries out full and timely disclosure to the Board and to the Canadian public. This Annual Report is only one facet of our extensive disclosure, which is described on page 40 of this report. CPPIB's Board holds itself highly accountable through an annual assessment process that evaluates the performance of the Board as a whole, as well as individual committees, the Chairperson and each Director (see page 89). Most importantly, the Board and Management's aspirations are closely aligned in a steadfast commitment to high standards of organizational culture and conduct, and a drive to create governance structures and strategies that support enduring value for our contributors and beneficiaries.

## Global Competitiveness: A Source of Pride and Strength

The celebration this year of Canada's 150<sup>th</sup> anniversary provides a special context within which to consider key attributes that contribute to our nation's success. Among these is the outward-looking nature of Canadians. The relatively small size of our nation's population and of our economy compels us to reach out to the world and, from an economic perspective, to reach out to global markets to achieve growth.

The same can be said of CPPIB. Our global mindset allows us to capitalize on attractive long-term investment opportunities wherever these arise. This ability to "punch above our weight" in the global marketplace is a significant advantage for our beneficiaries. Our geographic diversification serves as a prudent hedge against the CPP's heavy exposure in our home market. With the exception of investment returns, virtually all other factors that impact the economic viability of the Fund – including real wage growth, birth rates, longevity, demographics and immigration – are domestic.

The Canadian market, representing less than 3% of the world's capital markets today, is too small and undiversified for CPPIB to achieve its investment mandate and properly manage risk if it invested primarily at home. By seeking out the best opportunities around the world in talented people, technology, assets and investment partners, we serve the best interests of Canadians at home.

For Canada and for CPPIB, our global perspectives and global networks are great strengths, and that is worth celebrating.

This sesquicentennial year also marks a pivotal juncture for one of Canada's most treasured assets, the Canada Pension Plan. In March 2017, legislation became effective to enhance the CPP. Anticipating the implementation of this legislation, CPPIB's Management has been working diligently to ensure the organization will be ready to manage the Additional CPP beginning in 2019, and the Board is confident that CPPIB will be well-positioned to do so.

Former Canadian Prime Minister and former federal Finance Minister, The Right Honourable Paul Martin, played an instrumental role during the development of the CPP reforms in the 1990s. In a foreword written for the Chinese translation of Fixing the Future, a book chronicling the steps taken to ensure Canada Pension Plan's stability, he wrote: "To all those who ask, what is the secret to the CPPIB's success: There is no secret. It is the independence of the Board combined with the crisp and unconfused language created to describe the investment board's mandate."

CPPIB's long-term objective is to maximize returns without undue risk of loss, having regard to the factors that may affect the funding of the CPP. In pursuing this objective, we anticipate short-term periods of market volatility, and our current risk profile anticipates losses of at least 12% one year in ten. Over time, we expect that this risk profile will deliver superior long-term returns.

Within this strategic framework, fiscal 2017 was a good year for CPPIB. Our diversified portfolio achieved a net return of 11.8% after all costs. Assets increased by \$37.8 billion, of which \$33.5 billion came from the net income generated by CPPIB from investment activities, after all costs, and \$4.3 billion from net contributions to

the CPP. Our 10-year real rate of return of 5.1%, after all CPPIB costs, remains above the 3.9% average rate of return that the Chief Actuary of Canada assumes in assessing the sustainability of the CPP. In his latest triennial review issued in September 2016, the Chief Actuary reported that the Base CPP is sustainable until at least 2090.

## Ongoing Oversight of CPPIB's Investment Strategy

The Board's oversight of CPPIB's investment strategy is as much about managing risk as it is about managing opportunities.

The changes in the geopolitical landscape in the past year – Brexit, a new U.S. administration, and political changes across Europe and Asia – intensified further the need for Board efforts to ensure a deep understanding of the factors affecting world events in order for us to provide effective oversight of the organization. This included engagement of Management on its strategy in light of significant geopolitical developments.

Last year, the Board held a meeting in Europe, similar to one it held in Asia in 2014. Such meetings provide the Board with the opportunity to immerse ourselves in our international operations, over a few full days, meeting face-to-face with CPPIB's employees and investment partners globally. This on-the-ground experience is essential to the Board's ability to provide meaningful governance oversight and direction to the globally invested CPP Fund.

The Board was holding its international meeting in London and Brussels during the Brexit vote. Our presence there at that historic moment gave us unique insight into the challenges and geopolitical risks that global investment organizations like ours will face in the years ahead, as well as the investment opportunities.

Climate change is a key element of risk for any responsible long-term investor, and the Board works with Management to ensure CPPIB is prepared to address this challenge. Climate change is incorporated into the Enterprise Risk Management framework in the semi-annual risk reports provided to the Board.

During the year, the Investment Committee of the Board continued to oversee CPPIB's investment decisions, reviewing potential transactions proposed by Management within the Board-approved framework. This year, the Investment Committee of the Board authorized seven major transactions or investment decisions, totalling approximately \$9.5 billion, the appointment of three new investment managers and changes to authority levels for three existing investment managers.

Last year, I wrote about the Board's role as it relates to the oversight of CPPIB's operating budget. I noted that, while we continue to expect expenses to increase as CPPIB builds a scalable platform, increases will remain measured, prudent and aimed at enhancing long-term investment returns. The steadiness in CPPIB operating expenses as a percentage of average assets over the past three years demonstrate this: 33.9 bps in fiscal 2015, 32.0 bps in fiscal 2016 and 31.3 bps in fiscal 2017.

Over the past two fiscal years, there has been a slowdown in the rate of growth of CPPIB's operating expenses, and we are committed to maintaining cost discipline in the years ahead.

The Senior Management Team remains focused on financial discipline, and CPPIB is engaged with reducing costs through automation and streamlining and adoption of best practices, among other measures. Resulting efficiencies will enable CPPIB to continuously redeploy resources to the most value-added activities.

CPPIB is also leveraging its scale to achieve economies. Whereas the assets that CPPIB manages have grown significantly over the years, the ratio of core services professionals to investment professionals has declined. And, while there has been a levelling off in this ratio recently, we expect to continue to realize efficiencies and to see the downward trend of the ratio to resume, as we realize operating leverage from investments in processes and systems. Details of our costs and expenses are found on page 46 of this report.

### **Board Renewal**

Since its inception, CPPIB has adopted a professional approach to Board appointments. This approach is consistent with the founding principle of independence from government, attraction of dedicated and experienced directors and the exigencies of operating in the complex world of global institutional investing and risk-taking. CPPIB strives to meet rigorous

"To all those who ask, what is the secret to the CPPIB's success: There is no secret. It is the independence of the Board combined with the crisp and unconfused language created to describe the investment board's mandate."

The Right Honourable Paul Martin, Canada's former Prime Minister, and former federal Finance Minister

standards of corporate governance, following what we view to be global best practices for our industry and the companies in which we invest. Good governance starts with our Board of Directors.

Directors of CPPIB's Board are appointed by the federal Governor-in-Council (GIC) on the recommendation of the federal finance minister, following the minister's consultation with the finance ministers of the participating provinces and assisted by an external nominating committee. The minister must ensure there is a sufficient number of Directors with proven financial ability and other relevant work experience such that CPPIB will be able to achieve its objectives.

This past year, the Government of Canada established a framework to advance the goals of merit, diversity, openness and transparency in making GIC appointments to Crown corporations, agencies and Boards. CPPIB supports these goals. Indeed, CPPIB is well-known for our leadership on merit and diversity, and we are committed to a strong alignment with government expectations in relation to openness.

As part of this effort, beginning in September 2016 the Board posted a Notice of Appointment Opportunity on CPPIB's website. This provides the general public with the opportunity to view the critical competencies required of a Director and to submit one's name for consideration. Candidates arising from this process augment those identified by external executive search firms to ensure we consider the widest possible range of highly qualified applicants.

I am pleased to report that John Montalbano and Ashleigh Everett were the first Directors approved under this expanded approach, replacing Nancy Hopkins and Pierre Choquette, each of whom completed their Board mandate during the fiscal year.

Following a 2014 amendment to the *CPPIB Act*, fiscal 2017 was the first year that CPPIB's Board included a Director who is not a resident of Canada. The amendment allows us to tap into a global talent pool and further strengthens the Board's international experience and perspective. This is critical as we oversee an organization that now has 83.5% of its assets invested outside of Canada.

During the search for a non-resident Director, the stellar reputation of the Canadian retirement income security system, alongside CPPIB's reputation as a sophisticated global institutional investor, proved to be invaluable. These enhance our capacity to attract outstanding candidates to our Board. In June 2016, we were delighted to welcome Jackson Tai, as he was appointed our first non-resident Director.

### Deep Bench Strength

In fiscal 2017, the Board appointed a new CEO, Mark Machin. Mark, a multi-year member of CPPIB's Senior Management Team, is deeply engaged in leading CPPIB, rapidly demonstrating strong and effective leadership. He transitioned into the role seamlessly, ensuring stability and the uninterrupted focus of the organization on the implementation of CPPIB's sound investment strategy.

During his first year as CEO, Mark fully engaged with all aspects of the business, placing particular emphasis on Canada. He represented CPPIB at the House of Commons Standing Committee on Finance and in meetings with CPPIB's stewards coast-to-coast. We appreciate the enthusiasm, commitment and spirit of collaboration that Mark brings as CEO.

CPPIB's success, of course, rests on many shoulders. We have an excellent, highly experienced Senior Management Team working alongside Mark, and a superbly talented team of employees at home and abroad. The Board and Management are committed to supporting our people across all departments, through staff development opportunities, careful succession planning and initiatives to enhance diversity at all levels, including the Board of Directors.

### In Closing

Over the past two years, I've had the privilege of working with a highly qualified and dedicated Board of Directors. I've also become well acquainted with CPPIB's committed and exceptionally skilled employees at home and throughout CPPIB's global operations. It is a source of pride to serve as Chairperson of this organization where employees work every day with the highest level of integrity as they strive to provide a stable and secure retirement for CPP contributors and beneficiaries. Their contributions to the national fabric of Canada's retirement income security system, and to CPPIB's reputation, are significant. Canadians can take pride in this at all times, and it is especially noteworthy during this memorable year of national sesquicentennial celebrations.

In closing, I pause to thank our two departing directors, Pierre Choquette and Nancy Hopkins, for their outstanding contributions and dedicated service. Appointed to the Board in 2008, Pierre and Nancy have each drawn on fine personal qualities, extensive professional expertise and highly relevant business experience in providing valuable guidance and oversight to our organization. They did so through a period of significant shifts in the investment landscape including the global financial crisis, and our continued growth and evolution. All of us at CPPIB wish them well in their future endeavours.

Finally, on behalf of the Board, I take this opportunity to applaud the Senior Management Team and all CPPIB employees on their work over the past year. Their dedication to serving our 20 million contributors and beneficiaries is truly exceptional.

Dr. Heather Munroe-Blum

Chairperson

## President's Message

### Dear fellow Canada Pension Plan contributors and beneficiaries.

Our celebration of Canada's 150th birthday is an opportune time to reflect on the role Canada Pension Plan Investment Board (CPPIB) plays in the country's retirement income system.

Mark Machin, President & Chief Executive Officer



While the Canada Pension Plan (CPP) was established more than 50 years ago, the creation of CPPIB only came about in the 1990s. CPPIB was established to invest contributions not needed to pay current benefits in order to build a reserve fund to help ensure the sustainability of the CPP for future generations.

Policymakers enshrined our objective into law: to seek a maximum rate of return without undue risk of loss. In doing so, we are explicitly required to act in the best interests of contributors and beneficiaries and to take into account the factors that affect the financial obligations of the CPP. These parameters provide a clear framework for virtually every decision we make.

Before CPPIB began operations in 1999, CPP assets consisted entirely of nonmarketable, non-transferable governments' bonds. The policymakers who created CPPIB rightly deemed that exposure to capital markets was necessary to transform this 100% passive Canadian portfolio into one that would generate sufficient investment income to help sustain the CPP well into the future. Today, Canadians can be assured that the CPP will be there for future generations and that we continue to operate and invest on their behalf with a high degree of transparency and public accountability.

We work hard to earn the trust of workers who depend on the CPP to provide a foundation for their retirement years. To earn that trust, we must be open to scrutiny through both good and bad times. I had the pleasure last year of participating in my first public meeting where I answered questions about our investment strategy and activities from our contributors and beneficiaries. I also travelled across Canada, meeting the federal and provincial governments and testifying before Parliament. I look forward to continuing this dialogue with CPP contributors and beneficiaries and governments across the country in the years ahead.

### Economic and Geopolitical Climate

The unexpected results of the Brexit vote last June and the U.S. presidential election last November reverberated across major public markets. While the consensus was that both outcomes would negatively affect stock values, global equities were resilient and posted strong gains for the year. The result was different in fixed income markets where medium- and long-term interest rates rose meaningfully in North America, leading to losses in U.S. Treasuries and relatively flat returns in Canadian government bonds.

### Our Performance

The CPP Fund generated strong results on both an annual and longer-term basis, demonstrating the ability of our highly diversified global portfolio to generate steady, sustainable returns over a long horizon.

In fiscal 2017, the Fund realized a net return of 11.8% after all of our costs. CPPIB added \$33.5 billion in net income after costs and received \$4.3 billion in net contributions from workers and employers. By the end of our fiscal year, the CPP Fund grew to \$316.7 billion – an increase of \$37.8 billion over last year and \$200.1 billion over the last 10 years.

Our return-risk profile is designed to take advantage of our exceptionally long investment horizon. We tolerate short-term volatility (or swings in our annual returns) in pursuit of superior, sustainable returns over decades. With our current risk profile, we expect to incur losses of at least 12% one year in 10, while achieving superior returns over time. For instance, during the global financial crisis the Investment Portfolio lost 18.8% in value in a single year. Yet, in stark contrast, in 2015 we had our highest ever net return of 18.3%. Individuals and even pension plans with different liabilities simply would not be able to accept that same level of volatility. Our ability to do so continues to be a strong competitive advantage and allows us to generate superior returns over the long term.

Our 10-year net rate of return is 6.7% and our five-year net return is 11.8%. The Chief Actuary noted in his most recent three-year review of the CPP that investment income

from 2013–2015 was 248% higher than anticipated due to our strong investment performance.

### Our Investment Strategy

### Achieving Strong, Sustainable Returns Through Active Management

My predecessors decided more than a decade ago that actively managing the CPP Fund was the best way to maximize long-term returns. Following an extensive analysis of our competitive position in the market, we decided that our comparative advantages – specifically our scale, certainty of assets and long investment horizon – would be better utilized through active management. This decision was not made lightly; we could have chosen to continue passively managing the Fund. Yet, today we firmly believe it was the right decision. Other investors have some of these advantages – it is rare to possess all three.

Active management at CPPIB means that we proactively research, select and buy and sell individual securities, instead of setting a specific portfolio allocation based on an index. It also means that we seek to diversify the CPP Fund, by both asset classes and geography, beyond what we could achieve through a passive portfolio.

Our Total Portfolio Approach, described on page 21, helps us understand the underlying risks of different investment opportunities. Currently, 83.5% of the CPP Fund's assets are invested in international markets in a variety of asset classes, including private equity, infrastructure, real estate and public markets. Such diversification is vital for the CPP Fund because most factors affecting the Fund's sustainability birth rates, longevity, domestic economic performance and wage stagnation – are Canadian in origin and beyond our control as investment managers. By actively diversifying the Fund around the world and across asset classes, we are seeking investment returns to hedge against the risk these factors pose to the level of contribution rates and benefits paid.

While we are confident active management is the right strategy, we know that actively competing with investment firms around the world to secure the best assets requires considerable operating expenses. Our

performance must justify those expenses and this is why we measure and clearly publish our results net of all costs.

We measure our active management strategy using a dollar value-added approach to compare our Investment Portfolio returns against a Reference Portfolio comprising public market indexes. By design, we do not attempt to beat the market every year, but rather look to add value over the long term.

This fiscal year, the Reference Portfolio's return of 14.9% outperformed the Investment Portfolio's net return of 11.8%. On a dollar value-added basis, the Investment Portfolio's return was \$8.2 billion below the Reference Portfolio's return after deducting all costs.

When public markets soar, as they generally did this year, we expect the Reference Portfolio which is a public equity-based benchmark to perform exceptionally well. As we continue to build a diversified portfolio beyond public equities, we expect to see swings in relative performance, either positive or negative, in any single year. What matters is the long-term value we create.

Over the five- and 10-year periods, the Investment Portfolio continued to outperform the Reference Portfolio by \$5.6 billion and \$6.7 billion.

Since starting active management, our strategy has contributed \$8.9 billion in dollar value-added after all costs. It has also created a more resilient portfolio able to weather market downturns.

### Strategic Plan

In 2013, we introduced a strategic vision to evolve our investment framework and implement a multi-year business strategy by 2020.

While most organizations have a strategy or a vision, the successful companies are those that are able to skillfully implement their strategy, taking into account new developments. I am proud of my colleagues at CPPIB and their successful implementation of our strategic plan thus far and I am confident that we will meet our objectives by 2020. In the coming year, CPPIB Management will start to engage with the Board of Directors to assess the

continuing evolution of our strategic plan going beyond 2020 and I look forward to reporting back to you on this process.

### Building a World-class Investment Organization

With our exceptionally long investment horizon and certainty of assets, we are building an organization that will last for generations. Compared to our Canadian pension and financial industry peers, we are a relatively young organization. Nonetheless, we are projected to manage approximately \$370 billion by 2020, with continued growth into the future. We know this with some certainty and must plan accordingly.

We need to build scalable programs today that can handle the increased size of tomorrow. To diversify the Fund prudently, we need an international presence to access and evaluate investment opportunities and closely monitor our assets. To exploit the range of investment options available, we are continuing to establish diverse programs that can tackle investment transactions of the scale and complexity of, for example, a large private company in the U.S., or a significant real estate investment in Australia, or a toll road in South America, or a stream of royalty payments from a pharmaceutical drug.

Our organization requires people with the expertise to sift through a myriad of investment opportunities and identify those that will generate above-market returns, while prudently diversifying the overall portfolio and enhancing the resiliency of the Fund.

Finding the right assets is just the beginning. Conducting due diligence, valuations and negotiations, closing deals, and then carrying out ongoing asset management, demand experienced professionals with the right skills.

Obtaining and retaining strong talent both domestically and internationally is, and will continue to be, a top priority for CPPIB. We are investing in our employees and their development through new, expanded and improved talent development initiatives.

An inclusive environment that recognizes, understands and adapts to the differences amongst our diverse talent pool in order

to recruit, develop and promote the best and brightest is critical to encouraging the diversity of thought and approaches that leads to better decision-making. By 2020, our goal is to have women represent half of all our new hires. In fiscal 2017, 48% were female, an increase of 2% over the previous year. At the end of fiscal 2017, there was 28% female representation at the Managing Director and Senior Managing Director levels, with overall female representation of 43% across all levels. While we are continuing to make progress, there is more work to be done to ensure that we are consistently hiring and developing the most talented people across our organization.

#### Reflections on the Year

The federal and provincial governments took a major decision in 2016 to provide an addition to the Canada Pension Plan. This decision has implications for how we think about building our organization and for how we manage the additional funding in relation to the current base CPP.

We are well prepared to manage a larger Fund; most of our investment programs, processes and technologies were specifically designed to scale up as needed. There will be greater reliance upon investment income to pay for the additional CPP, and we must take this into account. At the same time, the investment of the additional contributions will require a much more conservative return-risk profile than the base CPP Fund. Nonetheless, we are comfortable that our active strategy remains appropriate and look forward to reporting to you on the additional fund in due course.

Finally, we are continuing to evolve how we integrate climate change considerations across our investment activities, including closely following the long-term transition to a lower-carbon economy. Climate change has been a focus for our Sustainable Investing team for the last decade, yet we continue to evolve our investment approach in consideration of climate change-related risks and opportunities. As an investor with a long horizon, we have the ability to act as a patient provider of capital and to engage with the companies that we invest in to bring about change. We encourage these companies to provide better disclosure regarding risks and opportunities

related to climate change. We believe that engaging with companies on this topic and pressing for improvement, often in collaboration with other investors, will help build long-term value.

#### The Year Ahead

CPPIB will focus on six objectives for the next fiscal year to build our organization and deliver more value to CPP contributors and beneficiaries. In fiscal 2018, we will:

- Scale our investment activities from all three sources of return: investment selection, diversification and strategic tilting;
- 2. Expand our global investment activities;
- Continue the multi-year implementation of our enhanced investment framework:
- Develop talent with a focus on increasing diversity, early career hiring and building future leaders from within our organization;
- 5. Advance our core operational functions; and
- Prepare to accept, invest and report on the additional Canada Pension Plan contributions.

### Conclusion

It truly is an honour to lead an organization focused on building a CPP Fund that will last for generations. This critical purpose is the cornerstone of our organization and is reinforced with all our employees.

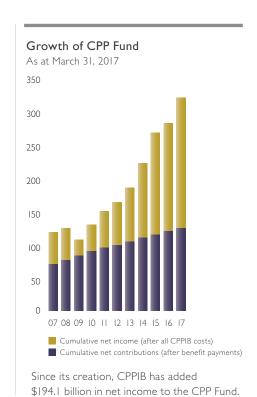
Last, and certainly not least, I would like to thank our Board of Directors and all my colleagues at CPPIB for a highly successful year, and for their relentless commitment and support of our organization and our mandate.



Mark Machin
President & Chief Executive Officer

## Purpose

The CPP Fund has a critical purpose — to help Canadians build financial security in retirement. CPPIB's long-term objective is to invest the Fund assets to maximize returns without undue risk of loss having regard to the factors that may affect the funding of the CPP. We invest funds for the benefit of CPP's 20 million contributors and beneficiaries. We hold ourselves to high standards of investment management, as well as transparency and accountability.



### Why CPPIB was created

In the mid-1990s, concerns arose about the long-term viability of the CPP. CPP assets had started to be depleted in 1993. In response, Canada's provincial and federal governments came together to create bold reforms to ensure the CPP would be there for generations to come. They increased the contribution rates and created Canada Pension Plan Investment Board to invest funds not currently needed to pay CPP benefits.









1966

CPP created.
6.5 workers for every retiree.

1990s

Projections show by 2055 there will be only 2 workers per retiree.

1993

CPP benefits paid out had started to be higher than contributions and investment income coming in. 1997

Canadian governments act to address demographic changes and create CPPIB.

### Our Mandate

CPPIB is separate from the Canada Pension Plan and operates at arm's length from federal and provincial governments. This independence is enshrined in federal legislation. CPPIB is required to take into account the factors that may affect the funding of the Canada Pension Plan and its ability to meet its financial obligations, and to act in the best interest of CPP's 20 million contributors and beneficiaries.

### Our Purpose

To generate investment returns that will help sustain the CPP indefinitely into the future.

### Our Investment Objective

To achieve a maximum rate of return without undue risk of loss having regard to the factors that may affect the funding of the CPP.

### Our Accountability

We report to an independent, highly qualified, professional Board of Directors.

### History and Projections of the CPP Fund

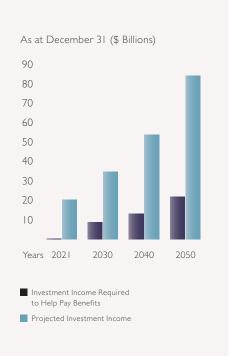
CPPIB's sole focus is investing the assets of the CPP. As at December 31, 2015, the Chief Actuary has projected that the CPP Fund will reach approximately \$370 billion by the end of 2020. We have built, and will maintain, a professional investment organization capable of handling this substantial growth.



# 75+ Years Duration of **CPP Sustainability** 20 Million Number of CPP Contributors and Beneficiaries

### Investment Income Required Starting at 2021

The Chief Actuary of Canada has projected that CPP contributions will exceed annual benefits paid until 2021, providing four more years in which excess CPP contributions will be available for investment. Starting in 2021, the CPP is expected to begin using a small portion of CPPIB investment earnings to supplement the contributions that constitute the primary means of funding benefits.



## Advantages

CPPIB benefits from the CPP Fund's exceptionally long investment horizon, certainty of assets and scale. We have also developed a world-class investment team, which we complement with top-tier external partners that support our internal capabilities. We take a disciplined, prudent long-term approach to managing the total portfolio. While no single advantage is unique to our organization, the combination of these comparative advantages provides a strong foundation for investment programs and global competitiveness that help us achieve our long-term objectives.

## \$52.2 Billion

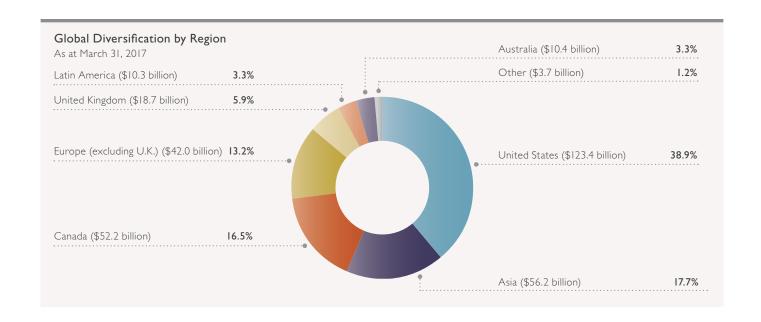
Canadian Assets in the Investment Portfolio

## \$264.7 Billion

International Assets in the Investment Portfolio







### Our Comparative Advantages

### Long-Term View

The 75-year scope of the Chief Actuary's CPP projections enables us to view opportunities, returns and risks over decades, not quarters or years. We are able to withstand short-term losses, staying the course on investments in pursuit of enhanced long-term returns.

### Certainty of Assets

The CPP will collect excess contributions until 2021, providing incoming cash for new investments and allowing us to build and adjust our portfolio with discipline.

### Size and Scale

As one of the largest retirement funds in the world, we can access major opportunities globally that few others can, including in private markets.

### Global Offices



### Historical Comparison of the Investment Portfolio



## Global Investments



### **NORTH AMERICA**

### I. Canadian Office Portfolio Toronto & Calgary, Canada C\$1.175 billion

50% interest in a portfolio of seven high-quality office properties in downtown Toronto and Calgary

### 2. GlobalLogic

### San Jose, California, U.S.

Approximate 48% stake in a global leader in digital product development services

## 3. Advanced Disposal Ponte Vedra, Florida, U.S. US\$280 million

Approximate 20% ownership in the fourth largest solid waste company in the U.S.

### 4. LongPoint Minerals

## Denver, Colorado, U.S. US\$450 million

Initial commitment to an oil and natural gas mineral and royalty interest acquisition company

### 5. U.S. Student Housing portfolio

### United States US\$1.6 billion

Acquired three student housing portfolios with GIC and The Scion Group in premier university markets across the U.S.

### **EUROPE**

### 6. Viking Cruises

## Basel, Switzerland US\$250 million

8.3% ownership in a leading provider of worldwide river and ocean cruises

### 7. Ascot Underwriting Holdings

### London, U.K. US\$1.1 billion

Acquired a global specialty insurance underwriter with expertise in multiple lines of businesses

### 8. Hotelbeds

## Palma de Mallorca, Spain €1.165 billion

Jointly acquired the largest independent business-tobusiness bedbank globally, with Cinven

### 9. Glencore Agriculture

## Rotterdam, Netherlands US\$2.5 billion

40% ownership in a globally integrated agricultural business focused on procurement, storage, processing, transportation and marketing of grains and oilseeds



















### ASIA/AUSTRALIA

### 10. Pacific National

### Sydney, Australia A\$1.7 billion

33% stake in one of the largest providers of rail freight services in Australia

### II. Qube

### Sydney, Australia A\$300 million

9.9% ownership in Australia's largest integrated provider of import-export logistics services

### 12. LOGOS JV

### Singapore & Indonesia S\$200 million (Singapore) & US\$100 million (Indonesia)

Formed two joint ventures with Ivanhoé Cambridge and LOGOS to develop and acquire modern logistics facilities in Singapore and Indonesia

### 13. Bharti Infratel

### New Delhi, India US\$300 million

3.3% ownership in India's largest telecom infrastructure provider

### 14. Chongqing West Paradise Walk

### Chongqing, China C\$193 million

Formed a second joint venture with Longfor Properties to acquire a shopping mall in one of China's largest cities

### LATIN AMERICA

### 15. Arco Norte

### Mexico City, Mexico C\$748 million

29% stake in one of the largest federal toll road concessions in Mexico, in partnership with IDEAL and Ontario Teachers













## Our People



### PUBLIC MARKET INVESTMENTS

### Fundamental Equities - Asia

In fiscal 2017, the Hong Kong-based team in Fundamental Equities almost doubled its active exposure in Asia, to C\$6.0 billion, by initiating or materially growing investments in six different companies. In fiscal 2018, adding investment capabilities in the China A-share market will foster continued growth and diversification in the portfolio.

(I–r) Hidenori Yui, Agus Tandiono, Roman Leifer, Jocelyn Chen, Michael Tao, Prem Samtani, Gloria Song

### REAL ASSETS

### Canadian office portfolio

We expanded our Canadian office portfolio and existing relationship with Oxford Properties Group through the acquisition of a 50% interest in seven high-quality properties totalling 4.2 million square feet at a gross purchase price of C\$1.175 billion. The portfolio is located in downtown Toronto and Calgary.

(I-r) Sophia Thai, Sharm Powell, Peter Ballon, Khan Tran



### PRIVATE INVESTMENTS

### GlobalLogic

We acquired a 48% stake in GlobalLogic Inc., a fast-growing global market leader in digital product development services, with a proven track record, highly experienced management team and deep customer relationships. Our investment allows us to build scale in the highly attractive software engineering services sector.

(I–r) Austin Locke, Nikki Papadopoulos, Inaki Echave, Hafiz Lalani, Viviana Castro, Dalraj Bahia

### INVESTMENT PARTNERSHIPS

### Viking Cruises

The Thematic Investing group, which focuses on long-horizon structural changes and mega trends across the globe, completed its first direct private investment this year. We invested US\$250 million for an 8.3% stake in Viking Cruises, a leading provider of worldwide river and ocean cruises operating more than 60 cruise vessels based in 44 countries.

(I–r) Alex Yang, Pat Naccarato, David Marrello, Daniel Fetter, Caitlin Walsh, Poul Winslow



## Senior Management Team



Left to right:

### Edwin Cass

Senior Managing Director & Chief Investment Strategist

### Mary Sullivan

Senior Managing Director & Chief Talent Officer

### Shane Feeney

Senior Managing Director & Global Head of Private Investments

### Pierre Lavallée

Senior Managing Director & Global Head of Investment Partnerships

### Patrice Walch-Watson

Senior Managing Director, General Counsel & Corporate Secretary

### Mark Machin

President & Chief Executive Officer

### Alain Carrier

Senior Managing Director & Head of International, Head of Europe

### Graeme Eadie

Senior Managing Director & Global Head of Real Assets

### Michel Leduc

Senior Managing Director & Global Head of Public Affairs and Communications

### Nick Zelenczuk

Senior Managing Director & Chief Operations Officer

### Benita Warmbold

Senior Managing Director & Chief Financial Officer

### Eric Wetlaufer

Senior Managing Director & Global Head of Public Market Investments

## Our Mission and Investment Strategy

### How We Manage the CPP Fund

### **OUR INVESTMENT OBJECTIVE**

CPPIB is governed by the Canada Pension Plan Investment Board Act. It directs CPPIB to act in the best interests of the Canada Pension Plan (CPP) contributors and beneficiaries, and to invest "with a view to achieving a maximum rate of return, without undue risk of loss, having regard to the factors that may affect the funding of the Canada Pension Plan." This objective compels us to go beyond simply taking the minimum risk needed to generate a return to maintain the CPP at its current contribution rate.

The Act sets no specific investment requirements. There are no specific limitations on geographic, economic, development or social objectives. As a result, we have an unambiguous responsibility: to maximize longterm returns at an appropriate level of risk that we maintain below a level we would consider to be undue.

### **OUR PURPOSE**

Our purpose is to help provide a foundation on which Canadians can build financial security in retirement. When the CPP began in 1966, the rate of contributions was set guite low but with the clear expectation that it would rise over the years. By 1997, there was serious concern about the long-term viability of the CPP, despite several increases in the contribution rate. In response, the federal and provincial governments worked together to place the CPP on a more secure financial footing. They made two major changes. First, they introduced a system to set contribution rates at a long-term, stable level. Second, they allowed the Fund to invest broadly in the capital markets, including equities, in order to seek higher long-term returns.

One of the most significant outcomes of the 1997 reforms was the creation of the CPP Investment Board to take over investment management of the CPP Fund. Until March 1999, when net cash flow (the excess of CPP contributions over CPP benefits paid out and CPP expenses) started to be transferred to CPPIB for investment, the CPP Fund was invested only in non-marketable Canadian, federal, provincial and territorial bonds, (the "CPP Bonds"), with a fair market value of \$44.9 billion. Since then, we have built a professional investment organization whose investment strategy has generated \$194.1 billion in net income to date. Together with the \$77.7 billion from CPP contributions (after benefit payouts), the Fund has grown to its current fair value of \$316.7 billion.

It is critical that the Fund be managed so as to offset the risks that the CPP itself faces. The primary risk exposures of the CPP - an aging population, longer life expectancies and Canadian economic growth and employment are highly weighted to Canada. This is a key reason why we have 83.5% of the Fund diversified into investments around the world outside Canada.

Our team is recognized globally for its breadth and depth of expertise, and for its demonstrated capability to handle the growth of the CPP Fund. But managing a fund responsibly and successfully is not only about investment skills - it is equally about the organization's culture.

CPPIB's strong and unifying culture is founded on our Guiding Principles -Integrity, Partnership and High Performance. All new employees receive in-depth orientation on the meaning and consequences of these three core principles that guide everything we do. All staff members attend an intensive workshop every year devoted to reviewing the Guiding Principles, discussing how they apply through case studies, and reinforcing their use in everyday duties. Our annual employee performance reviews include an assessment on how each employee has demonstrated these principles in their work. We evaluate employees' performance not only on their results but also on how they have achieved them.

### ADDITIONAL CANADA PENSION PLAN

In December 2016, following federal and provincial agreement, Royal Assent was given to Bill C-26, an Act to amend the Canada Pension Plan. This Act increases the amount of retirement pensions and other benefits that will be paid on contributions made after 2018. It also increases the upper limit of covered earnings. Beginning in 2019, additional contributions will be required, set at levels high enough so that together with investment income they are sufficient to fully pay these additional benefits. A seven-year phase-in of the expansion begins on January 1, 2019.

The additional contributions, benefits and assets will be accounted for separately from the current "Base CPP", under what is called the Additional Canada Pension Plan (ACPP) account. Management is working diligently to ensure the organization is ready to manage the ACPP.

### INDEPENDENCE WITH **ACCOUNTABILITY**

The CPP Fund is managed independently of governments. All the assets in the Fund are legally and beneficially owned by CPPIB and are entirely separate from any government's assets. Unlike Old Age Security, CPP benefits do not come from tax revenues. CPP contributions by plan members and employers are not a tax but rather a separate contribution to be invested in the Fund, whose sole purpose is to help support the CPP. The money required to pay CPP benefits thus comes from only two sources:

- > Contributions from plan members and their employers, based on employment earnings covered by the CPP; and
- > Investment returns earned on the CPP Fund, after all related costs.

Canadians expect the CPP to remain free from political interference. Under the 1997 CPP reforms, the federal and provincial finance ministers enshrined that independence with carefully written legislation. It ensures that we can, and do, operate at arm's length from any government.

To maintain the public's trust through a careful balance between independence and accountability, we operate in a highly transparent way. This includes:

- > Explaining on our public website who we are, what we do and how we invest;
- > Disclosing our investment activities and major transactions;
- > Issuing timely reports about our assets, portfolio and performance results; and
- > Complying fully with all legislative requirements, such as public meetings every two years.

Similarly, our Board of Directors is accountable to the stewards of the CPP, the federal and provincial finance ministers. Our diverse Board is appointed on the recommendation of the federal finance minister, following consultation with the provinces. The governance structure and operation of CPPIB has been described as a model for independent investment of a public pension fund.

CPP members and beneficiaries can take comfort in knowing the 1996–97 reforms cannot easily be changed. Amendments to the governing CPP and CPPIB legislation require agreement by the federal government plus two-thirds of the provinces representing two-thirds of the population. This is a higher requirement than for changes to the Canadian Constitution.

## CURRENT AND FUTURE STATUS OF THE CPP FUND

Every three years, the Office of the Chief Actuary of Canada reviews the contribution rate required to sustain the CPP over the next 75 years. This review takes many factors into account, including:

- > The growing base of contributors and employment earnings;
- > The rising ratio of pension benefit recipients relative to employed contributors, as baby boomers retire; and
- > Expected increases in life expectancy.

The most recent actuarial review was conducted as of December 31, 2015, and the 27<sup>th</sup> Actuarial Report was released in

September 2016. It showed investment income over the three years since the previous review was 248% higher than expected, resulting in Fund assets that were \$70 billion higher than anticipated by the end of the period. The Report concluded that the CPP can maintain prospective benefits by continuing contributions at the current legislated rate of 9.9% of covered earnings. In fact, the current contribution rate provides a slightly higher safety margin than in the previous report.

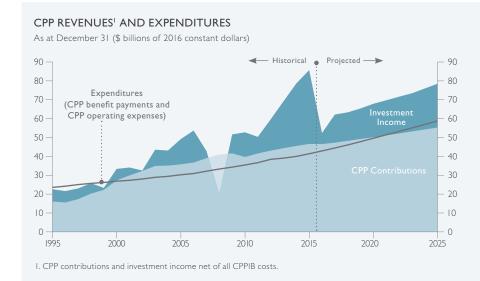
A key assumption in the review is that, over the 75 years from 2016, CPP Fund investments will earn an average annual rate of return of 3.9% above the rate of the Canadian consumer price inflation index, after all investment costs and operating expenses.

The Chief Actuary has projected that annual CPP contributions will exceed annual benefit payments until 2021. The CPP is then expected to begin drawing on the Fund's investment earnings to supplement contributions.



The 27<sup>th</sup> Actuarial Report projects that the CPP Fund will grow to approximately \$400 billion (after adjusting for inflation) by December 2025. At a current value of \$316.7 billion, the Fund is well on track towards that level.

Taken from the 27<sup>th</sup> Actuarial Report, the chart below shows CPP Revenues (contributions plus investment income) and Expenditures (benefits paid out plus CPP operating expenses) since 1995 and projected to 2025. All figures are in billions of 2016 constant dollars.



### From the 27<sup>th</sup> Actuarial Report:

- > The assets grow continuously over the projection period. During the period 2016 to 2020, contributions are more than sufficient to cover expenditures.
- > From 2021 onward, a portion of investment income is required to fund net cash outflows.
- > Investment income, which represents 11% of revenues in 2016, will represent 30% in 2025. This clearly illustrates the importance of investment income as a source of revenues for the Plan.

# Our Investment Strategy

In this section, we explain CPPIB's approach to investing to meet the Fund's objectives. The sidebar provides a brief history of how our investment strategy has evolved over the years.

## DEVELOPMENT OF INVESTMENT STRATEGY SINCE 1998

Since taking over responsibility in 1998 for the investment of the CPP Fund, CPPIB has steadily broadened and diversified the asset and geographical mix of the Fund, and the distinct strategies used to enhance long-term returns.

## WHAT DIFFERENTIATES CPPIB'S INVESTMENT APPROACH

The foundation of our investment approach is the belief that the nature of the CPP Fund, our governance and independence, our culture and the strategic choices we make give CPPIB major advantages over

other investors. While no single advantage is unique to CPPIB, collectively they reinforce each other and are enjoyed by few others. These comparative advantages drive our global competitiveness, and our strategies to maximize long-term Fund returns.

### **OUR INHERENT ADVANTAGES**

The nature of the CPP Fund itself carries three distinct investing advantages:

Long horizon – By law and its purpose, the CPP must serve Canadians for many generations to come. As a result, the CPP Fund has a much longer investment horizon than most investors. We can assess the prospects of our strategies and opportunities over decades, not guarters or years. And we can withstand shortterm losses to pursue higher long-term returns. Most investors take a shorterterm approach, whether by choice or because they are forced to by business pressures or legislation. We can pursue the opportunities created by these shorter-term investors and take advantage of investments they either ignore or cannot access.

Certainty of assets to invest - The CPP Fund's future asset base and pattern of cash flows are largely predictable and guite stable. We can reliably expect annual contributions to exceed annual benefits through fiscal year 2021. More importantly, annual cash income from the investment portfolio will comfortably exceed the amounts needed to pay benefits for the foreseeable future. As a result, we are not forced to sell assets to pay benefits and can also thoughtfully design and build programs in anticipation of future investment needs. Nevertheless, we carefully maintain sufficient liquidity at all times in the Fund to make major new investments, meet any CPPIB contractual obligations, and adjust the portfolio mix. This certainty of assets and cash flows underpin our ability to act as a long-term financial partner in major transactions.

Scale – As one of the largest retirement funds in the world, we can globally access opportunities for which few others can compete. We are able to make major investments in private markets, and use

public market strategies that are not readily accessible to many investors. In addition, our size enables us to build highly skilled in-house teams. We can also develop the investment technology and operational capabilities needed to support our wide range of strategies. By handling many investment and operational activities ourselves, we can achieve a cost-effective global investing platform.

#### **OUR DEVELOPED ADVANTAGES**

The choices we make as an organization afford us three key strategic advantages:

Internal expertise – We employ a world-class investment team across eight financial centres. The team combines depth, experience and broad expertise, both in managing assets internally and working with external partners. We are able to attract and motivate high-calibre executives, investment professionals and operational specialists from around the world.

Expert partners – Internal capabilities alone could not match the variety and innovation of global capital markets and investment strategies. As a result, we also engage the specialized expertise of many top-tier external partners around the world. These organizations in several countries research and enhance access to major investment opportunities; provide in-depth, on-the-ground analysis and local knowledge; and supply ongoing asset management services.

Total Portfolio Approach – We do not allocate assets through conventional labels such as "real estate" or "equities". Instead, we rigorously delve into the fundamental and more independent return-risk factors that underlie each asset class, strategy and type of investment. This allows us to better understand and quantify the various return-risk characteristics of each investment program. With this understanding, we can more effectively combine them into a truly diversified total portfolio that is designed to maximize expected returns at our targeted level of risk.

### **EVOLUTION OF OUR INVESTMENT STRATEGY**

1999

Invested for the first time in publicly traded Canadian and foreign stocks, by mirroring the composition of stock market indexes.

001

Launched investment programs in private equity and real estate, initially through external funds and in later years increasingly through direct investments.

2003

In-house investment staff took on the management of our index-based equity portfolios.

2004

Initiated a degree of active equity management and acquired our first infrastructure assets, such as toll highways, water supply facilities, and electrical power generation and transmission systems.

2005

Upon removal of all limits on investments in non-Canadian assets, we broadened our investments in both developed and emerging economies. This has steadily reduced the Fund's dependence on the narrowly based Canadian economy and capital markets.

2006

Made the strategic decision to move progressively away from largely index-based investments towards the more active selection of investments, in order to capitalize on our comparative advantages.

For accountability, we established the low-cost, readily investable Reference Portfolio as the passive investment benchmark for Fund returns.

2007

Began building major holdings of Canadian and Group of Seven industrialized country (G7) government bonds (beyond the legacy CPP Bonds inherited from 1998). This helps us to maintain the desired balance of equity and debt investments in the total portfolio.

2009 to 2014 Expanded into private debt and commercial property mortgages (2009), intellectual property such as drug patent royalties (2010), agricultural land and other resource holdings (2013), and thematic investing (2014).

2014 to Present We significantly broadened the range and size of public market strategies managed with external partners. More significantly, we also began investing in operating companies with experienced management teams, as an efficient way to build scale in a defined market or geography.

### HOW WE CREATE VALUE FOR THE CPP FUND THROUGH ACTIVE MANAGEMENT

In 2006, CPPIB made the strategic decision to actively manage the Fund to a much greater degree, with the Reference Portfolio as the performance benchmark. In the 11 years since, active management has added \$8.9 billion over the Reference Portfolio target, after all costs and operating expenses. See page 25 for more details about the Reference Portfolio.

Pursuing an active, global strategy is a fundamental decision, which we take and review with considerable seriousness and rigorous analysis. Many investors seek above-market, risk-adjusted returns. Few consistently achieve them. Active management is not a low-cost approach; it increases costs and complexity as we deal with additional sources of risk. But we believe that under our mandate we have an obligation to use our comparative advantages actively. We expect that our active management will generate significant and enduring value-building growth.

Success in active management requires not only real investment insights but also well-structured processes to capitalize on them. It also means having the right resources to access and negotiate large, often complex, deals in private markets, and to manage and grow these assets over time. And, it means having the right expertise to identify and execute the best strategies in public markets. The leading long-term investors in the world's marketplaces will be those with the most talented and disciplined investment teams. As we expand our

value-creating investment programs, we allocate our internal resources and skills where they will have the most impact in diversifying risks and maximizing long-term returns.

Another way for CPPIB to increase long-term returns is to conduct itself as an active owner or lender in the companies in which we invest. We believe this conduct not only boosts long-term returns, but also improves the functioning of markets for all stakeholders.

To continue the momentum of the Focusing Capital on the Long Term initiative, in 2016 CPPIB, along with McKinsey & Company, BlackRock, Dow Chemical and Tata Sons founded FCLTGlobal as a non-profit organization dedicated to developing practical tools and approaches that encourage long-term behaviours in business and investment decision-making. More can be found at the website fcltglobal.org.

## THE THREE COMPONENTS OF TOTAL PORTFOLIO RETURN

We approach the generation of total returns through three basic sources:

- I. Diversification;
- 2. Investment selection; and
- 3. Strategic tilting.

Active management creates value for the CPP Fund in the following ways:

### I. DIVERSIFICATION

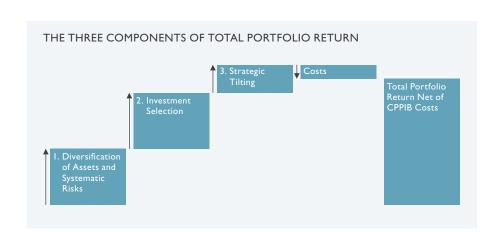
Diversification means how we choose to deploy the Investment Portfolio over the long term across a wide range of asset classes and types, across countries and currencies, and across underlying return-risk factors. The average mix we choose over time is the single biggest influence on the Fund's total portfolio risk and return.

Our passive benchmark, the Reference Portfolio, contains only global public equities and nominal bonds issued by Canadian governments. Our decision to diversify very broadly beyond the Reference Portfolio into both other public, but also private assets, provides the most reliable source of additional long-term returns. As a result, we maintain significant investments in almost all of the primary asset classes, in both developed and emerging markets around the world. These investments are of three broad types:

a) Public markets securities – The Fund profits from economic growth through equity ownership and credit investments in public corporations around the world. To help diversify the sources of total return and sustain necessary liquidity (the ability to readily sell assets when needed), the Fund also has meaningful holdings of government bonds.

### Long and Short Investing

A long investment is one that generates a return when the underlying asset increases in value. An example is a traditional stock purchase. A short investment is one that generates a return when the underlying asset decreases in value. In short selling, the investor sells a stock that he/she has borrowed, and buys it back later to pay off the stock loan. If the stock's price then is lower, the investor makes a profit. Taking both kinds of positions simultaneously can be structured to greatly reduce the impact of overall market movements and increases focus on the selection of individual securities.



Several of our public markets strategies employ both long and short positions. Because the values of long and short positions offset each other, simply measuring the net assets in our active public markets programs greatly understates their impact on the portfolio. To see their impact more fully, we calculate assets under management, a figure that is more comparable to the size of assets in other areas. The chart on page 23 shows the growth of our active public market investments using this measure.

#### b) Private company investments -

We invest in the equity and debt of privately held companies, and in other areas such as royalties, both directly and through funds and partnerships. These investments generate returns from underlying corporate earnings in the same way as comparable public companies. However, we also expect well-selected private company investments to deliver extra returns that more than cover their higher costs and any additional risks.

c) Real assets – These investments generate returns from tangible assets through very different fundamental sources, such as property income, facility user fees, oil and gas revenues, etc. They include investments in real estate, infrastructure, agricultural land, energy and natural resources. We hold them primarily through private partnerships or other entities, as both equity or debt interests.

We have made a major commitment to capitalize on our comparative advantages by investing in private markets. Over the long term, many private markets are expected to provide better net returns than the nearest public equivalents. With their potential for large transactions, private markets fit our advantages of scale and certainty. Also, these investments carry a higher return to compensate for their illiquidity, which the Fund can absorb due to its long investment horizon and certainty of assets. In addition, the special expertise that we and our partners bring is a differentiating and durable strength for success in these markets. The reputation that CPPIB has earned gives us access to private market opportunities around the world.

The key to optimal diversification is to understand both the short-term volatilities and the long-term risks underlying each broad investment area and each investment program, and how they relate to each other. Only those investment areas and programs that have fundamentally different sources of value creation can offer true diversification. The risk and expected return of the total portfolio depends primarily on how we combine systematic and non-systematic risk exposures to meet our investment goals.

## Systematic and Non-systematic Risks

Investment returns cannot be earned without accepting some form of risk – as the saying goes, there is no free lunch. Investors face two general types of risk: systematic and non-systematic.

- > Systematic risks stem from common factors that affect all investments of a particular type. These risks can be diversified, but not eliminated. We believe that over sufficiently long periods, asset prices and income will adjust to deliver the returns required by investors to justify exposure to systematic risks. The market returns earned over time from systematic risk factors are often
- Non-systematic or "idiosyncratic" risks are those that are unique to a particular selected asset or investment. The gains or losses (relative to a benchmark index) that arise from intentional exposure to non-systematic risks are often called "alpha". Non-systematic risk can be substantially reduced through diversification within specific investment types, but this also reduces potential alpha.

As research into markets continues, the line between market-based beta and skill-based alpha is increasingly blurred. Regardless of label, CPPIB balances risk exposures to focus on maximizing total net return, at the targeted total risk level, from all sources.

### 2. INVESTMENT SELECTION

Investment selection means how we select, buy, weight and sell specific securities, investments and sectors, through internal or external management. This alpha generation activity offers a very wide set of opportunities to the skilled manager, in both private and selected public markets.

The potential value-add from investment selection is comparable to that from diversification. However, it is less reliable and carries higher costs, and the net impact can be negative. Nevertheless, we believe that many of CPPIB's advantages put the odds of success in our favour.

Because of the shorter-term investing pressures and practices found in many markets, individual security prices and current valuations are often very different from the long-term intrinsic value and earnings potential that matter most to CPPIB. This creates opportunities for insightful management. Careful investment selection focused on the long term can succeed in virtually every asset class except the most price efficient, and particularly so in less-developed markets. Also, skilled management using long or short strategies in public markets can add value whether markets are rising or falling. Such pure alpha return is extremely valuable as, properly controlled, it adds relatively little to total risk in the portfolio while contributing significantly to total return.

Outperforming competitive markets is a challenging task, and doing so sustainably is even more so. The opportunity to add value also changes as market conditions favour one strategy or another. To stabilize overall performance, we carefully diversify investment selection over 25 distinct investment programs managed by separate

### GROWTH OF ACTIVE INVESTMENTS IN PUBLIC MARKETS

ASSET TYPE (\$ billions)	2005	2010	2015	2016	2017
Assets Under					
Active Management	1.4	16.2	66.3	71.7	71.7

Assets under management (AUM) for active investments in public markets is computed in the following ways: For internal long/short securities-based programs, we use the value of the long side of the program. For investments in externally managed funds, we use the reported net asset values. In fiscal years prior to 2017, certain AUM figures included an implied asset amount using a risk-based approach.

The chart below shows the growth of our private investing programs.

#### GROWTH OF PRIVATE MARKETS INVESTING PROGRAMS

ASSET TYPE (\$ billions)	2005	2010	2015	2016	2017
Private Equity <sup>1</sup>	2.9	16.1	50.4	51.5	57.8
Real Estate	0.4	7.0	30.3	36.7	40.1
Infrastructure	0.2	5.8	15.2	21.3	24.3
Other Real Assets <sup>2</sup>	_	_	_	2.3	8.7
Private Debt	_	0.9	8.0	17.0	16.8
Private Real Estate Debt	-	0.3	3.8	4.1	4.8
TOTAL	3.5	30.1	107.7	132.9	152.5
% of Net Investments	4.3%	23.6%	40.7%	47.6%	48.1%

- I. Includes \$3.4 billion of public equities managed within the Private Equity program.
- 2. Other Real Assets includes Agriculture and Natural Resources. Balances for 2016 have been recalculated to the current year's presentation. Prior to 2016, these amounts were reported within Private Equity.

### Climate change

Climate change is among the most challenging issues that we consider as a long-term investor. It poses a number of significant investment risks, but also opportunities in areas such as renewable energy. We are:

- > Assessing investment strategies and processes across our investment departments as they relate to the identification and analysis of climate change risks and opportunities;
- Identifying and considering alternative approaches to conduct a top-down assessment of climate risk for the total portfolio; and
- > Ensuring that climate change is appropriately incorporated into our risk framework.

To learn more about our approach to climate change, please see page 34 and our 2016 Report on Sustainable Investing.

groups. Several programs involve more than one strategy and some employ many. These include:

- a) Large-scale transactions Taking advantage of special opportunities available only to large, sophisticated investors. Alone or with partners, we can access, structure and carry out major transactions globally in private equity, principal lending, infrastructure, real estate and natural resources.
- b) Private markets deals Skillfully selecting and negotiating individual private equity and debt investments. When the opportunity presents itself, we can exit them at a time of our choosing on advantageous terms. The specialized teams in our Private Investments, Real Assets and Investment Partnerships departments focus on this activity, along with their expert external partners.
- c) Long-term value investing Buying and selling individual public securities or sectors that are substantially mispriced relative to their intrinsic value. With our long investment horizon, we can be patient and profit from longer-term indicators more than most other managers. Our Fundamental Equities group, and select external specialist managers, supply this expertise.
- d) Thematic investing Investing through "themes," by anticipating long-term structural changes and broad trends such as demographic shifts or alternative energy transitions. These are developments that we expect will affect security prices significantly but which emerge over the longer term.

Our specialized teams develop investment portfolios to capitalize on these trends, working with external partners where appropriate.

We regularly review the thinking behind all investment selection programs as well as their execution. This lets us assess whether the programs remain likely to deliver meaningful and sustained value for the costs and risks involved. If our conclusion changes, we adjust or curtail the strategies.

### 3. STRATEGIC TILTING

Strategic tilting is a deliberate, temporary shift of asset allocations and factor exposures away from the portfolio's established long-term targets. We do this when we believe there are disparities between current market pricing and long-term fundamental values for specific asset classes. It is a value-oriented contrarian strategy, which may go against prevailing market trends. We buy when current pricing indicates that the future returns will be above our long-term expectations (e.g., buying equities as the market is falling). We sell when we project future returns will be below those expectations.

Two key factors underlie our use of strategic tilts to help generate additional returns to the Fund:

- I. We believe that in the medium term, asset class returns are somewhat predictable. We also believe that asset prices have a tendency to revert towards their fundamental value over time; and
- The strategy aligns with our long investment horizon and the ability to withstand short-term adverse movements. This allows us to be less concerned about the precise timing of when assets will return to their fundamental values.

We manage tilt positions internally, subject to Board-approved limits. While strategic tilting is not typically as powerful in the long run as the other two sources of returns, it can at times add materially to total returns, protect Fund asset values, or both.

We have formed a dedicated Strategic Tilting group to further develop our approach, extend research and improve allocation processes to make judicious shifts in asset class, currency and broad factor allocations when we are sufficiently confident of the potential reward/risk tradeoff.

## BALANCING INTERNAL AND EXTERNAL EXPERTISE

Because of our size and professional environment, we can maintain expert internal teams to manage large parts of the CPP Fund. This has two main benefits.

First, it avoids external fees and lowers other management costs. We often have the skills to carry out activities similar to those of external management firms with comparable expertise but at a much lower cost. Every dollar saved is additional net income for the Fund – and much more certain than a dollar of possible return. More detail on how we control costs is found in the Managing Total Costs section on page 46.

The second benefit of internal management comes from the range of expertise that we bring to assessing investments and strategies:

- > All groups in our Public Market Investments department can draw on specialized strategies, trading and structuring capabilities designed specifically for our programs and their execution;
- > Our Fundamental Equities group has the management experience to make a major contribution to the corporate growth and operational strategies of selected public companies in which we take a substantial stake;
- > The professionals in our Real Assets, Private Investments and Investment Partnerships departments have the ability to engage and co-invest as equals with well-aligned external partners who provide access and specialist capabilities in private investments; and
- > Our international offices are critical to maintaining valuable relationships and partnerships in all international markets.

We also recognize the enormous breadth of external expertise that can benefit the Fund. We will consider engaging an external manager wherever we can add a strategy that we cannot execute as effectively on our own. These strategies must be relevant, distinct and meaningful and we must be able to scale them up as the Fund grows. Expert external managers not only provide specialist strategies, they often also share valuable knowledge with us as long-term partners.

The Board approves all external manager appointments above certain limits. The manager must demonstrate expertise and, equally important, must be judged capable of providing risk-adjusted value that will more than offset the cost of external fees. We are mindful of principal/agent conflicts, and as such, we structure external contracts and mandates with great care to align our partners with the interests of the Fund. To do so, we make use of performance-based fees, sharing of investment gains beyond threshold performance levels and deferred payouts.

Our Investment Partnerships department has the internal depth and knowledge to successfully evaluate strategies and managers, in both public and private markets around the world. Selecting, mandating, monitoring, managing and replacing external organizations demands skills that are quite different from those required to select individual investments. The experience and insights of our team enable us to distinguish solid, sustainable opportunities from those that are fleeting, weakly founded or poorly executed.

Many investors are at a disadvantage because the external managers they appoint are far more knowledgeable than their in-house staff. At CPPIB, all of our teams have the capabilities to work with any of our world-class partners as mutually respected peers.

## OUR TOTAL PORTFOLIO INVESTMENT FRAMEWORK

Since the adoption of our long-term business plan in fiscal 2015, we have progressively developed our investment framework to implement the structures, accountabilities and methodologies that we believe will best enable CPPIB to meet its investment objective. We have a dual focus:

- > To achieve long-term *total returns* that will help sustain the CPP and pay pensions; and
- > To use our comparative advantages to earn long-term net *value-added returns* compared to a low-cost, passive investment strategy.

When assessing the sustainability of the CPP, the Chief Actuary assumes a long-term net annual return averaging 3.9% after inflation. If through active management, we could consistently deliver returns averaging 0.5% a year higher, then:

- > The minimum contribution rate could eventually be reduced from 9.79% of covered earnings to 9.43%. That is equivalent to a combined savings to employees and employers of more than \$1.7 billion annually at current earnings levels.
- > Alternatively, the additional returns could be used to increase benefits or held in reserve to strengthen the sustainability of the CPP.

At the same time, we must manage CPPIB's investments responsibly. We must strike the right balance along the return-risk spectrum. Due to the design of the CPP, what is prudent for the CPP Fund is materially different than for most other pensions and individual portfolios. In other words, the measure of undue risk of loss is highly specific to the particular circumstances of the CPP Fund. We are not preoccupied with short-term volatility in Fund returns. Rather, we set the risk level for the Fund by focusing on longer-term risks that could lead to increased CPP contributions or reduced CPP benefits.

To balance the maximization of returns with the control of risks, our Total Portfolio Investment Framework has three principal components:

- Risk Appetite Expressed by the Reference Portfolio
- 2. Diversification Represented by the Strategic Portfolio
- 3. Management Executed through the Target, Active and Balancing Portfolios

## I. RISK APPETITE – THE REFERENCE PORTFOLIO

The foundation of investment strategy for any portfolio is to determine a prudent and appropriate risk level. At a minimum, we must accept the level of risk for the Fund that would be expected to generate the net real return required to sustain the CPP (all other assumptions being met). Depending on long-term return assumptions, we believe that a portfolio of 40% global public equities and 60% Canadian governments' bonds is the lowest risk, simplest portfolio that we can expect to meet this requirement. As noted above, however, there are major potential benefits to achieving better returns, by undertaking a higher but still prudent risk level.

## Our View on Currency Hedging

Many Canadian pension funds make substantial use of currency hedging, which reduces the impact of currency changes on the value of their foreign investments. But hedging has a financial cost. And when the Canadian dollar depreciates, hedging requires setting aside cash or generating it quickly to meet hedging contract obligations.

We believe extensive hedging of foreign investments is not appropriate for the CPP Fund for the following reasons:

- 1. For a Canadian investor, hedging foreign equity returns reinforces, not reduces, their inherent risk. This is due to the Canadian dollar's status as a commodity currency. The dollar tends to strengthen when global equity markets are rising and weaken when they are falling. We believe that the Canadian dollar will continue to behave in this procyclical way, but we are less confident that there will be sufficient return to compensate for accepting this risk.
- 2. When the Canadian dollar strengthens against other currencies as a result of higher commodity prices, especially oil, the Canadian economy is likely also stronger. That in turn should mean increased earnings for CPP contributors as a result of higher real wages. As earnings rise, so should contributions to the CPP. This represents a natural hedge for the CPP, which reduces the need for explicit currency hedging of the CPP Fund's foreign investments.
- The cost of hedging currencies of many developing countries is prohibitively high. And if these countries continue to experience higher productivity and economic growth, their currencies should tend to strengthen.
- We can substantially mitigate currency risks by holding a broadly diversified set of currency exposures across the world, as shown on page 43.

Accordingly, for the most part, we do not hedge foreign currency exposures to the Canadian dollar. Not hedging can work in either direction. In years of major strengthening or weakening of the Canadian dollar, total performance of the CPP Fund will differ from funds with a standing policy of greater hedging. For example, when the Canadian dollar strengthened along with global equities and commodity prices in fiscal 2010, the Fund generated \$16 billion in overall investment returns despite a \$10.0 billion loss in the Canadian dollar value of our foreign holdings. On the other hand, we realized currency gains of \$9.7 billion in fiscal 2014, \$7.8 billion in fiscal 2015 and \$5.2 billion in fiscal 2016 as foreign currencies strengthened against the commodities-driven Canadian dollar. Currency movements had a relatively small positive impact in fiscal 2017.

2

Based on very long-term projections, the Chief Actuary estimates that contributions will finance 65–70% of future Base CPP benefits. Investment returns will finance 30–35%. In other words, contributions will be almost twice as important as investment returns in sustaining future CPP benefits. This is very different than most fully funded defined benefit pension plans, which are much more dependent on investment returns to finance the larger share of long-term benefits and hence generally more risk-averse than the CPP Fund needs to be. The funding structure of the CPP means that:

- > Short-term volatility in returns has much less impact on the CPP's sustainability and minimum required contributions than for conventionally funded plans.
- > A truly long-term perspective can be taken, in which the expected higher returns from undertaking a higher but still prudent investment risk profile tends to increasingly offset the impact of higher short-term volatility as the time horizon lengthens. In fact, it eventually reduces overall risk to the CPP.

Given these key factors, in fiscal 2014, the Board and Management of CPPIB concluded that the risk level of the Fund could and should be increased over time, with a corresponding increase in expected long-term returns. They approved a gradual increase to the equivalent risk level of a portfolio of 85% global equities and 15% Canadian governments' bonds.

We express the appropriate risk target by means of the Reference Portfolio. This two-asset-class portfolio comprises only public market global equities and fixed-payment bonds issued by Canadian governments. Each class is represented by broad market indexes that could be passively invested in at minimal expense. The chart below shows the progression of the Reference Portfolio.

"Global equities" includes both developed and emerging markets, and takes into account their evolving market capitalization. Because we no longer have a separate allocation to Canadian equities, the composition of the S&P Global LargeMidCap equity index effectively determines the weighting of Canadian equities in the Reference Portfolio. As of March 31, 2017, this market weighting was approximately 2.6%. However, the actual Investment Portfolio will likely continue to Canadian equities, as we take advantage of our home-country knowledge and access.

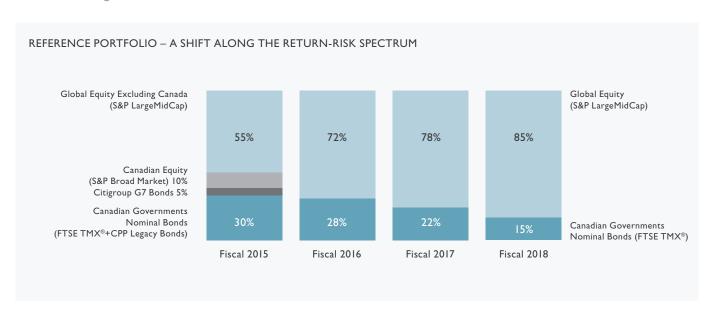
We review the appropriate risk level for the Fund at least once every three years, taking into account the increasing maturity of the CPP, its evolving funded status and then our best estimates for long-term economic and capital markets factors. We recognize that the appropriate level of total investment risk would likely be significantly different for the fully funded Additional CPP than for the current Base CPP due to different financing approaches.

We have developed a Long-Term Risk (LTR) model for overall risk measurement, and intend to start using it in fiscal 2018. This model is significantly different from the previous more conventional mechanism, which used shorter-term measures. We will continue to use the old model for comparison.

The LTR model is more consistent with CPPIB's investment strategy and the longer average horizon of our investments. It also reflects the longer time period over which persistent underperformance of the Fund would become apparent.

In designing the LTR model we followed five key principles:

- I. Use a forward-looking methodology, but have it based on a long period of historical data with a sufficiently wide range of economic and market conditions. We chose the period since 1971.
- Base the primary measurement of risk on a five-year horizon. This is a reasonable compromise between the very long-term and practical usage.
- 3. Estimate risk by calculating both the size and likelihood of loss potential, in asreported Fund values after inflation.
- 4. Include all major contributors to total risk, both systematic and idiosyncratic (including active portfolio management).
- 5. Translate the absolute value of measured risk into the equivalent equity/debt risk.



After the Chief Actuary's review was published in September 2016, we began reviewing the Reference Portfolio that will be used for the upcoming three years. This review will affirm or modify our long-term risk appetite. The actual Investment Portfolio may have more or less measured risk than the Reference Portfolio. However, we will maintain it within the governance limits described on page 29.

### **FUND RETURN BENCHMARK**

In addition to serving as the expression of risk appetite, the passive Reference Portfolio performs a second critical function as the benchmark for the total net return of the CPPIB Investment Portfolio. While the Investment Portfolio generally has risk similar to the Reference Portfolio, it has much broader composition that currently includes over 47% in private investments and is actively managed. Given the wide differences in holdings between these two portfolios and the time necessary for the long-term active strategies of the Investment Portfolio to demonstrate results, we focus ongoing performance assessments on the outcomes over five- and 10-year periods.

### DIVERSIFYING SOURCES OF RETURN AND RISK – THE STRATEGIC PORTFOLIO

Matching the risk of a Reference Portfolio

of 85% equity and 15% debt does not mean that we simply hold 85% of the Fund in equities. This would be quite imprudent, as the portfolio's downside risk would be almost completely dominated by a single risk factor – that of the public equity markets.

We can, however, build a portfolio with a much superior return-risk profile by blending a variety of investments and strategies that fit CPPIB's comparative advantages. Each of these strategies offers an attractive return-risk tradeoff of its own, and their addition clearly reduces the dependence on public equity markets.

First, we can invest in a higher proportion of bonds and also add two major asset classes with stable and growing income, core real estate and infrastructure. By themselves, these lower the risk of the overall portfolio. To further manage the total risk towards our target, we can then add a wide variety of higher return-risk strategies, such as:

- > Replacing publicly traded companies with privately held ones;
- Substituting some government bonds with higher-yielding credits in public or private debt;
- Judiciously using leverage in our real estate and infrastructure investments, along with increased investment in development projects;

- > Increasing participation in selected emerging markets; and
- > Making significant use of "pure alpha" investment strategies, which rely on the skills and experience of our managers.

However, the resulting portfolio would still carry a lower risk level (and thus lower expected long-term return) than we believe is appropriate for the Fund and its objectives. Clearly, we do not wish to reduce high-quality but lower risk assets where we have particularly strong comparative advantages. Therefore, to raise the risk level and expected returns, we make use of a limited degree of leverage through the issuance of CPPIB short- and medium-term debt and the use of derivatives. Leverage enables us to:

- > Maintain sufficient liquidity;
- > Increase our holdings of lower risk asset classes that generate attractive riskadjusted returns; and
- > Achieve the optimal overall return-risk profile for the investment portfolio.

Using these tools, we build the Strategic Portfolio in two steps:

I. We first design an optimal strategic mix of key return-risk factor exposures (see page 29 for more information) best suited to meet the Fund's objectives. We do

### CHARACTERISTICS OF INVESTMENT PORTFOLIO WITH ENHANCED RETURN-RISK PROFILE





Illustrative Portfolio in

Equity/Debt Risk Equivalence	85/15	85/15
Active Programs Contribution	None	High
Public Equity Allocation	High	Moderate
Diversification	Low	High
Comparative Advantage Alignment	Low	High
Major Loss Potential in Market Extremes	High	Moderate
Best Return-Risk Profile	No	Yes

this by looking at the underlying returnrisk characteristics of each asset type and incorporating the effects of active management strategies and leverage. We do not impose any investment restrictions other than the practical market limitations facing a fund of our size. The mix of factor exposures is designed to maximize expected long-term returns, at the same total risk level as the Reference Portfolio.

 We then translate these desired longterm factor exposures into weightings of six distinct public and private asset classes. The Strategic Portfolio also expresses our long-term plan for allocating assets to four geographic regions.

The result is a highly diversified aspirational portfolio at the intended total risk level. It has both a significantly higher expected return and greater resilience to extreme downturns than the Reference Portfolio.

The strategic factor allocations we choose provide clear direction to guide the choices we make of investment programs and strategies as the Fund continues to grow. It leads to a set of "Signals" that help each investment program execute its specific mandate and collectively deliver the targeted factor exposures. For each investment group, each Signal sets out:

- > The nature, areas and types of investments:
- > Intended contributions to total portfolio return-risk profile;
- > Targeted size of assets and/or risk allocation in five years' time;
- > Long-term expected risk and returns characteristics; and
- > Geographic, sector and other guidelines.

We review the Strategic Portfolio at least every three years, when we review the Reference Portfolio.

### MANAGEMENT – THE TARGET, ACTIVE AND BALANCING PORTFOLIOS

While the Strategic Portfolio is a long-term plan to deliver on the Fund's objectives, the actual Investment Portfolio must also take into account the practical business and investment plans of each investment department and group. Also, the values of portfolio investments change daily as investments are bought and sold. So there is inevitable movement in the weights of total portfolio holdings and risk exposures.

#### STRATEGIC PORTFOLIO ASSET CLASS AND GEOGRAPHIC CLASSIFICATIONS AND PERCENTAGE WEIGHTS

ASSET CLASS	% Weight
Public Equity	41%
Private Equity	21%
Public Fixed Income (high-quality government issues)	27%
Credit Investments (private debt and public fixed income excluding high-quality governments)	8%
Real Assets (public and private, including real estate, infrastructure, resources, agricultural land)	23%
Cash and Absolute Return Strategies <sup>1</sup>	-20%
	100%

GEOGRAPHIC REGION	% Weight
Americas Developed Markets	53%
Europe, Middle East and Africa Developed Markets	23%
Asia Pacific Developed Markets	9%
Emerging Markets	15%
	100%

I. Sustained explicit and implicit financing of the investment holdings of the Investment Portfolio, partially offset by net assets in Absolute Return Strategies and short-term holdings. The controlled use of such financing enables the optimal diversification of the portfolio at the targeted risk level, and helps maintain necessary liquidity.

We address these naturally changing weights with our Target Portfolio and Balancing Process. These control how we actually invest assets today and over the upcoming fiscal year. The Target Portfolio uses the same six asset classes and four geographic regions as the Strategic Portfolio. It sets out the permitted ranges in terms of percentage weights for each asset class and geographic region over the year. We may also add more specific limits, such as on investments in a single country.

As always, our individual investment groups will only make an investment when there is sufficient prospect of an appropriate risk-adjusted return. We never make an active investment simply because it fills a gap in a particular asset

class or geographic region. However, the Target Portfolio ranges ensure that we achieve the desired growth, balance and control of total portfolio return-risk factor exposures, and direct available resources to the best areas of long-term opportunity.

To effectively manage the Investment Portfolio, we view it in two components – the Active Portfolio and the Balancing Portfolio:

> The Active Portfolio is the collective holdings directly resulting from the specific investment selections of the investment departments, guided by their programs' Signals, at current valuations.

> The Balancing Portfolio comprises the remainder of total assets, held entirely in readily tradeable public market securities. Given the factor exposures in the Active Portfolio at any time, we adjust the Balancing Portfolio to maintain the intended overall mix for the total portfolio – without undoing any strategic tilts and subject to the Target Portfolio ranges, absolute risk limits and sufficient liquidity.

The Balancing Process aggregates the risk factor exposures of the Active and Balancing Portfolios daily. When these aggregate exposures vary too much from the intended total portfolio allocations, we make optimal trades within the Balancing Portfolio to bring the Investment Portfolio back into line.

## FACTOR INVESTING – IMPLEMENTING THE TOTAL PORTFOLIO APPROACH

By themselves, asset class labels do not fully convey the highly diverse nature of the investments within each class. For example, real assets such as property and infrastructure investments clearly have attributes of both equities and fixed income in addition to their specific attributes. Private and public investments may appear fundamentally similar, but their liquidity is very different as well as their respective balance of fixed and variable costs. Debt securities carry a wide range of durations and credit risk. Equities vary in their geographic sector and financial leverage exposures.

Because of all these variables, we need to have a unified measure of total exposures to the key return-risk factors, used throughout the Total Portfolio Investment Framework. We achieve this by mapping each investment or program according to how much each risk factor affects them. The key factors include:

- > Movements in equity markets;
- > Credit spreads over government bonds;
- > Real assets characteristics;
- > Country and regional influences;
- > Volatility; and
- > Illiquidity how difficult it is to convert an asset into cash.

When we construct portfolios, we take into account how much exposure we want to each risk factor. We also use these factors to analyze how major potential new investments will affect the exposures of the total portfolio. As markets, security prices and investment values change, the Total Portfolio Approach drives how we rebalance the portfolio and avoid unintended risk exposures. For example, it has enabled us to prevent unrecognized equity-like risk from creeping into the portfolio through alternative asset classes.

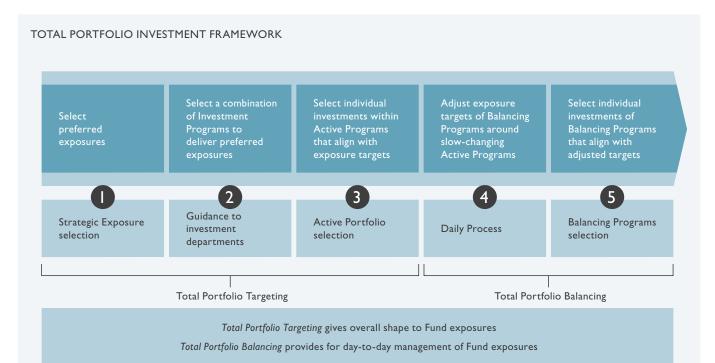
#### **GOVERNANCE FRAMEWORK**

Board governance of the investment strategy has four basic elements:

- I. Setting Absolute Risk Limits The lower limit is the minimum degree of risk we believe is necessary to generate the minimum expected total portfolio returns to sustain the CPP. The upper limit is the maximum degree of risk the Board believes is justifiable for the Fund, beyond which further risk-taking would be undue. Risk is expressed in portfolio equity/debt risk equivalence terms. Management must maintain the Investment Portfolio within these limits at all times.
- 2. Approving the Reference Portfolio Every three years, the Chief Actuary releases a report on the CPP. Management then proposes the Reference Portfolio as a simple, low cost, readily investable

- portfolio carrying an appropriate level of risk. This expresses the total risk target for the Investment Portfolio and also represents the benchmark for overall Fund performance.
- 3. Approving the Business Plan This annual exercise sets out the current and longer term investment and operating plans for each department. The plan includes confirmation or adjustment of the Strategic Portfolio and the Target Portfolio ranges. The Board also approves the Absolute Risk Operating Range (AROR) for the upcoming fiscal year, always within the Absolute Risk Limits. The AROR limits how far the total risk of the Investment Portfolio can stray from that of the Reference Portfolio without specific Board approval.
- 4. Approving the Risk Policy The Board approves this document annually. It formalizes the constraints in the three previous elements and sets out the measures the Board and Management will use to monitor and control risks. It also spells out limits on other risks, such as credit risk and the exposures to counterparties.

As required under the CPPIB Act, the Board also approves new appointments of external managers, delegating to the CEO those appointments where assets under management will be below a defined level.



At times, Management may wish to make a strategic tilt in the total portfolio composition. If the tilt would take the portfolio outside the Target Portfolio ranges and/or the Absolute Risk Operating Range, the Board must approve it first. If market changes alone take the portfolio materially outside the Target Portfolio ranges, Management must either:

- > Present the Board with a plan to address the situation; or
- > Request a variance for a specific time period.

The Board receives comprehensive quarterly reports on the Investment Portfolio in order to monitor:

> Investment Portfolio growth and composition;

- > Management's progress against the year's investment plans;
- > Total risk and other risk measures;
- > Total returns, and individual program contributions; and
- > Value-added versus the Reference Portfolio.

### ALIGNING THE INVESTMENT FRAMEWORK THROUGHOUT THE ORGANIZATION

Reference Portfolio Strategic Portfolio Target Portfolio Business Plans Departmental Objectives

Group Objectives Individual Objectives

## How We Maintain Accountability for Risk-taking and Performance

Successful investing requires clear decision-making and accountability. It also requires competitive compensation and carefully aligned performance-based incentives. The diagram above shows how we align all our activities throughout the organization.

## INVESTMENT PLANNING COMMITTEE

Management's Investment Planning Committee (IPC) has overall accountability for the long-term Investment Portfolio. The IPC proposes the Risk Policy and other governance elements to the Board, and is then responsible for ensuring control of overall portfolio return-risk exposures within the Board governance framework outlined above. Each year, the IPC also approves the investment plans and Signals (as described on page 28) for all investment departments, and recommends them for CEO approval.

The IPC is the primary committee of senior management with investment responsibilities. A review of its terms of reference was undertaken during this fiscal year to confirm or clarify its responsibilities and delegations, as outlined below.

Taking into account recommendations by departments and IPC subcommittees, the IPC provides or approves:

- > The framework for governing, targeting, measuring and managing investment risk, and the Total Portfolio Investment Framework described on page 25;
- > Long-term strategy to balance and optimize the three sources of returns (see page 22);
- > Appetite for distinct return-risk factors in the Investment Portfolio;
- Approach for managing other broad factors such as emerging markets exposure, climate change and sustainable investing practices;
- > Appropriate use and limitation of leverage in various forms. This includes recommending to the CEO and Board the level and form of full recourse borrowing by CPPIB;
- > New investment programs and their mandates, and recommendations to curtail programs; and
- > Principles and frameworks for key models and methodologies.

The IPC is also responsible for monitoring performance of the Investment Portfolio, and evaluating the success of programs. The IPC delegates specific authorities and responsibilities to investment and operational departments

for certain recommendations, nextlevel down decisions, implementation and program monitoring.

The IPC may undertake strategic investments that will fall under its accountability, but delegating their day-to-day management of such investments to a particular investment group.

The IPC directs the overall liquidity position of the Fund. CPPIB has the ability to raise funds through the issuance of commercial paper and medium-term notes, and other methods, which provide flexibility in managing total Fund liquidity. During the fiscal year, CPPIB expanded both our commercial paper and medium-term note programs as described on page 53; these borrowings continue to carry the highest AAA credit ratings from Standard & Poor's, Moody's and DBRS.

The chair of the IPC is the Chief Investment Strategist, who also heads the Total Portfolio Management department. The CEO is also a member of the Committee. The IPC has designated two sub-committees, one dealing with Strategic Tilts and the other with Liquidity.

Measures of success for the IPC are:

- > Absolute returns on the Investment Portfolio;
- > Total net dollar value-added relative to the Reference Portfolio; and

> The delivery of a total portfolio at the targeted risk level, that is soundly diversified across return-risk factors and progressing efficiently as planned towards the Strategic Portfolio.

### INVESTMENT RISK MANAGEMENT

The Investment Risk group within the Finance, Analytics and Risk department independently provides the IPC with basic and supplementary risk assessments. These include stress tests to estimate the potential impacts of major events. For example, we model the potential impact of incidents similar to the 1987 equity crash, the emerging markets currency and debt crisis of 1997-98, and the global financial crisis of 2008-09. As described on page 26, we have developed a long-term risk model and we also continue to develop new frameworks to better estimate emerging risks, and enhance our strategic decision-making.

We use a statistical technique called Value-at-Risk to measure the level of risk within our portfolios over a specific timeframe. (See page 122). An important element in this measurement is credit risk. This is an estimate of the potential loss if borrowers default on loans from CPPIB or if counterparties in financial contracts fail to meet their financial obligations to CPPIB.

Investment risk management is an important part of the Enterprise Risk Framework, as described on page 66.

### TRANSACTION APPROVALS

Investment Management Authorities established by the CEO set out the authorities of investment departments to make specific investment transactions for the Fund. The Authorities include the requirement for approval of transactions above certain sizes by one of two committees – the Credit Investments Committee (CIC) for credit-related investments and counterparties, or the Investment Departments Decision Committee (IDDC) for all other types of transactions. Approval by the Investment Committee of the Board is also required for transactions above certain sizes.

### INVESTMENT DEPARTMENTS AND GROUPS

Each investment department or group therein is accountable for:

#### RISK/RETURN ACCOUNTABILITY FRAMEWORK

#### Accountability

### Board of Directors



### Risk/Return

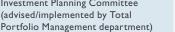
- Reference Portfolio • Strategic Portfolio
- Human Resources and Compensation Committee<sup>1</sup>



• Compensation and incentive frameworks



- Target Portfolio Ranges



- Departmental asset and risk targets
- Program approvals and Signals
  - Total portfolio risk management
  - Investment Portfolio returns and DVA

Investment Departments



 Active programs to generate exposures, returns and value-added



 Balancing programs to deliver intended total return-risk factor exposures

Total Portfolio Management

- I. Approval of Management recommendations.
- > Decisions to propose or reject new strategies, and to resize or reposition existing strategies, within the overall guidance for total portfolio factor exposures;
- > Identification, access and selection of investment opportunities and partners;
- > Undertaking individual investment transactions to build portfolios as guided by the applicable Signals; and
- > Cost-effective execution of active portfolio management programs within their mandates.

Measures of investment success for each department or group include both absolute returns and the value-added, after all costs, compared to appropriate riskadjusted benchmarks. Equally important is their contribution towards delivering the targeted return-risk factor exposures and total return of the Investment Portfolio.

### HOW WE MEASURE AND COMPENSATE PERFORMANCE

Each year, the Human Resources and Compensation Committee (HRCC) of the Board of Directors approves the compensation structure for all levels of employees. It ties incentive compensation to the following elements:

- I. Total Fund investment results, both as total return and as value-added relative to the Reference Portfolio;
- 2. The Department and Group performance, measured against a variety of objectives set in the annual business plan; and
- 3. Individual performance.

Full details of our compensation system in the Compensation Discussion and Analysis section, begins on page 70.

Investment program returns for compensation purposes are calculated after deducting all investment costs, external manager and other fees, as well as internal operating expenses.

### HOW WE SET BENCHMARKS AND VALUE-ADDED TARGETS

At the total portfolio level, returns on the Reference Portfolio form the benchmark. At the investment group level, the benchmarks and long-term competitive value-added targets are established for each program. These targets represent the broad investment characteristics of each program, its risk level and its inherent opportunities. The targets are then used as part of the assessment of each investment group's success.

Our external auditors examine the methods and results for determination of actual and benchmark returns at the total Fund level and report their findings to the HRCC. An independent advisor has confirmed that our processes meet or exceed the standards in the G20 Principles on Compensation in Financial Services.

Following a review in fiscal 2016, we decided to simplify the benchmarks used for incentive compensation and reduce their number to a single benchmark and valueadded target for each program. The intent is to promote greater focus on the total performance of each program when viewed as a whole and to reduce unnecessary complexity and cost. We also extended the primary evaluation period to five years.

Below are specific benchmarks used for individual investment programs to which a competitive value-added target is added for each program:

Public Markets: Most active programs aim to generate returns that are largely independent of market movements. At the start of each year, we set dollar targets for the degree of risk each of these programs is expected to take. We also set an overall target Information Ratio (a risk-adjusted measure of performance, calculated as the value-added net of returns on cash employed, divided by its annualized volatility). This gives us a dollar target that is then allocated among the respective programs. For any program incorporating deliberate systematic risk, a representative public index (or blend) is used as the benchmark.

Private Equity: Large/midcap public equity index for Developed, Emerging or Global markets depending on the program.

Natural Resources: Developed Energy large/midcap public equity index.

Infrastructure: Weighted blend of indexes of global large/midcap public equities and G7 government bonds.

Private Credit Investments including Intellectual Property: Weighted blend of three indexes, for U.S. leveraged loans, U.S. high yield corporate bonds, and emerging market bonds.

Private Real Estate Equity: Global Fund Manager Property index.

Private Real Estate Debt: Weighted blend of indexes of investmentgrade Real Estate Investment Trust (REIT) bonds and leveraged loans.

### Investment Departments Overview

This section provides an overview of the responsibilities of our four investment departments:

- > Public Market Investments (PMI)
- > Investment Partnerships (IP)
- > Private Investments (PI)
- > Real Assets (RA)

It also describes the responsibilities of the Total Portfolio Management (TPM) department. TPM supports the Investment Planning Committee (IPC) in coordinating the contributions of all investment programs to the Investment Portfolio and implementing the Total Portfolio Investment Framework, described on page 25.

Details about the fiscal 2017 and longerterm performance for the active portfolios of each investment department and for the IPC Portfolio begin on page 50.

### TOTAL PORTFOLIO MANAGEMENT

The TPM department acts as the operational arm of the IPC. It enhances portfolio composition and performance in four broad ways:

- > Development of the recommended long-term return-risk factor allocations leading to the Strategic Portfolio, the Target Portfolio ranges, and the shorter term path for Investment Portfolio composition within those ranges;
- > Guidance and coordination for the investment departments' activities to help ensure that each contributes effectively to the total portfolio in a coherent way;
- > Guidance for the Balancing Portfolio to maintain or achieve intended overall return-risk factor exposures working with the Global Capital Markets (GCM) group in Public Market Investments to (i) optimize the efficient construction of the portfolio components through public security selections and (ii) maintain and optimize the appropriate liquidity in the Investment Portfolio; and

> Guidance for the Fund's overall foreign currency exposures (excluding active tactical currency allocation) when needed under the approach described on page 25, working with the Treasury group in the Finance, Analytics and Risk department and GCM. Centralized currency management is more costeffective and provides better control of overall exposures than managing currencies within each investment department.

To support all CPPIB investment activities, TPM conducts high-level investment research on asset classes, return-risk factors, portfolio construction and active management strategies. TPM also develops CPPIB's primary economic and market forecasts that help frame investment decision-making for the total portfolio and within specific investment programs.

Our annual business planning process is integral to the development of the total portfolio over time. TPM and the investment departments first scope out the full range of potentially attractive investment areas in each active program over five-year and oneyear periods. Considering the portfolio as a whole, we then narrow these down to the preferred range of five-year deployment for each program. This enables us to practically achieve the aspirational return-risk factor allocations underlying the Strategic Portfolio. These directions are formalized in the ID Signals as described on page 28. To assist in comparing expected returns on prospective investments with local alternatives, TPM provides supplementary guidance to the investment departments through current expected returns for local public equity and debt markets for the anticipated terms of new investments.

Each department's annual business plan then specifies the people, international offices, technology, liquidity and other resources needed to cost-effectively support the investment plans.

TPM is also responsible for multi-year forward modelling of projected Fund returns and assets, and of expected CPP contributions, benefits and net liabilities. This asset/liability modelling and associated long-term risk assessment supports our periodic reviews of the Reference Portfolio and the Strategic Portfolio.

### PUBLIC MARKET INVESTMENTS

Public Market Investments (PMI) invests in publicly traded equity securities, as well as listed and over-the-counter derivatives that are related to such securities. These active management activities are undertaken through market-neutral or long/short strategies, as previously described on page 22. PMI is also responsible for providing public market execution and funding services for all investment groups and manages a growing number of strategies on behalf of the IPC.

PMI's mandate is to:

- > Design and execute a range of equity strategies to generate additional returns from successful active management;
- > Manage public market exposures in the Balancing Portfolio, coordinating with the TPM department;
- > Coordinate and optimize Fund liquidity, including administration of CPPIB's debt issuance program; and
- > Execute public market transactions for all active programs.

In fiscal 2017, PMI restructured parts of the department to better align with our focus on the total Fund return and current business requirements. As a result of these changes PMI:

- > Formed new teams within the Global Capital Markets group to implement alternative factor exposure strategies;
- > Formed the Strategic Tilting group;
- Wound down the Global Tactical Asset Allocation and Short Horizon Alpha programs;
- Commenced integration of the Relationship Investments and Active Fundamental Equities (formerly known as Global Corporate Securities – Fundamental Investing) groups into a combined group called Fundamental Equities; and
- Renamed the investment group formerly known as Global Corporate Securities – Quantitative Investing to Quantitative Equities.

PMI is now organized into the following investment groups and the Sustainable Investing group. These groups are supported by the Business Management team.

#### **GLOBAL CAPITAL MARKETS**

Global Capital Markets (GCM) provides four services critical to the efficient management of public market assets:

I. Manages the Fund's targeted market, risk and liquidity exposures within prescribed ranges, in collaboration with the TPM

- department. This function includes deploying and/or raising funds for Cash, Equity and Fixed Income asset classes, as well as rebalancing asset class, currency and other exposures to target levels as market prices move. In all these activities, GCM must weigh minimization of transaction costs against close tracking to the desired portfolio composition;
- Coordinates activities related to the prudent management of CPPIB's overall balance sheet, through its Cash & Liquidity Group. This includes assessing and analyzing the Fund's liquidity position and managing CPPIB's cash positions and asset/liability structure;
- 3. Executes the transactions required to fund major investments without undue negative market impact; and
- 4. Provides price-effective and timely execution services for active programs.

GCM also provides a wide array of value-added services over and above execution to other investment teams within CPPIB. GCM execution desks act as a central hub for implementation advice, trading strategies for dispositions and acquisitions, efficient hedge construction, and liquidity discounts.

### **OVERVIEW OF RESPONSIBILITIES**

### Board of Directors

- Approves total Fund risk appetite
- Approves Investment Policy Statement
- Approves Risk Policy
- Approves annual Business Plan
- Approves major investments and appointments of external management

### Investment Planning Committee



- Targets and oversees total Fund asset, currency and risk exposures
- Approves investment programs
- Approves investment deployment Signals
- Undertakes select strategic investments

### Finance, Analytics & Risk



- Recommends risk governance elements
- Provides risk measurements and assessments
- Provides returns measurements and attribution
- Manages short-term liquidity requirements

#### Investment Departments

Total Portfolio Management



Public Market Investments
Investment Partnerships



Private Investments

Real Assets



### QUANTITATIVE EQUITIES

The Quantitative Equities (QE) team manages highly diversified portfolios of securities providing exposures to desired investment factors, or common security attributes. These factors seek to identify repeatable, systematic sources of investment return from either risk premiums or market anomalies which cause temporary mispricing. By investing in a range of factors spanning multiple investment styles, regions and time horizons, the group seeks to diversify its sources of returns and reduce unnecessary volatility.

Managing programs across North America, Europe and Asia, the team focuses on refining existing strategies and factors for greater efficacy and developing new strategies and factors that can be implemented at a scale that is meaningful for the Fund. In addition to their research and investment activities, the quantitative team also focuses on sourcing and managing new data for use in investing and developing analytics, and collaborates on this work with other teams across the organization.

### **FUNDAMENTAL EQUITIES**

There are two distinct programs within Fundamental Equities (FE).

> Relationship Investments - Relationship Investments (RI) makes significant direct minority investments in public (or soon-to-be-public) issuers where an investment by CPPIB can make a meaningful difference to the success of the company and therefore generate long-term outperformance relative to peers. Since the group's inception in 2009, RI has expanded its geographic reach to include companies listed on Canadian, American, European and key Asian exchanges. The team has a physical presence in the Toronto, Hong Kong and London offices. RI is also establishing a presence in Latin America. Investments can range from \$100 million to several billion dollars for a 5-25% ownership position. Each investment involves an active ongoing relationship with the company's management team and board of directors; such relationships are forged over time, while the team conducts extensive due diligence on the company. The group focuses particularly on transformative growth opportunities and transactions involving the

- strengthening of balance sheets, or the transition of large ownership blocks. In most cases, RI obtains governance rights commensurate with the importance of its stake, while the company benefits from having a supportive cornerstone investor with a longer time horizon.
- > Active Fundamental Equities The Active Fundamental Equities (AFE) investment process takes advantage of structural advantages accruing to CPPIB as a long-term investor. Unlike other long/short managers, CPPIB's advantage as a long-term investor allows AFE to focus decision-making on intrinsic value over multiple years. AFE therefore benefits from considerably lower portfolio turnover and correspondingly lower transaction costs. AFE further generates alpha by exploiting securityspecific research insights, where risks are concentrated in idiosyncratic positions and diversified across traditional quantitative factors. AFE research and investment teams use deep fundamental research to build long/short portfolios consisting of mispriced securities and regardless of investment style (i.e., value or growth). The portfolio is global in scope, encompassing both developed and emerging markets, and leverages the team's physical presence in Toronto, London, Hong Kong and New York.

### STRATEGIC TILTING

Strategic Tilting (ST) manages the research and portfolio management activities needed to support and implement strategic tilting at the total Fund level. Strategic tilts are deviations away from the total portfolio's strategic asset allocation weights based on an assessment of the relative attractiveness of those assets at any point in time. Strategic tilts can be applied to major asset classes that are important to the Fund such as equity markets, bonds, credit and major currencies. See also page 24 for a further description.

### SUSTAINABLE INVESTING

The Sustainable Investing (SI) group brings expertise in environmental, social and governance (ESG) matters to its work with investment professionals across all of CPPIB's investment departments. We believe that considering ESG factors in investment decisions and asset management activities

will lead to better long-term investment performance across the Fund. A company's approach to ESG often serves as a good indicator of the quality of the business and its management and board oversight, as well as how it will perform over the long term.

The Sustainable Investing group is focused on two core functions:

- > **ESG Integration** Sustainable Investing works with investment teams in Public Market Investments, Investment Partnerships, Private Investments and Real Assets to ensure that ESG risks and opportunities are incorporated into investment decision-making and asset management activities. Given CPPIB's mandate to pursue maximum investment returns without undue risk of loss, we integrate ESG factors into our investment analysis alongside other investment considerations rather than screening investments or, conversely, targeting investments, based on ESG factors alone. Sustainable Investing works with investment teams across CPPIB to establish and refine ESGrelated investment processes, acting as internal experts.
- > Engagement Sustainable Investing supports CPPIB's role as an active, engaged owner and works to enhance long-term performance of companies in which we invest by engaging, either individually or collaboratively, with other investors. We encourage companies to provide better disclosure and adopt better practices on ESG factors that we believe are material to the longterm performance of the company. We pursue the full spectrum of engagement ranging from exercising our proxy voting rights to direct discussions with the board chairperson. We provide public disclosure of our Proxy Voting Principles and Guidelines that are updated annually. We also publicly disclose our proxy voting intentions in advance of shareholder meetings. Sustainable Investing actively engages with companies and stakeholders in a variety of means, including through engagement platforms such as the United Nationssupported Principles for Responsible Investment (PRI) initiative, the Canadian Coalition for Good Governance and Hermes Equity Ownership Services. Engagement activity is directed at

companies that present material ESG risks and opportunities as determined by research on the company, industry and region, along with industry standards and global best practices on ESG factors. Rather than excluding companies from our investment portfolio based on ESG factors, we work to promote positive change by working with companies on ESG issues that we believe are material to investment value. Sustainable Investing has four engagement focus areas: climate change, water, human rights and executive compensation.

In fiscal 2017, we introduced human rights as an engagement focus area. We have been engaging on human rights-related matters through the extractive industries (otherwise known as the oil & gas and mining sectors) focus area, but we decided to broaden the scope of human rights engagements to include other sectors such as consumer goods and information technology. As such, our prior work under the former extractive industries focus area will now be captured by the new human rights focus area and the existing climate change and water focus areas, and a separate extractives industries focus area is no longer necessary.

At CPPIB, we believe that it is our responsibility to take climate change into account to ensure that we are making sound investments over the long term. We dedicate resources toward understanding climate change risks and opportunities across our portfolio because we think this makes investment sense. Not only does climate change present a complex array of investment risks, it also presents attractive investment opportunities, including in the renewable energy sector.

We are pursuing a comprehensive approach that integrates climate change considerations across our investment activities. Climate change has been one of our engagement focus areas for a decade. As an investor with a long horizon, CPPIB has the ability to act as a patient provider of capital and to engage with the companies that we invest in to bring about change. We believe that engaging with companies on this topic and, often in collaboration with other investors, pressing for improvement will help build long-term value. This year, we led and participated in collaborative engagements alongside other global investors through which we pressed large

greenhouse gas emitters in oil & gas, utilities, and other sectors for improved disclosure related to climate change risks.

During fiscal 2017, SI launched an internal Climate Change Working Group, in order to more effectively channel our efforts with respect to climate change and coordinate work that is taking place in various parts of the organization. This is an investment-driven initiative to consider the impact of climate change on CPPIB's investments and to recommend actions to address these risks and opportunities. We are doing work to thoughtfully consider the impact of climate change on our portfolio as a whole, as well as on individual investments across our investment departments.

In May 2016, Stephanie Leaist, CPPIB's Head of Sustainable Investing, joined the Financial Stability Board's (FSB) Task Force on Climate-related Financial Disclosures. The Task Force has 32 international members from the private sector. Members include capital providers, insurers, large global companies from a range of sectors, accounting and consulting firms, and credit rating agencies and is chaired by Michael Bloomberg. The FSB established the Task Force to develop recommendations for more efficient and effective climate-related financial disclosures so as to promote more informed investment, credit and insurance underwriting decisions. This mandate is well aligned with CPPIB's longstanding engagement work with companies related to climate change. The Task Force released its initial report and recommendations for public consultation in December 2016, and expects to issue its final report and recommendations to the FSB in June 2017.

We continue to support the annual Climate Change Information Request by the CDP (formerly the Carbon Disclosure Project), which seeks increased disclosure and management of climate change risks from approximately 6,000 companies globally on behalf of investors. During the fiscal year, we supported over 50 shareholder proposals related to climate change at companies in our portfolio.

The approach and activities of the Sustainable Investing and investment teams are further described in the 2016 Report on Sustainable Investing. The report is published annually and is available on the CPPIB website.

#### **INVESTMENT PARTNERSHIPS**

Investment Partnerships (IP) establishes and broadens relationships with CPPIB's external managers through private and public market funds and related co-investments. IP currently maintains relationships with over I60 premier private equity and hedge fund managers around the globe. In addition, we make direct private equity investments in Asia, and identify long-term thematic investment opportunities. The IP department comprises three groups: External Portfolio Management, Thematic Investing, and Funds, Secondaries & Co-investments.

#### **EXTERNAL PORTFOLIO MANAGEMENT**

External Portfolio Management (EPM) creates value by engaging external managers whose distinct strategies and expertise in public markets are accretive and complement the overall CPPIB portfolio. These strategies are expected to offer attractive, sustainable results on a risk-adjusted basis, with value-added that has low correlation to that of internal investment programs. Each mandate must also be sufficiently scalable to be meaningful for the Fund's current size and expected growth.

Our external managers are valued partners with whom we seek strong long-term relationships. Unlike many traditional multi-manager programs, EPM does not make aggressive shifts in assets between strategies and managers. Rather, we control exposures and risks through balancing various types of strategies and generating a diversified return stream.

#### THEMATIC INVESTING

Thematic Investing (TI) conducts research and makes investments to capitalize on large structural changes and mega trends across the globe. As these evolve over many years, in some cases decades, they align well with our long-term investment strategy. Capital may be deployed using public or private asset classes. An example of TI's research is evolving demographics.

### FUNDS, SECONDARIES & CO-INVESTMENTS

Working as one global team, Funds, Secondaries & Co-Investments (FSC) is a leading investor in private equity with three main streams of activity:

- > Funds The Funds team focuses on identifying, making and monitoring capital commitments to large- and middle-market buyout and growth equity funds in North America, Europe and Latin America. We have a wellestablished portfolio of large private equity managers while we pursue new relationships in the middle market and with emerging managers. The Funds portfolio plays a critical role in the generation of investment opportunities for our direct investment platforms, in particular our Direct Private Equity and Secondaries & Co-Investments teams.
- > Secondaries & Co-Investments (S&C) -We participate in the secondaries market by acquiring interests in existing funds (LP Secondaries) and providing partial or whole-fund liquidity solutions to existing funds (Direct Secondaries). Secondaries transactions range in size from small single fund Limited Partner (LP) interests to portfolios in excess of \$1 billion. The Co-Investment program focuses on minority investments alongside our private equity partners, with a target investment size of up to \$275 million.
- > Private Equity Asia (PE Asia) This team focuses on commitments to both regional and single-country private equity funds in Asia, and participates in the secondaries market in Asia. PE Asia also co-invests and makes cosponsorship investments with General Partners in our funds portfolio and with other like-minded strategic partners.

#### PRIVATE INVESTMENTS

Private Investments (PI) invests in a wide range of private equity and credit assets. In some cases, the markets for these private assets are comparable in size to their public equivalents. They are well-suited for large, patient, knowledgeable investors. We seek to harvest the return premiums for investing in less liquid and longer-term assets, and for meeting particular financing needs of the entities to which we provide capital. Further, with expert partners, we can generate skill-based additional returns in a wide variety of ways:

> At the inception of the investment, through access to the best opportunities, superior information, unique insights, and expert structuring and financing of transactions:

- > During the holding period, through careful stewardship, enhanced governance, and improvements in operations and profitability; and
- > Upon exit, through selection of the optimal path, timing and terms.

While early investments were made entirely through funds, we now have the required expertise to undertake direct investments. Nevertheless, partnerships with leading fund managers remain important to our strategy.

In fiscal 2017, our Infrastructure and Agriculture groups merged with Real Estate Investments to form a new department, Real Assets. This change creates better alignment with our Strategic Portfolio. The PI department is now organized into four specialized groups:

#### **DIRECT PRIVATE EQUITY**

Direct Private Equity (DPE) focuses on large direct private equity transactions across North America and Europe. DPE has three primary investment strategies: i) Co-Sponsorships, where DPE invests directly in leveraged buyouts alongside private equity fund partners or acquires stakes in existing portfolio companies of private equity funds; ii) Strategic Investments, which includes opportunities that do not fit the traditional private equity return-risk framework or are not reasonably accessible by private equity funds; and iii) Financial Institutions, where DPE invests in financial institutions at scale, focusing on control investments in operating platforms that provide long-term growth and cash yield, special situations and partnerships with aligned parties.

#### PRINCIPAL CREDIT INVESTMENTS

Principal Credit Investments (PCI) focuses on investing in sub-investmentgrade corporate debt through both primary and secondary transactions. With investments in the Americas, Europe and Asia, the group provides debt financing across the entire capital structure. This includes term loans, high-yield bonds, mezzanine lending, structured products and other solutions for borrowers.

The group participates in unique eventdriven opportunities such as acquisitions, refinancings, restructurings and recapitalizations. In select cases, PCI may also commit to debt funds in order

to access manager expertise in new markets or where other strategic benefits exist. PCI also includes Antares Capital, a leading provider of financing solutions to middle market private equity sponsors in North America, and a sub-group that specializes in acquiring intellectual property rights, primarily in pharmaceuticals and technology.

#### **NATURAL RESOURCES**

Natural Resources (NR) invests directly in companies, strategic partnerships and direct resource interests in energy (oil and gas, midstream and oilfield services) as well as metals and mining. The group may partner with operators or like-minded investors but could also act alone. Interest in the sector is driven by compelling fundamentals that offer attractive longterm returns to deploy significant capital, which aligns well with CPPIB's investment principles and comparative advantages. The group aims to build a scalable and balanced portfolio diversified across geography, subsectors and commodities.

#### PORTFOLIO VALUE CREATION

Portfolio Value Creation (PVC) supports ongoing asset management activities across all direct portfolio holdings. The PVC group is actively involved in the governance and management of CPPIB's private and real assets. The group monitors developments in portfolio companies, and identifies and helps resolve emerging issues related to both governance and operational matters. The group also assists investment teams in defining and executing commercial and operational due diligence, selecting advisors and reviewing conclusions.

#### **REAL ASSETS**

Real Assets (RA) is focused on building a globally diversified portfolio that delivers stable and growing income to the Fund. The RA portfolio consists of investments in the real estate, infrastructure and agriculture sectors. Assets in these sectors are typically long-term, asset-intensive businesses with a steady income stream that rises with inflation over time. Exposure to real assets, which is generally underrepresented in the public markets, also provides diversification benefits to the Fund. The Real Assets department comprises two groups: Real Estate and Infrastructure.

#### **REAL ESTATE**

The Real Estate (RE) group invests in highquality commercial properties managed by experienced local operating partners. The group takes a targeted approach by focusing on select markets that can bring sufficient scale to investment activities.

The real estate portfolio consists primarily of investments in top-tier, income-producing properties that generate a stable income stream, suitable for long-term ownership. RE pursues development-oriented strategies where attractive risk-adjusted returns are supported by favourable supply/demand dynamics. This "build to core" strategy is designed to manufacture high-quality assets that will be suitable for long-term investment once completed. As the portfolio has matured, select value-added investments have been included with the goal of enhancing the portfolio's core return profile. Such programs are typically asset rehabilitation or repositioning strategies that require active asset management.

RE remains focused on core geographic markets and sectors: (i) the key developed markets of Canada, the U.S., the U.K., Western Europe and Australia, as well as the key emerging markets of Brazil, China and India; and (ii) the four main commercial property sectors of office, retail, industrial and multi-family residential. These markets and sectors are among the largest and most liquid in the real estate investable universe and continue to form the majority of our portfolio.

RE is active in both real estate equity and debt investments:

#### **REAL ESTATE EQUITY**

The Real Estate Equity programs form the majority of RA's real estate portfolio. The programs are organized geographically into the Americas, Europe and Asia sub-groups. The Equity group's primary activity is to source best-in-class real estate owner/ operators in select markets. Partnerships are formed through co-ownership structures such as joint ventures (JV), where significant co-ownership stakes are sought from them in order to ensure alignment of interests. These partners provide the necessary local market expertise and are also responsible for the day-to-day management of our properties.

The group's goal of building scalable programs requires significant capital investments from its JV partners, who tend to be large, well-capitalized, listed real estate companies. In recent years, we have also made a number of strategic investments in real estate operating companies in order to broaden the group's opportunity set.

#### PRIVATE REAL ESTATE DEBT

The Private Real Estate Debt group (PRED) complements the equity program by providing debt financing across the capital structure of quality properties. PRED's geographic and sector focus is broadly consistent with that of the RE Equity group, enabling it to leverage our in-house market knowledge and existing relationships. The two groups work closely by sharing market intelligence with the ultimate goal of providing a one-stop capital solution to potential partners.

#### **INFRASTRUCTURE**

The Infrastructure group invests globally in large-scale infrastructure assets that provide essential services with minimal substitution risk, within the utilities, transport and energy sectors. The group focuses on investing in lower risk, assetintensive businesses with stable and predictable long-term returns that operate within strong regulatory environments, and which afford us significant shareholding stakes and meaningful governance rights. The Infrastructure team also manages CPPIB's agriculture investments.

The Infrastructure group targets private and public-to-private equity investment opportunities in both developed and developing countries, and often invests with other like-minded partners. The Infrastructure group can also deploy additional capital to re-invest in its portfolio companies, and work alongside management teams to drive operational and financial improvements through proactive asset management initiatives.

## Our Internal Capabilities

We believe our dynamic culture is the foundation of our dedicated, results-driven organization. Our talented, committed employees are the primary reason for

our strong performance and reputation around the world. In recognition of that competitive advantage, we work diligently to ensure our culture is enriched and strengthened as we evolve and grow; notably by aligning our employees with our mandate, business priorities and values and engaging them through critical initiatives. And we continue to build our global capabilities and enhance our talent strategy to support our continued success.

#### **GLOBAL WORKFORCE**

This year, we expanded our workforce to support our active investment programs and global operations. At the end of fiscal 2017, our workforce grew to 1,392, an increase of 10% over 2016. Total employees in each location were: Toronto – 1,140, London – 113, Hong Kong – 83, New York – 24, São Paolo – 14, Mumbai – 8, Luxembourg – 4 and Sydney – 6.

In February 2017, we formalized our existing operations in Sydney, Australia with a stand-alone office. We have \$10.4 billion invested in Australia, representing 3.3% of the Fund's total assets. Australia is an important market for us, and establishing a formal presence in Sydney allows us to better manage current and future investments.

As we expand our global presence, we continue to identify new opportunities for workforce mobility, allowing employees to work in different international offices to further their career. In the past year, 36 employees began new assignments or permanently moved to other offices, up from 18 the previous year. An additional 39 employees started new secondments. This internal mobility provides positive opportunities for personal and career development and fosters cultural alignment and collaboration across our offices.

#### TALENT DEVELOPMENT

We strive to provide all our employees with opportunities to grow and build their careers. Our talent development programs span the employee lifecycle – from new recruits to our most senior leaders. Opportunities include formal and on-the-job training, coaching and networking. The programs provide a rich, diverse array of learning

opportunities for all levels, and foster collaboration and engagement with peers across the organization.

Ours is a knowledge-based and talentdriven organization, as we compete with the best to recruit and develop top-tier people. We need exceptional leaders who can focus on nurturing our talent from within. As a result, we are placing more emphasis on enhancing leadership skills.

This year, we introduced a new development program for Managing Directors that focuses on their critical roles as leaders of the business. The new program, called INSPIRE, was developed with careful consideration for our culture, mandate and purpose. The INSPIRE curriculum combines instructor-led sessions with virtual training, development assignments, assessments, coaching and roundtable discussions. We are also launching the LEAD program for Director-level employees, to address competencies specific to their responsibilities. We expect approximately 55 employees to participate in these two leadership programs in the coming year.

We gained momentum in the areas of development and career opportunities:

- > We promoted 200 employees in the past year, and filled 24% of our open positions internally;
- > Over 800 employees took part in organization-wide training programs targeted at various levels of the CPPIB career path – from recent graduates to new managers to Managing Directors; and,
- > Over 190 employees took advantage of Grow your Talent, a training program that equips leaders with the foundational skills and tools to provide feedback and coach employees.

We continue to engage in comprehensive succession planning, with a focus on our senior leaders, to ensure we have a robust talent pipeline.

#### **DIVERSITY AND INCLUSION**

As a global organization, we have always believed that diversity of background, experiences and perspectives is a key contributor to our high performance. Diversity ultimately leads to better

decisions and business results. Our workforce must reflect the communities and countries where we do business to be relevant across our global markets and to attract the right talent.

To date, our diversity efforts have focused on attracting, developing and retaining talented women. This goal remains a priority. Indeed, we expect half of our new hires will be women by 2020. In this past year 48% of our new hires were women, an increase of 2% from 2016. We had 28% female representation at our Managing Director and Senior Managing Director levels at the end of fiscal 2017, and 43% across all levels of the organization. These numbers show improvement from the previous year, but we recognize we have more work to do.

In addition to these objectives, we continue our partnership with Women in Capital Markets (WCM), the largest network of professional women in the Canadian financial sector. In June 2016, we welcomed the inaugural group of female students in our new four-month summer WCM Internship Program, which focuses on attracting qualified university students to the investment industry. We are also pleased to note that in November 2016, our Chief Financial Officer, Benita Warmbold was honoured by the Women's Executive Network (WXN) as one of Canada's Most Powerful Women: Top 100 Award Winners. Benita was also one of II women inducted into the WXN Hall of Fame. Together these initiatives help advance representation of women in the workplace and identify potential talent for CPPIB.

We held a number of events to increase awareness and support of women in the talent pipeline. For example, a session called "Views from the Top" featured members from CPPIB's Board of Directors sharing advice on family and career management. Participation in our career mentoring program increased by 40%, and we held learning sessions on networking, negotiations and presentation skills in various departments.

This year, our diversity efforts evolved beyond gender to better reflect the diversity of our growing talent base. In recognition of this, we recently

established a new Diversity and Inclusion Council across the organization. In addition, we launched Out@cppib, an organizationwide initiative to encourage the recruitment, retention and development of top LGBT talent and foster a welcoming environment.

Although we have made progress on our Employment Equity Plan, we still have opportunities in the representation of females, aboriginals and persons with disabilities in our workforce. Nevertheless, at the Employment Equity Achievement Awards (EEAA) in April 2016, the Federal Minister of Employment, Workforce Development and Labour recognized us with the Improved Representation award. This award recognized CPPIB for achieving the highest increase in our sector in workforce representation among designated groups between 2010 and 2014.

#### **CULTURE**

We are proud of our distinctive culture, which is anchored by our public purpose and driven by our Guiding Principles of Integrity, High Performance and Partnership. We ensure the culture is reinforced, celebrated and sustained among our global teams through our annual interactive Living our Guiding Principles leader-led employee sessions. Our Guiding Principles are further embedded into the daily routine of our employees through the hiring and on-boarding process, and reinforced through our regular Code of Conduct attestation, compliance requirements and information security policies, among others.

This past year, in partnership with McKinsey & Company, we conducted intensive research to collect employee feedback and gauge the alignment of our employees with our culture and current talent initiatives. These insights allowed us to solidify our talent strategy and shape our practices as a growing global organization. The research findings suggest our culture is strong and reinforces our Guiding Principles and talent priorities. In fact, the survey shows we are in the top decile of leading global companies across many measures of organizational health and talent management. Our purpose and values remain meaningful and credible, and provide the foundation for challenging, interesting work that attracts top talent and encourages high performance.

Our culture is also reinforced through the individual actions of our employees in volunteer and community activities. We encourage and support employee volunteer efforts through paid time off. We also have our Get Involved program, a company-wide committee that organizes and executes volunteer and charity events that address environmental, economic and social needs in the communities in which we operate. Many teams have proactively engaged in a wide range of community activities on their own initiative. As just one example, our Toronto-based team raised more than \$585,000 for United Way, with more than 60% of local employees contributing to the annual fundraising campaign.

#### SENIOR APPOINTMENTS

A number of senior executives took on new Management roles this past year, evidence of our deep bench strength and continued focus on developing the best talent in our industry.

Alain Carrier was promoted to Senior Managing Director, Head of International and joined the Senior Management Team. Alain is responsible for CPPIB's international investment activities and continues as Head of Europe. Graeme Eadie was appointed Senior Managing Director & Global Head of Real Assets, a new department that was announced in September 2016 that brings together the Real Estate Investments department and the existing Infrastructure and Agriculture groups. He was most recently Senior Managing Director & Global Head of Real Estate Investments. Shane Feeney was promoted to Senior Managing Director & Global Head of Private Investments and is a member of the Senior Management Team. He is responsible for CPPIB's private investment activities.

We also announced that Benita Warmbold, our Senior Managing Director and Chief Financial Officer, will retire from her position effective June 9, 2017. Since joining CPPIB in 2008, Benita has made important contributions to the growth and strategic direction of the organization, as well as the Finance, Analytics and Risk department.

# Furthering Operational Capabilities

Our operational capabilities aim to support the growth and globalization of CPPIB's investment programs. During fiscal 2017, we continued to advance our processes and controls with a view to achieving economies of scale in support of the unique requirements of our investment programs and enhanced investment framework.

This year, we completed our multi-year trading process initiative by establishing an integrated, straight-through trade life cycle process for publicly traded securities that is scalable to support increasing transaction volumes and complexity. We streamlined and automated the administrative elements of trade execution, resulting in reduced transaction processing time, costs and operational risk.

Our Information Technology (IT) operating model comprises the people, processes and systems that provide the organization with the tools to accomplish its business objectives efficiently and effectively. We are continually improving this model to meet the needs of the investment and core services departments while adding greater value and efficiency to our organization. During fiscal 2017, we evolved our IT Infrastructure Service operating model, resulting in permanent cost and resource effort savings while maintaining or improving service quality standards.

During the year, we advanced our multiyear initiative to renew critical financial accounting and reporting systems and processes. In fiscal 2017, we completed the redesign of key processes and systems, increasing efficiency and optimizing controls throughout in alignment with the target operating model.

We also launched a multi-year initiative to deliver a new enterprise operating model for data including acquiring, validating, managing and distributing portfolio, market and reference data across our organization. The new data operating model will rationalize and increase the efficiency of our data management activities.

### Accountability

CPPIB is accountable to Parliament and to the federal and provincial finance ministers who serve as the joint stewards of the CPP. We report to Parliament through the federal finance minister, who tables our Annual Report in the House of Commons. We file quarterly financial statements with the federal and provincial finance ministers and publish them on our website.

In addition, we hold public meetings every two years in the provinces that participate in the CPP. These meetings offer Canadians and stakeholder groups the opportunity to ask questions and learn more about CPPIB. Our next public meetings will be held in 2018. We are also committed to timely and continuous disclosure of significant investments and events.

Every three years, we provide information to the Office of the Chief Actuary of Canada for its evaluation of the CPP. In September 2016, the Chief Actuary released the 27<sup>th</sup> Actuarial Report on the CPP reflecting the period ended December 31, 2015. We also provide any information the federal and provincial finance ministers request for their periodic reviews of the CPP.

As required for all Crown corporations, every six years we undergo an external Special Examination of our records, systems and practices. Our Board of Directors appoints an external examiner to conduct this examination. The most recent Special Examination completed in early 2016 resulted in a clean opinion. A copy of the report is available on our website. The next Special Examination will be in 2022.

All public reports issued by CPPIB are subject to review and approval by the Audit Committee of our Board of Directors, which then recommends their approval to the full Board. This includes the Financial Statements and the Annual Report.

We seek to meet or exceed both legislated requirements and industry norms in maintaining high standards of conduct and business practice, and our commitment to ethical conduct. Our comprehensive governance and accountability framework includes measures designed to preserve the public trust.

One of these measures is our Code of Conduct for Directors and employees. This Code, which is available on our website, requires everyone at CPPIB to act as whistle-blowers if they become aware of a suspected breach. This can be done confidentially to an external conduct review advisor who is not part of Management or the Board of Directors. The Honourable Frank lacobucci was appointed to this position in fiscal 2006. He is a former justice of the Supreme Court of Canada, former member of the Ontario Securities Commission and author of five major books on business law. Mr. Iacobucci submits a report and meets in person with the Board at least once a year to discuss his activities.

We have also adopted internal standards and policies to ensure we act responsibly at all times as a major capital markets participant.

#### DISCLOSURE

We believe in transparency as the foundation of public trust. Our disclosure policy reflects the level of information that will help inform CPP contributors and beneficiaries about how we are managing CPPIB's investments. This policy is designed to foster a better understanding of what drives performance and sustainability of the Fund over time. Our disclosure includes the quarterly release of investment results and the Annual Report, which contain extensive information about Fund performance and investment activities.

We strive for consistent disclosure at the organizational level and within investment programs, recognizing that each program has unique legal, competitive and practical requirements. We are also committed to timely and continuous disclosure of significant investments and dispositions as well as material events.

Our website contains comprehensive information about how we operate. This includes details of our investments and partners. It also provides access to CPPIB's governing legislation and regulations, bylaws, governance manual and policies. These policies include the investment statements that guide us in managing the long-term CPP Fund Investment Portfolio and the short-term Cash for Benefits portfolio. We also maintain alternative digital channels to widely communicate new developments.

We substantially exceed our statutory disclosure requirements, and we are committed to reviewing our disclosure policies and practices on an ongoing basis to ensure that they keep pace with the evolution of the organization and the needs of Canadians.

### Financial Review

This Annual Report contains forward-looking statements reflecting Management's objectives, outlook and expectations as at May 11, 2017.

These statements involve risks and uncertainties. Therefore, our future investment activities may vary from those outlined herein.

#### Table of Contents

Management's Discussion & Analysis	42
Compensation Discussion & Analysis	70
Governance Practices of the Board of Directors	86
Financial Statements and Notes	97

### Management's Discussion & Analysis

### Financial Performance

Fiscal 2017 was a year punctuated by global political change that reverberated across major markets. The outcomes of the Brexit vote in June and the U.S. presidential election in November were largely unexpected among market participants and led to volatility in asset price performance. While initially there was a consensus that both outcomes would negatively affect stock values, global equities proved resilient and registered strong gains for the CPPIB fiscal year ending March 31, 2017. The impact was quite different for fixed income. Medium- and long-term interest rates rose meaningfully in both Canada and the U.S., leading to historically significant losses in government bond markets in our third quarter. Bond markets

responded to the new policy agenda in the U.S., which includes tax cuts and infrastructure spending, by propelling rates higher on the expectation of increases in both economic growth and inflation in the U.S. Additionally, the U.S. Federal Reserve raised its target interest rate by 25 basis points in December 2016 and again in March 2017. The December increase raised the U.S. short-term rate above the equivalent Canadian rate for the first time in a decade.

The highly diversified CPP Fund earned a strong net return of 11.8% for the year, delivering net income after all costs of \$33.5 billion – the second largest amount in the Fund's history.

The chart below provides the asset weightings of the Fund's long-term Investment Portfolio, by asset category, as described on page 28.

#### **ASSET MIX**

	As at N	1arch 31, 2017	As at N	March 31, 2016 <sup>1</sup>
ASSET CLASS	(\$ billions)	(%)	(\$ billions)	(%)
PUBLIC EQUITIES				
Canadian	10.5	3.3%	11.9	4.3%
Foreign	88.4	27.9%	66.9	24.0%
Emerging	17.9	5.7%	12.9	4.6%
	116.8	36.9%	91.7	32.9%
PRIVATE EQUITIES				
Canadian	1.2	0.4%	1.6	0.5%
Foreign	51.6	16.3%	45.7	16.4%
Emerging	5.8	1.8%	4.7	1.7%
	58.6	18.5%	52.0	18.6%
GOVERNMENT BONDS				
Non-marketable	24.0	7.6%	24.4	8.8%
Marketable	58.2	18.3%	32.5	11.6%
	82.2	25.9%	56.9	20.4%
CREDIT INVESTMENTS	17.5	5.5%	17.0	6.1%
REAL ASSETS				
Real estate	40.1	12.6%	36.7	13.1%
Infrastructure	24.3	7.7%	21.3	7.6%
Other <sup>2</sup>	8.7	2.8%	2.3	0.9%
	73.1	23.1%	60.3	21.6%
EXTERNAL DEBT ISSUANCE	(19.9)	(6.3%)	(15.6)	(5.6%)
CASH AND ABSOLUTE RETURN STRATEGIES <sup>3</sup>	(11.4)	(3.6%)	16.8	6.0%
INVESTMENT PORTFOLIO	316.9	100%	279.1	100.0%
CASH FOR BENEFITS PORTFOLIO	_	_	_	_
NET INVESTMENTS <sup>4</sup>	316.9	100%	279.1	100.0%

 $I.\ Certain\ comparative\ figures\ and\ percentages\ have\ been\ updated\ to\ be\ consistent\ with\ the\ current\ year's\ presentation.$ 

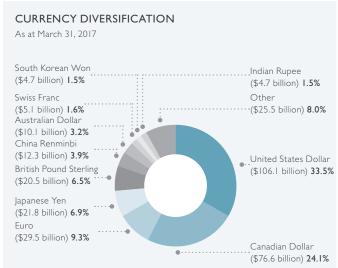
<sup>2.</sup> Other consists of Natural Resources and Agriculture investments, which were previously reported under Private Equities.

<sup>3.</sup> The negative balance of \$11.4 billion in Cash & Absolute Return Strategies represents the net amount of financing through derivatives and repurchase agreements, and the current net position from Absolute Return Strategies.

<sup>4.</sup> Excludes non-investment assets such as premises and equipment and non-investment liabilities, totalling \$(0.2) billion for fiscal 2017. As a result, net investments will differ from the net assets figure of \$316.7 billion.

The charts below illustrate the global diversification of our portfolio, by region or country and by currency exposure. Canadian assets represented 16.5% of the portfolio at the end of fiscal 2017, and totalled \$52.2 billion. Foreign assets represented 83.5% and totalled \$264.7 billion. Private assets made up 47.1% of the portfolio. Foreign currency exposures represented 75.9% and totalled \$240.3 billion. Currency diversification represents the underlying currency exposure of our investments whereas global diversification represents the geographic exposure.





#### PORTFOLIO RETURNS<sup>1</sup>

ASSET CLASS	Fiscal 2017	Fiscal 2016 <sup>2</sup>
PUBLIC EQUITIES		
Canadian	19.2%	(6.4%)
Foreign	18.9%	(2.8%)
Emerging	18.9%	(8.7%)
PRIVATE EQUITIES		
Canadian	8.6%	4.0%
Foreign	15.8%	8.8%
Emerging	15.4%	17.0%
GOVERNMENT BONDS		
Marketable	(0.9%)	2.3%
Non-marketable	1.8%	(0.2%)
CREDIT INVESTMENTS	13.9%	8.4%
REAL ASSETS		
Real estate	8.3%	12.3%
Infrastructure	7.4%	9.3%
Other <sup>3</sup>	16.8%	(7.7%)
INVESTMENT PORTFOLIO <sup>4</sup>	12.2%	3.7%

- I. Investment results are calculated and reported on a time-weighted unhedged Canadian dollar basis, before CPPIB operating expenses.
- $2. Certain\ comparative\ figures\ and\ percentages\ have\ been\ updated\ to\ be\ consistent\ with\ the\ current\ year's\ presentation.$
- 3. Other consists of Natural Resources and Agriculture investments, which were previously reported under Private Equities.
- 4. The total Fund return in fiscal 2017 includes performance of \$(854) million from currency management activities, \$(308) million from cash and liquidity management activities, and a gain of \$1.4 billion from absolute return strategies, which are not attributed to an asset class.

		Fiscal 2017		Fiscal 2016
	%	\$ billions	%	\$ billions
TOTAL FUND NET RETURNS <sup>1, 2, 3</sup>				
I-year return	11.8%	33.5	3.4%	9.1
5-year return	11.8%	129.6	10.6%	105.6
10-year return	6.7%	146.1	6.8%	125.6

I. The rate of return reflects the performance of the Investment Portfolio, which excludes the Cash for Benefits portfolio.

<sup>2.</sup> Percentage returns are annualized, dollar figures are cumulative.

<sup>3.</sup> After all CPPIB costs.

#### TOTAL FUND PERFORMANCE

The CPP Fund ended its fiscal year on March 31, 2017, with net assets of \$316.7 billion, an increase of \$37.8 billion from the prior year. This increase consisted of \$33.5 billion in net income after all CPPIB costs and \$4.3 billion in net CPP contributions.

The Investment Portfolio delivered a gross return of 12.2% for fiscal 2017, or 11.8% on a net basis after all CPPIB costs. The return reflects gains from global equities as well as strong performance from our active programs across the investment departments. Foreign currencies made a small contribution following several years of significant gains.

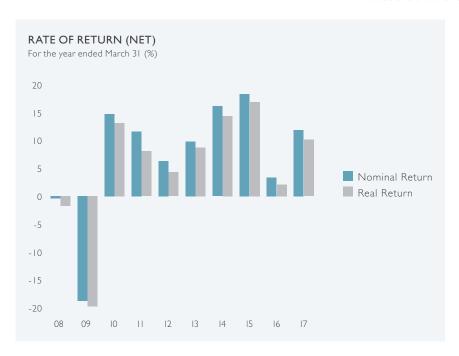
The primary source of return in fiscal 2017 was the Investment Portfolio's broad direct and indirect exposures to global equity markets. While public equities experienced some volatility the major indexes nevertheless yielded double-digit returns. In local currency terms, the U.S. S&P 500 index returned 17.2% and German DAX returned 23.6%, while the Canadian S&P/TSX Composite returned 18.6%. A strong gain of 23.3% in the U.K.'s FTSE 100 Index reflected the impact of a dramatically weakened British pound, which is beneficial to British-based companies with international exposure.

Fixed income investments were relatively flat in fiscal 2017 as the impact from rising medium- and long-term interest rates in North America reduced returns. The U.S. 10-year Treasury yield increased by 62 basis points, which led the Canadian government 10-year yield 39 basis points higher. U.S. Treasuries lost 1.4% for the year, while Canadian government bonds gained 0.6%. The U.S. Federal Reserve raised its target rate by 25 basis points to 0.75% in December 2016 and again to 1.0% in March 2017, while the Bank of Canada remained on hold for the year at 0.5%. The jump in longer-term rates occurred mostly in November with yields rising as a result of higher growth

expectations following the outcome of the U.S. election and subsequent policy agenda. The Fund's direct fixed income exposure is primarily held in Canadian and U.S. government bonds.

The Canadian dollar's performance was mixed in fiscal 2017, strengthening against the British pound and euro, while weakening against the strong U.S. dollar and Japanese yen. The loonie benefited from a 32% increase in the price of crude oil and moderately strong employment data. The impact on Fund performance was a small currency gain of \$1.9 billion as the 3.1% rise in the U.S. dollar was partly offset by the Brexit-induced fall in the British pound and the euro, which weakened by 10.3% and 3.2%, respectively. The CPP Fund is a global portfolio that holds assets denominated in many foreign currencies. We generally do not hedge these widely diversified currency exposures back to the Canadian dollar — our view on currency hedging is explained on page 25. The Fund's largest foreign currency exposure is to the U.S. dollar, followed by the euro and the Japanese yen.

As a long-term investor, evaluating performance over five- and 10-year periods provides a much more meaningful assessment than for any single year. For the five-year period ending March 31, 2017, the CPP Fund generated an annualized nominal return of 11.8% after deducting all CPPIB costs. For the 10-year period, the Fund generated an annualized nominal return of 6.7% after all costs. In the 27th Actuarial Report on the CPP, the Chief Actuary of Canada noted that investment income in the calendar years 2013 to 2015 was 248% above the previous actuarial report's projections. In determining the CPP's sustainability, the Report also assumes that the Fund's long-term prospective real rate of return will average 3.9%, after all CPPIB costs and adjusting for inflation. The CPP Fund generated annualized net real returns of 10.3% and 5.1% for the most recent five- and 10-year periods.



#### REFERENCE PORTFOLIO RETURNS

The Reference Portfolio is a two-asset passive portfolio comprising public market global equities and nominal bonds issued by Canadian governments, each represented by broad market indexes. As such, it provides a clear benchmark for long-term total portfolio returns at a comparable level of risk. See page 25 for more information.

ASSET CLASS	Benchmark	2017 Return (%)	2016 Return (%)
Equity	S&P Global Equity LargeMidCap Index <sup>1</sup>	19.2%	(1.9%)
Fixed Income	FTSE TMX Canada All Government Bond Index	0.6%	0.8%
Total CPP Reference Portfolio		14.9%	(1.0%)

I. Net of tax, unhedged.

#### PERFORMANCE AGAINST REFERENCE PORTFOLIO

The CPP Fund earned a net return of 11.8% and net income of \$33.5 billion in fiscal 2017 after deducting all costs, against the Reference Portfolio's return of 14.9%. The Reference Portfolio's gain reflected the strong performance of global public equity markets in the fiscal year. The Investment Portfolio's performance is well within normal variation in any single year; and more importantly, the Investment Portfolio has outperformed the Reference Portfolio over the past five- and 10-year periods.

We measure the difference between the Investment Portfolio performance and that of the Reference Portfolio in dollar terms, or dollar value-added (DVA), after deducting all costs. In fiscal 2017, net DVA was negative \$8.2 billion, but over the past five- and 10-year periods net DVA gains of \$5.6 billion and \$6.7 billion were earned.

Two sources account for most of this year's underperformance relative to the Reference Portfolio:

 The largest single effect is the much broader diversification of the Investment Portfolio, including its major commitment to private asset classes such as private equity, infrastructure and real estate, as compared to the Reference Portfolio's heavy weight in public equities (78% for 2017).

The diversified allocation of assets to major asset classes on average in fiscal 2017 is shown below:

Fiscal 2017

	%
AVERAGE ASSET CLASS WEIGHTS	
Public Equities	35%
Private Equities	19%
Real Assets <sup>1</sup>	22%
Credit Investments	6%
Government Bonds	20%
Cash and Absolute Return Strategies	(2%)

I. Includes 13% for real estate, 7% for infrastructure, and 2% for natural resources and agriculture.

When global public equity markets have a strong year, the equities-dominated Reference Portfolio will naturally tend to generate higher returns than the more diversified Investment Portfolio. In years when asset class returns are more mixed across the spectrum, and especially when public equity markets are falling, the Investment Portfolio will tend to outperform, as in 2016. Our total portfolio construction process is described on page 25. By including a limited degree of leverage in the Investment Portfolio we can better diversify and stabilize its returns through a higher allocation to bonds and asset classes with underlying bond-like exposures. These exposures, as well

- as this year's lower average effective allocation of 72% to equity exposures in the Investment Portfolio than in the Reference Portfolio, led to negative added value from asset allocation.
- 2. Another major impact arises from the nature of the valuation process for private investments. The fair values reported for investments in private markets are determined by appraisal processes. These tend to generate investment values that in the short term are less volatile than, and slightly lag, the prices of comparable public market equivalents. In periods when public markets rise rapidly, such as this year in equities, we expect little or even negative DVA in private investments, which now comprise 47.1% of the portfolio. Conversely, in periods of sharp public market losses, we expect private investments to outperform their public counterparts. While using our comparative advantages to invest substantially in private markets may introduce volatility into our short-term relative performance against the Reference Portfolio, we believe it will create greater net value for the Fund over the long term.

We do not place undue emphasis on results, whether positive or negative, in any single year. Consistent with our long-term time horizon, we focus on tracking absolute and value-added performance over rolling five-year periods. This aligns with the measurement period of our compensation framework, as described on page 70. While it does not necessarily represent a full-market cycle, the five-year period provides a reasonable basis for assessing longer-term performance over multiple such periods.

On a longer-term basis, Reference Portfolio and net value-added returns have been as follows:

		Fiscal 2017
	%	\$ billions
REFERENCE PORTFOLIO RETURNS		
I-year	14.9%	41.6
5-year	11.2%	124.0
10-year	6.5%	139.3

I. Percentage returns are annualized, dollar figures are cumulative.

	Fiscal 2017 \$ billions
NET VALUE-ADDED RETURNS <sup>1,2</sup>	
I-year	(8.2)
5-year	5.6
10-year	6.7

I. Relative to CPP Reference Portfolio. Figures are cumulative.

<sup>2.</sup> After all CPPIB costs.

Given our long investment horizon, we track cumulative valueadded returns since the inception of the Reference Portfolio on April I, 2006 (fiscal 2007). Cumulative value-added returns over the past II years totals \$8.9 billion, after all costs. This is net of all costs, external and internal, including operating costs allocated to the investment departments and also other operating costs that are not attributable to specific departments.

#### CASH FOR BENEFITS PORTFOLIO

Since 2004, we have been responsible for the short-term cash management program that supports monthly benefit payments made by the CPP. This Cash for Benefits portfolio is segregated from the long-term Investment Portfolio and invested only in liquid money market instruments. The primary objective is to ensure the CPP can meet benefit payment obligations on any business day.

A secondary objective is to match or exceed the benchmark return of the FTSE TMX Canada 91-day Treasury Bill Index. The portfolio earned 0.7% or \$8.6 million for fiscal 2017 versus 0.5% for the index. Over the course of the year, this short-term portfolio had an average balance of approximately \$1.1 billion.

#### MANAGING TOTAL COSTS

#### BUILDING CPPIB TODAY AND FOR THE FUTURE

CPPIB seeks to maximize investment returns while avoiding undue risk of loss having regard to the factors that may affect the funding of the CPP. These objectives guide all decisions, whether it is creating a new investment program, investing in technology systems, or opening a new office. As a result, we only incur costs, internal or external, when sufficiently confident of enhanced long-term returns for the Fund net of all costs, remaining vigilant as we continue to build an organization designed to realize our public purpose.

In 2006, CPPIB made the decision to adopt an active management strategy in order to create value-building growth, generating investment returns that will exceed passive management over the long run. Our decision to manage the Fund actively was not made lightly. This strategy is not a low-cost approach. It comes with the necessary cost and complexity of building an enduring organization with diverse, internationally competitive investment programs designed to maximize long-term, risk-adjusted returns. To justify active management, results relative to risk must be measured against available alternatives to ensure we deliver superior returns over numerous economic cycles and multiple generations.

Ultimately, the benefits of our active management can be distilled down to one word: stability. Generating above-market returns over time can help cushion the impact of other factors affecting the sustainability of the CPP in the long term, such as wage growth, demographics, fertility, immigration and longevity, most of which are completely outside the control of CPPIB.

CPPIB's costs have increased over the years, consistent with the growth in the investment portfolio and the development of our active management strategy. We have, and continue to develop, the in-house capabilities required to operate as a truly global investment organization. These capabilities include world-class investment

skills, expertise in critical corporate functions, sophisticated systems and the establishment of a local presence in key regions to access the best opportunities and manage the Fund's investments. While maintaining offices in key international markets increases operating expenses this is more than offset by the value we derive.

Continuing to build internal investment expertise and capabilities where CPPIB has comparative advantages not only makes good business sense from economic and competitive perspectives, but it is also in the CPP Fund's best interest. Infrastructure investing is a case in point. We estimate that the total costs for an externally managed \$18 billion pool of committed capital on average would range from \$700 million to \$800 million per year. By contrast, the fully costed internal management of our \$18 billion infrastructure portfolio (at cost) is approximately \$70 million.

In order to obtain the diversification and skills we require, it is not practical to build all capabilities in-house and in these instances, we use external managers to complement our internal programs. To ensure we derive the appropriate value from managers, we only partner with top-tier managers and fee arrangements are structured in a manner to ensure our interests are aligned. See page 48 for more details.

Scale is an important consideration in light of the projected growth in our investment portfolio. Scale allows us to attract and retain expert professionals from across the world, both inside and outside the organization. It also ensures the critical mass we need to realistically compete for the world's most attractive investments and win against formidable competitors. It has allowed the organization to establish and effectively manage 25 distinct investment programs, meeting the goal of diversification and to leverage insights from one program to enhance others.

One example of increasing economies of scale is the trend in the ratio of core services professionals to investment professionals. Core services represent the business areas such as information technology, governance, operations and finance that partner with and support the investment teams. While the assets we manage and oversee have grown significantly over the years, the ratio of core services to investment professionals has declined. In fiscal 2011, the ratio was 1.10 and has declined to 1.03 in fiscal 2017. While there has been a levelling off in the ratio recently, we expect efficiencies to continue and the downward trend to resume as we realize operating leverage from investments in processes and systems.

One of the ways we assess our cost-effectiveness is through participation in external benchmarking studies. Results from a 2016 research and benchmarking study completed by CEM Benchmarking (CEM) indicate that CPPIB full-time-equivalent staffing levels for investment departments is aligned with the benchmark, while the number of CPPIB core services full-time equivalent<sup>2</sup> staffing is about 10% lower than the peer comparator benchmark developed by CEM. We continue to monitor these relationships closely and we are comfortable that this level of core services staffing provides us with the resourcing necessary to support investment activities and properly govern and administer the assets we manage.

I. CEM Benchmarking Inc. is an independent provider of objective and actionable benchmarking information for large pools of capital including pension funds, endowments/foundations and sovereign wealth funds.

<sup>2.</sup> Full-time staffing includes both full-time CPPIB employees and contractors.

#### **GROWTH OF CPPIB**

The base CPP Fund assets are expected to grow to more than \$900 billion by 2040. Given this expected growth, we need the capacity to deploy capital prudently to maximize returns, which requires CPPIB to build capabilities today for the growth of tomorrow.

		Fiscal 2006
	Fiscal 2017	(before active management)
Net Assets	\$316.7 billion	\$98.0 billion
% foreign investments	83.5%	35.7%
Total employees	1,392	164
Number of offices	Eight	One
Number of investment programs	25	Six
Number of external partners	227	62

#### **COST GOVERNANCE FRAMEWORK**

Our framework includes expense management policies and authorities, as well as monthly expense reporting to Senior Management and quarterly reporting to the Board of Directors to ensure that growth is pursued in a responsible and cost-effective manner consistent with the Board-approved business plan and operating budget. In addition, our employee travel and expense policy ensures that the expenses incurred by employees are reasonable and appropriate to the needs of our business. Oversight also includes regular reviews by the Internal Audit group.

We are committed to continually updating CPP Fund contributors and beneficiaries on our results. We report total Fund returns after all costs associated with active management. We have been and remain committed to continually evolving our expense disclosure.

#### FISCAL 2017 TOTAL COSTS

To manage the \$316.7 billion portfolio (as at March 31, 2017) and to generate the \$33.5 billion of net income after all costs, CPPIB incurred total costs of \$2,834 million for fiscal 2017.

This consisted of \$923 million for operating expenses, \$1,464 million for investment management fees and \$447 million for transaction costs. In comparison, total costs for fiscal 2016 were \$2,643 million, which comprised \$876 million for operating expenses, \$1,330 million for investment management fees, and \$437 million for transaction costs.

Since inception of our active management strategy CPPIB has provided \$159.1 billion in net income after all CPPIB costs to the Fund and provided \$8.9 billion in dollar value-added, after all costs, compared to what a passive portfolio might have provided over the same time period.



#### **OPERATING EXPENSES**

\$923 million

#### WHAT DOES IT PAY FOR?

Personnel, global offices, technology systems and other operating costs.

#### WHY DO WE INCUR THE COSTS?

In order to prudently maximize the CPP Fund, we invest in top-tier talent and have offices in key markets to access and monitor the best investment opportunities.



#### **INVESTMENT MANAGEMENT FEES**

\$987 million management fees \$477 million performance fees

#### WHAT DOES IT PAY FOR?

External managers for their specific expertise and performance.

#### WHY DO WE INCUR THE COSTS?

External managers help diversify the Fund through different strategies and regions and produce exceptional performance, net of all costs.



#### TRANSACTION COSTS

\$447 million

#### WHAT DOES IT PAY FOR?

External legal and tax advisors, consultants and trading commissions.

#### WHY DO WE INCUR THE COSTS?

Pursuing complex, large investment opportunities in public and private markets requires us to conduct greater due diligence including complying with international regulatory and tax regimes.

This level of total costs reflects the internal and external resources required to invest, manage and govern the total Fund assets across 25 distinct investment programs, in 46 countries around the world where we have private holdings.

#### **OPERATING EXPENSES**

Operating expenses reflect the direct costs incurred to manage the CPP Fund. Operating expenses were \$923 million this year compared to \$876 million in fiscal 2016. The fiscal 2017 operating expense ratio of 31.3 cents for every \$100 of invested assets is lower compared to the fiscal 2016 operating expense ratio of 32.0 cents and lower than the fiscal 2015 ratio of 33.9 cents.

The \$47 million year-over-year increase in total operating expenses is primarily due to higher personnel costs related to salaries, incentive compensation and one-time severance costs. These costs reflect the impact of increased staffing levels, continued strong Fund performance and the impact of a one-time severance charge associated with a restructuring of our PMI department.

Total personnel expenses were \$625 million in fiscal 2017, an increase of \$31 million versus the prior year. Total employee-based compensation increased due to higher staff levels both in Canada and internationally to support growth and expansion.

Approximately 32% of our personnel expenses are denominated in foreign currencies and that percentage is expected to increase in the coming years as we continue to hire specialized talent, expertise and skills in our international offices. International growth continues to be primarily investment-related professionals who typically come at a higher cost than the core services staff who are primarily centralized in our Toronto office location.

General operating expenses of \$244 million were \$13 million higher on a year-over-year basis largely due to increases in market data and research costs, and premises expenses related to office rent to accommodate staffing levels, as well as higher communications costs and employee travel expenses, and the impact of increasing taxes assessed on our international office operations.

Departments are continually looking at ways to reduce costs. For example, in fiscal 2017, Operations and Technology achieved approximately \$10 million in permanent savings. These savings include reductions in emerging market custodial fees, outsourced IT infrastructure and services agreements, as well as efficiencies and contract renegotiations across our data services.

#### INVESTMENT MANAGEMENT FEES

Given our broadly diversified portfolio, we seek exposure to a wide range of asset classes and active strategies but in some cases it would not be practical or cost-efficient to build a dedicated inhouse team. In addition, we seek managers who have the highest capabilities and returns in the world, net of all costs incurred.

In the five-year period since fiscal 2013, these programs have delivered \$41.3 billion of net investment income to CPPIB. In addition, our private external partners have also provided us with a large number of attractive direct investment opportunities, resulting in \$19.8 billion of investments and \$12.1 billion of net investment income with no associated fees.

The amounts referred to in the category of investment management fees include management fees primarily paid to hedge funds and private equity funds, as well as performance fees paid to hedge fund managers. Management fees are paid to external fund managers for investing and managing capital committed by CPPIB.

Total investment management fees paid to external asset managers amounted to \$1,464 million in fiscal 2017 compared to \$1,330 million in fiscal 2016. The \$1,464 million in fiscal 2017 reflects \$987 million in management fees paid primarily to hedge funds and private equity funds and \$477 million in performance fees. The \$134 million year-over-year increase in investment management fees is due to the continued growth in the level of assets and commitments with external managers and the strong returns generated by these external managers.

#### **USE OF EXTERNAL FUND MANAGERS**

The vast majority of our investment management fees are related to our Investment Partnerships programs. External Portfolio Management (EPM) manages public market funds and Funds, Secondaries & Co-investments (FSC) manages private equity funds, as described below.

### INVESTMENT MANAGEMENT FEES IN PUBLIC MARKET FUNDS (EPM)

EPM invests in managers that are expected to generate attractive, sustainable results on a risk-adjusted basis, net of all costs.

Since fiscal 2013, our managers have delivered \$8.4 billion of net investment income.

Most of our fee terms are more advantageous than the prevailing standard. Our fees are lower than industry average because we negotiate aggressively. When negotiating fees and other terms, our primary focus is achieving alignment between the manager's incentives and our investment goals. Some examples of our approach to improve alignment, reduce costs and increase net returns include:

- > Trading lower management fees for higher performance fees;
- Considering longer commitment periods in exchange for lower fee structures;
- Making co-investments with no management fee and lower performance fees;
- > Instituting performance hurdles; and
- Investing in emerging managers, where we can usually achieve lower fees and secure scarce investment capacity.

Fee arrangements are reviewed regularly and we negotiated improved fees with several of our managers in fiscal 2017. We can be limited in our ability to negotiate lower fees where managers are capacity constrained, but we have declined allocations with a number of high-quality managers when we were unable to negotiate acceptable terms.

### INVESTMENT MANAGEMENT FEES IN PRIVATE EQUITY FUNDS, SECONDARIES & CO-INVESTMENTS

FSC invests in the funds of private equity managers who we expect will outperform public alternatives on a risk-adjusted basis, and will provide direct investment opportunities to CPPIB, most importantly for our Direct Private Equity, Private Equity Asia and Co-investment programs.

Our management fees are generally below the industry average fee levels. Some examples of our approach to drive down our costs include:

- > Securing direct investment opportunities while paying no fees by being a large investor in the funds that we select;
- > Using our scale to secure larger allocations at reduced fees; and
- > Making commitments early in the fundraising process when this allows us to obtain lower fee structures.

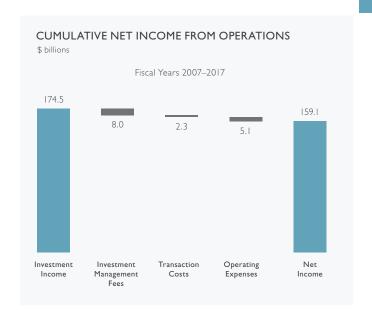
Since fiscal 2013, our managers have delivered \$23.0 billion of net investment income. In addition, CPPIB has generated net investment income of \$12.1 billion on direct investments sourced from FSC managers over this same period.

#### TRANSACTION COSTS

Transaction costs for fiscal 2017 totalled \$447 million compared to \$437 million in the prior year, a marginal increase of \$10 million over the prior year. This year, we completed 19 global transactions valued at over \$500 million each involving complex due diligence and negotiations.

Transaction costs include a variety of non-recurring expenses including due diligence consulting services, as well as legal and tax advisory fees required to support the acquisition and dispositions of private market assets or, in the case of public markets, commissions paid when trading securities.

Given the nature of these costs, they will vary from year to year according to the number, size and complexity of our investing activities in any given period. These costs are expected to increase over time as we continue to increase our private asset holdings and dispositions, as well as our public markets trading activities in both developed and emerging markets given the expected growth in the Fund.



Notes 8 and 9 to the Financial Statements provide additional total cost information on pages 124 and 125.

### Performance of Investment Departments

The following section provides details about the assets, activities and performance of each investment department. A description of each department's responsibilities is found on pages 32 to 37. We conduct all our investment activity in accordance with the Statement

of Investment Objectives, Policies, Return Expectations and Risk Management (the Investment Statement) approved by our Board of Directors and the Policy on Sustainable Investing discussed on page 34. These and other Board policies are available on our website, www.cppib.com.

The table below shows the year-end composition of net investment assets:

#### YEAR-END COMPOSITION OF NET INVESTMENTS BY DEPARTMENT AND ASSET CLASS

For the year ended March 31, 2017	Public Market	Investment	Private	Real	
\$ billions	Investments <sup>1</sup>	Partnerships	Investments	Assets	Total
Public Equities	113.4	1.5	1.9	_	116.8
Private Equities	_	38.7	19.9	_	58.6
Government Bonds	81.0		1.2	_	82.2
Credit Investments	1.3		11.4	4.8	17.5
Real Assets	_		4.3	68.8	73.I
External Debt Issuance	(19.9)		_	_	(19.9)
Cash and Absolute Return Strategies <sup>2</sup>	(12.0)	0.6	_	_	(11.4)
Total	163.8	40.8	38.7	73.6	316.9

I. Public Market Investments include \$164.0 billion of assets managed on behalf of the Investment Planning Committee.

This year, we successfully executed a wide range of investment programs, expanded our internal capabilities internationally and further broadened our global reach in pursuit of our long-term objectives. We believe that a local presence in key markets is critical to accessing the most attractive investment opportunities around the world. This ensures diligent asset management, while maintaining professionals with expertise specific to each market.

In fiscal 2017, we concluded 38 transactions across all of our investment programs, each with a value of over \$300 million. We made these sizeable and complex transactions in 11 countries evidence of our deep internal capabilities and wide global reach.

The chart below shows the contributions of each investment department to net income, after all CPPIB costs, for the current fiscal year as well as the historical five- and 10-year periods. The net income in fiscal 2017 reflects the Fund's growing scale and the solid returns for the year. Foreign currency translation contributed \$1.9 billion to net income this year, following substantial contributions over the past five-year periods totalling \$23.9 billion as the Canadian dollar generally weakened. Over the past 10 years, the Fund has grown by approximately \$200 billion, with close to three-quarters of this increase coming from investment income.

#### NET INCOME BY INVESTMENT DEPARTMENT

As at March 31, 2017

\$ millions	Fiscal 2017	5-year	10-year
Public Market Investments	(685)	8,367	8,597
Investment Partnerships <sup>1</sup>	6,823	N/A	N/A
Private Investments	5,174	35,875	39,819
Real Assets <sup>2</sup>	4,998	25,681	29,178
Total Before IPC Portfolio <sup>1</sup>	16,310	79,458	87,129
IPC Portfolio <sup>3</sup>	17,120	50,074	58,838
Total <sup>4</sup>	33,430	129,532	145,967

<sup>1.</sup> Total net income for 5-year and 10-year include the past two years' net income of \$9,535 million from Investment Partnerships. Investment Partnerships was created on April 1, 2015 by combining External Portfolio Management, Thematic Investing and Funds, Secondaries & Co-investments. If the historical results were reallocated, the 5- and 10-year net income for Investment Partnerships would be \$32,982 million and \$36,900 million, respectively.

<sup>2.</sup> The negative balance of \$11.4 billion in Cash & Absolute Return Strategies represents the net amount of financing through derivatives and repurchase agreements, and the current net position from Absolute Return Strategies. Net investments reported for Absolute Return Strategies are based on the value of investments net of funding and hedges. Total assets under management for Public Market Investments and Investment Partnerships are reported within the respective departmental section on page 52 and page 56.

<sup>2.</sup> Real Estate (equity and debt), Infrastructure, and Agriculture performance are reported under Real Assets for all history.

<sup>3.</sup> Includes performance from Cash & Liquidity Group.

<sup>4.</sup> Excludes \$9 million, \$56 million and \$142 million from the Cash for Benefits portfolio for fiscal 2017, 5-year and 10-year periods, respectively.

The dollar value-added (DVA) contributions of the investment departments shown in the chart below are measured relative to the respective portfolios' return comparators, in each case computed as blended returns on underlying return-risk factors weighted to represent the specific programs in each department.

As explained on page 45, for fiscal 2017 the negative DVA primarily arose from two sources:

i. For the IPC, the more diversified asset allocation of the Investment Portfolio relative to the Reference Portfolio dominated by 78% in public equities. Currency hedging

- activities to maintain desired total Canadian dollar exposure also generated losses this year of \$0.7 billion, which was included in the IPC portfolio; and
- For private markets, the slower-moving asset valuations relative to their public market comparables driven by rising equity markets.

#### NET VALUE-ADDED CONTRIBUTIONS OF INVESTMENT DEPARTMENTS<sup>1, 2</sup>

\$ billions	I-Year	5-Year	10-Year
Public Market Investments	(0.7)	3.9	4.0
Investment Partnerships <sup>3</sup>	(1.9)	N/A	N/A
Private Investments	(0.5)	0.5	2.5
Real Assets <sup>4</sup>	(1.3)	3.5	3.7
Total Before IPC Portfolio <sup>3</sup>	(4.4)	9.6	12.0
IPC Portfolio <sup>5</sup>	(3.7)	(4.1)	(5.4)
Total	(8.2)	5.6	6.7

I. After all CPPIB costs.

### INVESTMENT PLANNING COMMITTEE AND TOTAL PORTFOLIO MANAGEMENT

The largest element in the IPC Portfolio is the public markets Balancing Portfolio (see page 28). It consists primarily of equity holdings. Following widespread equity market gains in fiscal 2017, the Balancing Portfolio earned net income of \$17.7 billion this year. The small active component of the IPC portfolio earned \$0.6 billion. Other total portfolio management activities generated a loss of \$1.2 billion.

<sup>2.</sup> Foreign currency fluctuations have no impact on value-added of investment departments. The currency impact is reported in the IPC Portfolio. See page 25 for more details.

<sup>3.</sup> Total value-added for 5-Year and 10-Year include past two years' value-added of \$1.8 billion from Investment Partnerships. Investment Partnerships was created on April 1, 2015 by combining External Portfolio Management, Thematic Investing, and Funds, Secondaries & Co-Investments. If the historical results were reallocated, the 5-year and 10-year total value-added for Investment Partnerships would be \$2.5 billion and \$5.5 billion respectively.

<sup>4.</sup> Real Estate (equity and debt), Infrastructure, and Agriculture performance are reported under Real Assets for all history.

<sup>5.</sup> Includes performance from Cash & Liquidity Group.

### Public Market Investments At A Glance

#### **NET INCOME**

-\$0.7 billion

**ASSETS UNDER MANAGEMENT** 

\$34.3 billion

#### KEY FOCUS THIS YEAR

- > Scaling PMI's investment activities from a bottom-up perspective.
- > Operationalizing CPPIB's enterprise-wide business plan and facilitating a greater focus on total return.
- > Implementing the PMI organizational restructuring.

#### **SUMMARY**

At the end of fiscal 2017, assets under management (AUM) of \$34.3 billion are actively managed by internal teams, not including programs managed on behalf of the IPC.

The distribution and development of PMI's AUM is shown below at the current and prior year ends, reflecting a decrease this year.

As discussed on page 33, PMI restructured parts of the department which included winding down the Global Tactical Asset Allocation (GTAA) and Short Horizon Alpha (SHA) programs. Fundamental Equities increased its AUM as Relationship Investments funded new and follow-on investments and Active Fundamental Equities (AFE) continued to scale its portfolio. Quantitative Equities also increased its AUM, in line with its planned increase in active risk in fiscal 2017.

#### PMI ASSETS UNDER MANAGEMENT (AUM) FOR ACTIVE PROGRAMS

PMI Group		
\$ billions	March 31, 2017	March 31, 2016
Fundamental Equities		
Relationship Investments	9.8	7.5
Active Fundamental Equities	13.7	7.8
Quantitative Equities	10.4	8.5
PMI Common	0.4	0.6
Global Tactical Asset Allocation	_	3.4
Short Horizon Alpha	_	11.4
Total	34.3	39.2

To calculate the size of PMI's activities on a comparable basis, we compute their AUM in the following ways: For internal long/short securities-based programs, we use the value of the long side of the program. For investments in externally managed funds, we use the reported net asset values. In fiscal years prior to 2017, certain AUM figures included an implied asset amount using a risk-based approach. Note that balances managed by the Cash & Liquidity Group on behalf of the Investment Planning Committee are excluded from the table above.

The following chart shows the combined value-added generated by PMI's active investment programs in fiscal 2017. PMI reports returns only in dollar amounts, as activities are conducted on a market-neutral or long/short basis for which there is no generally accepted and appropriate underlying asset base for measuring returns in percentage terms.

	Fiscal 2017	Fiscal 2016
PUBLIC MARKET INVESTMENTS – ACTIVE	\$ billions	\$ billions
CONTRIBUTION TO PORTFOLIO NET VALUE-ADDED <sup>1</sup>		
I-year	(0.7)	0.6
5-year <sup>2</sup>	3.9	4.6
10-year <sup>2</sup>	4.0	4.7

- I. After all CPPIB costs.
- 2. External Portfolio Management and Thematic Investing performance is reported under Public Market Investments up to March 31, 2015.

Results were mixed across the investments groups, with PMI having negative overall performance for the one-year period. This was amid global markets that continued to be impacted by central bank policy decisions and negative policy rates, the Brexit vote, the U.S. presidential election and oil price volatility. The distribution of results across investment groups was consistent with the expectation that groups will not all move in the same direction in any given year. PMI remains confident in their collective ability to continue to generate and sustain significant value creation over the longer term. PMI manages to a five-year investment horizon which continues to be strong.

#### **FISCAL 2017 ACTIVITIES**

In fiscal 2017, collaborating across investment groups both within PMI and across CPPIB remained a priority. PMI continued to play a critical role in operationalizing CPPIB's enterprise-wide business plan, advancing top-down strategic tilting, equity factor investing and cash and liquidity management capabilities. The departmental restructuring allowed PMI to better align with CPPIB's focus on the total Fund and current business requirements, while continuing to scale investment activities from a bottom-up perspective. Further details about these activities are included in the group summaries below.

#### **GLOBAL CAPITAL MARKETS**

As part of the PMI restructuring in November 2016, Global Capital Markets (GCM) took on expanded responsibilities for translating investment signals from Total Portfolio Management (TPM). GCM created three new investment teams dedicated to Credit, Volatility and Carry, leveraging existing resources from the former Short Horizon Alpha (SHA) and Global Tactical Asset Allocation (GTAA) groups. Specifically, these teams will provide a public credit portfolio investment platform to be used in the implementation of the new credit balancing portfolio for the Fund, as well as product expertise, research analytics and risk management to facilitate the build out of the Volatility and Carry factor exposure programs (as described on page 29).

#### CASH & LIQUIDITY GROUP

The Cash & Liquidity Group (CLG) within GCM is responsible for overseeing CPPIB's unsecured and secured debt financing programs and works closely with Total Portfolio Management and Finance, Analytics & Risk in the planning and monitoring of total Fund liquidity and collateral.

CPPIB is currently authorized by the Board to issue various forms of unsecured indebtedness with up to \$25 billion aggregate principal outstanding at any one time.

In 2009, CPPIB established a Canadian commercial paper program, followed by a U.S. program in 2012. During the fiscal year, we

further diversified its issuance by introducing a euro commercial paper program. The combined commercial paper programs, which totalled \$11.1 billion at March 31, 2017, provide a flexible source of short-term financing across a broadly diversified investor base.

In addition, during the fiscal year CPPIB established a global medium-term note program, under which CPPIB can issue unsecured senior notes globally, on a private placement basis. This program, when combined with the existing Canadian program, had \$8.8 billion outstanding at March 31, 2017. Term debt will continue to play an important role in diversifying the liquidity profile of the total portfolio.

To date, the Term Debt program has been very successful and well received by the international investment community. We have launched two programs so far with over 200 investors from more than 30 countries participating in our issuance.

As the breadth of CPPIB investment activities continues to grow, CLG will play an important role in planning and monitoring total Fund liquidity. CLG works closely with the Total Portfolio Management group to help forecast the Fund's balance sheet and ensures liquidity and financing considerations are reflected in long-term portfolio allocation decisions.

In addition, CLG collaborates with Finance, Analytics & Risk to ensure the maintenance of a robust liquidity policy framework, including daily monitoring, stress analysis and escalation procedures. During fiscal 2017, CPPIB established a US\$3.5 billion committed credit facility to provide additional liquidity support to our financing activities. Because CLG is responsible for funding and liquidity management across the organization, the results of their activities are included within IPC rather than within PMI's investment results.

#### **FUNDAMENTAL EQUITIES**

In fiscal 2017, work began to combine the Relationship Investments and Global Corporate Securities – Fundamental Investing groups into an integrated team called Fundamental Equities (FE). This team is responsible for the full spectrum of fundamental-based equity investing. The integration provides the benefit of combined resources of the two teams focusing on the themes, sectors and companies that can generate the greatest returns for the Fund, while actively engaging with management teams and boards where CPPIB can have positive impact and influence.

#### **RELATIONSHIP INVESTMENTS**

In fiscal 2017, Relationship Investments (RI) continued to scale its portfolio and further diversified its holdings by investing in new regions and sectors. Moreover, the group commenced an initiative to launch a Direct Equity Investing business out of the São Paulo

office, responsible for covering all of Latin America. During the year RI completed several transactions. Among the highlights:

- > Invested US\$280 million in the convertible preferred equity securities of a parent company of Advanced Disposal Services, Inc., which converted to common equity of Advanced Disposal upon its initial public offering. This represents an approximate 20% ownership stake in the company. Based in Ponte Vedra, Florida, Advanced Disposal is the fourth largest solid waste company in the U.S., providing integrated, non-hazardous solid waste collection, transfer, disposal and recycling services to residential, commercial, industrial and municipal customers across 16 U.S. states and the Bahamas.
- > Invested A\$300 million for 9.9% ownership in Qube Holdings Limited (Qube). The investment was used to fund Qube's share of the purchase price for Asciano Limited, which was acquired by a consortium of global investors including CPPIB. Qube is the largest integrated provider of import-export logistics services in Australia, and acquired 50% of the ports assets of Asciano in this transformative transaction.
- > Completed a follow-on investment totalling approximately \$400 million in Kotak Mahindra Bank (Kotak). Kotak is a leading private-sector bank holding company in India, with additional lines of business in life insurance, brokerage and asset management.

While RI's portfolio underperformed this year as a result of the write-off of a pre-IPO turn-around investment that suffered operational challenges and a liquidity crisis, RI remains confident in its ability to generate long-term above-market returns. The team has a track record of adding value through active engagement with management teams and boards, and remains particularly focused on supporting existing portfolio companies as they pursue accretive M&A.

#### **ACTIVE FUNDAMENTAL EQUITIES**

In fiscal 2017, Active Fundamental Equities (AFE) significantly grew gross capital deployed, including considerable expansion outside of North America. The team continued to conduct in-depth thematic research, most notably on communications infrastructure, e-commerce logistics, biosimilars and media to determine potential future investment opportunities for AFE and other investment groups across the organization. AFE also received approval for a new strategy to invest actively in securities listed in the China A-share market.

The AFE portfolio is structured such that at least 80% of the total risk of the program is attributable to security-specific risk from investments at any point in time. Systematic factor risks such as industry, geography or style tilts consume less than 20% of the portfolio's risk and do not unduly influence the overall portfolio performance. The negative performance from AFE was predominantly idiosyncratic in nature with the largest detractors to performance stemming from specific healthcare investments. Overall, the portfolio continued to perform within expected gain/loss parameters.

#### QUANTITATIVE EQUITIES

In fiscal 2017, the Quantitative Equities (QE) team refined and expanded its global strategies based on new data sources and novel analytic techniques. The team also continued its partnership with Total Portfolio Management (TPM) to advance the Equity

Factor Investing initiative, as part of CPPIB's enterprise-wide business plan. This program has been integrated into TPM's Signals process and the QE team is now focused on implementation.

After a slow start in the first guarter of fiscal 2017, the guantitative equity strategies delivered strong returns over the course of the year. All three factor categories (value, sentiment and quality) delivered positive performance. Value was weak in the first quarter, but performed strongly in the remaining quarters. The performance of sentiment factors was less consistent through the year, but finished with a positive result. Fiscal 2017 was a year with no shortage of macro-related events but with a risk-controlled investment process, the quantitative equity strategies performed well. Brexit had no significant impact on performance, and the quantitative equity book experienced positive performance after the U.S. election.

#### GLOBAL TACTICAL ASSET ALLOCATION

The Global Tactical Asset Allocation (GTAA) portfolio was wound down in November 2016. GTAA's underperformance in fiscal 2017 was primarily driven by the Fixed Income program (FITX). The largest detractor was a short position in Japanese 10-year bonds (IGBs) versus a long view on U.S. Treasuries. As with all GTAA programs, FITX placed relatively high weight on long-run valuation signals that aligned well with our comparative advantages. However, this valuation style did not perform well across global bond markets over the course of the past fiscal year. The best performing portfolio within GTAA was the Commodities program.

#### STRATEGIC TILTING

Strategic Tilting involves changing the overall asset class exposure of the total Fund to take into account the relative attractiveness of certain assets at any point in time. A major milestone in this initiative was the creation in November 2016 of a Strategic Tilting group within PMI, which will be responsible for research into the Strategic Tilting process. The Strategic Tilting group will initially focus on designing an appropriate governance structure to manage the Strategic Tilting program.

#### SHORT HORIZON ALPHA

Prior to the restructuring, Short Horizon Alpha (SHA) had a positive year from both a DVA and project standpoint. The group's specific portfolio structure of running diversified exposure across credit and volatility while adding tail hedges via quantitative relative value provided high quality returns over the course of the past year. The group wound down positions in November 2016.

#### LOOKING AHEAD

Building on the progress made in fiscal 2017, PMI groups will continue to support CPPIB's total return approach, advancing topdown strategic tilting, equity factor investing and cash and liquidity management capabilities. In particular, PMI will focus its efforts on:

- > Further developing the Direct Investing initiative in Latin America and supporting the delivery of desired levels of emerging markets
- > Building on knowledge-sharing initiatives and refining the case study approach as a means to analyze and communicate learning from strategies, projects and investments; and
- > Continuing to refine and operationalize the new organizational structure.

### Investment Partnerships At A Glance

#### **NET INCOME**

\$6.8 billion

**ASSETS UNDER MANAGEMENT** 

\$77.8 billion

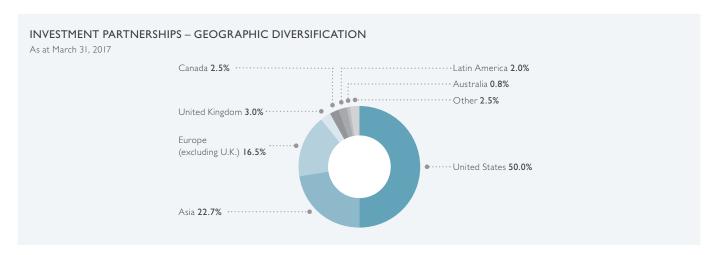
#### **KEY FOCUS THIS YEAR**

- Continuing to build strong relationships with external managers.
- > Proactive sourcing efforts to gain access to attractive fund managers, secondary transactions and co-investments.

#### **SUMMARY**

Investment Partnerships (IP) assets under management grew from \$68.0 billion at the end of fiscal 2016 to \$77.8 billion at the end of fiscal 2017.

As at March 31, 2017, IP maintains over 160 relationships across both our public and private funds. The growth of our portfolio was mainly driven by a combination of investment and foreign exchange gains. The IP team also grew from 101 to 123 members across Toronto, London and Hong Kong.



The following tables show IP's assets under management by group and the combined value-added generated by IP's active investment programs in fiscal 2017. We report performance for IP as a whole only in dollar amounts, as many of the activities conducted in

public markets are conducted on a long/short or partially funded basis for which there is no generally accepted and appropriate underlying asset base for measuring returns in percentage terms.

#### INVESTMENT PARTNERSHIPS ASSETS UNDER MANAGEMENT (AUM)

\$ billions	March 31, 2017	March 31, 2016
External Portfolio Management	34.6	30.5
Thematic Investing	2.9	1.7
Funds, Secondaries & Co-Investments	40.3	35.8
Total	77.8	68.0

To calculate the size of assets under management for absolute return strategies used for the EPM and TI programs, we compute their AUM in the following ways. For investments in externally managed funds, we use the reported net asset values. For long/short securities-based programs, we use the value of the long side of the program.

	Fiscal 2017	Fiscal 2016
INVESTMENT PARTNERSHIPS	\$ billions	\$ billions
CONTRIBUTION TO PORTFOLIO NET VALUE-ADDED <sup>1, 2</sup>		
I-year	(1.9)	3.8
2-year <sup>3</sup>	1.8	N/A

- I. After all CPPIB costs.
- 2. Foreign currency fluctuations have no impact on departmental value-added. See page 25 for more details.
- 3. Investment Partnerships was created on April 1, 2015 by combining External Portfolio Management, Thematic Investing, and Funds, Secondaries & Co-Investments. If the historical results were reallocated, the 5-year and 10-year dollar value-added would be \$2.5 billion and \$5.5 billion, respectively.

In fiscal 2017, IP earned significant net income due to strong performance from the Funds, Secondaries & Co-Investments (FSC) and External Portfolio Management (EPM) portfolios. While the IP portfolio continues to outperform its return comparators over the long term, the public market equity rally caused value-added returns to be negative for fiscal 2017. Additional context on each group's performance can be found below.

#### **FISCAL 2017 ACTIVITIES**

In fiscal 2017, IP sharpened its focus on maximizing the total relationship value generated by our external manager partners, including direct investments sourced by our partners. IP updated its investment decision-making process to explicitly recognize the total relationship value generated by our partners. In addition, IP continued to leverage its relationships by significantly expanding its co-investment activities globally.

Activities in fiscal 2017 for each IP group are described below.

#### **EXTERNAL PORTFOLIO MANAGEMENT**

In fiscal 2017, most of External Portfolio Management's (EPM) strategies performed well, led by multi-strategy, fixed income and equity long/short investments. One of our longest standing partners was a key contributor to the multi-strategy portfolio's gains, as the manager's thesis for a core long-term holding came to fruition and generated significant profits for the EPM portfolio.

EPM continued to scale its portfolio by making additional investments in high-conviction managers, and improved portfolio transparency and alignment with our partners. EPM's assets under management grew to \$34.6 billion from \$30.5 billion last year.

We added seven new mandates, increased funding to five existing mandates and redeemed six mandates. Allocations were made primarily in global macro and fixed income strategies. The portfolio now includes 53 managers, down from 57 at the end of fiscal 2016. Overall, they direct 71 mandates.

Building on our partnership model, we enhanced our Managed Account Platform, expanding our capability to co-invest alongside our managers and increasing our coverage of emerging managers.

Led by EPM's team in Asia, CPPIB received approval for its first Renminbi Qualified Foreign Institutional Investor (RQFII) quota from the Chinese government, receiving RMB 100 million of quota. The RQFII program allows foreign investors to access China's capital markets and provides greater investment flexibility than allowed under the Qualified Foreign Institutional Investor (QFII) program. CPPIB was one of the first pension funds globally to be granted an RQFII license.

#### THEMATIC INVESTING

In fiscal 2017, Thematic Investing (TI) continued to grow in both personnel and the assets it manages, and expanded its geographic focus to include countries outside of North America. TI increased its headcount from nine to 18 people and its assets under management from approximately \$1.7 billion to \$2.9 billion. TI launched investment strategies related to its research on disruptive technologies. TI also completed its first direct private investment during the year, investing US\$250 million in Viking Cruises to support and accelerate the company's growth initiatives and strengthen its balance sheet. TI also researched and launched its first systematic thematic portfolio designed to capture the economic growth potential that can result from shifts in a population's age structure.

In fiscal 2017, TI continued scaling its exposure and adding new strategies but remained concentrated in the healthcare, consumer discretionary and information technology sectors. Those sectors underperformed broad market indexes that were supported by strong performance in sectors such as financials and energy. In the long term TI expects to outperform the broader market but in the short term may experience underperformance when sharp sector rotations occur.

#### **FUNDS, SECONDARIES & CO-INVESTMENTS**

Funds, Secondaries & Co-Investments (FSC) currently manages more than \$67.4 billion in total exposure and maintains relationships with 112 general partners globally in pursuit of investments that will outperform public equity benchmarks. In fiscal 2017, FSC increased its portfolio by \$4.4 billion to a total of \$40.3 billion in carrying value, primarily due to foreign exchange gains driven by the U.S. dollar appreciating against the Canadian dollar, and \$4.9 billion in investment gains across a number of funds.

#### **FUNDS**

The Funds team currently has relationships with 80 fund managers with \$46.2 billion of total exposure (up 11% from fiscal 2016), which includes both investments and commitments. The group's investment portfolio value increased to \$25.0 billion in 181 funds at year-end 2017, from \$22.4 billion in 167 funds last year. In fiscal 2017, we deployed \$5.0 billion, received \$5.8 billion back from asset realizations from our fund managers, and generated a 15.7% net return. Fundraising activity by private equity firms remained steady in fiscal 2017. In this environment, the Funds team made a total of \$6.3 billion of commitments, including \$5.6 billion commitments to its existing managers, as well as introduced three new managers to its portfolio. The pipeline of new fund commitments remains strong and the team expects to continue making additional commitments to both new and existing private equity manager relationships.

#### SECONDARIES & CO-INVESTMENTS

Secondaries & Co-Investments (S&C) generated an 18.2% net return in fiscal 2017 with total exposure at year-end of \$7.7 billion, which is approximately in line with the prior year. The secondaries market, particularly at the larger end, has been unusually competitive and the S&C team has chosen to be disciplined. New secondaries investments totalled \$0.5 billion in seven transactions. This compares to total distributions from our secondaries portfolio of \$2.9 billion as the managers took advantage of favourable valuations to sell underlying companies. This distribution activity

was led by significant realizations in S&C's direct secondary portfolio including Mattress Firm, Milk Specialties and ILC Industries managed, respectively, by JW Childs, Kainos Capital and Behrman Capital. S&C continues to have a cautious outlook for secondaries and is actively focusing on segments of the market where it can secure transactions with attractive risk-adjusted returns.

By contrast, S&C's co-investments business had its most active year since inception investing \$1.2 billion in 14 transactions. We expected this increase in investment activity following the expansion of the scope of our co-investment program last year, which allowed us to increase penetration into Funds' mid-market manager relationships and to selectively co-underwrite transactions.

#### PRIVATE EQUITY ASIA

Private Equity Asia (PE Asia) grew its portfolio from \$10.8 billion to \$13.4 billion in total exposure in fiscal 2017. We closed five direct investments for \$0.8 billion, offset by \$1.2 billion in distributions across the portfolio. The team made a total of \$1.9 billion in commitments to five funds, and closed its first secondary transaction in collaboration with the S&C team for \$0.1 billion. Our team continued to strengthen our General Partner network and seek attractive and sizeable private equity deal opportunities in the region, which is consistent with CPPIB's strategy of increasing exposure in the emerging markets as well as in the private equity asset class. PE Asia generated a 12.8% net return in fiscal 2017.

The team continues to focus on building a diversified portfolio, amid subdued investment activities across the region and taking into account the various challenges of each regional market. PE Asia added Warburg Pincus as a new relationship by committing to their China companion fund and also closed its first investment in Japan in Accordia Golf alongside our partner MBK Partners. The team also acquired a 3.3% direct ownership interest in Bharti Infratel Limited for US\$300 million, as part of the purchase of a 10.3% stake alongside funds advised by KKR, from India's Bharti Airtel Limited. Bharti Infratel deploys, owns and manages telecom towers and communication structures for various mobile operators, and is India's leading player.

Following year end, we signed an agreement alongside Baring Private Equity Asia to acquire all of the outstanding shares of, and to privatize, Nord Anglia Education, Inc. (Nord Anglia) for US\$4.3 billion, including the repayment of debt. Nord Anglia operates 43 leading private schools globally in 15 countries in China, Europe, Middle East, North America and South East Asia. The transaction is subject to shareholder approval and customary closing conditions.

#### LOOKING AHEAD

In fiscal 2018, IP will focus its efforts on:

- Continuing to broaden its relationships with external managers to expand its existing programs;
- > Creating further opportunities for other CPPIB investment strategies; and
- > Expanding the number of themes that it covers while narrowing its investment focus on selected areas within those themes that it expects will have the most significant impact.

### Private Investments At A Glance

#### **FISCAL 2017 NET RETURN**

15.0%

**NET INCOME** 

\$5.2 billion

**NET ASSETS** 

\$38.7 billion

PERCENTAGE OF TOTAL FUND

12.2%

#### **KEY FOCUS THIS YEAR**

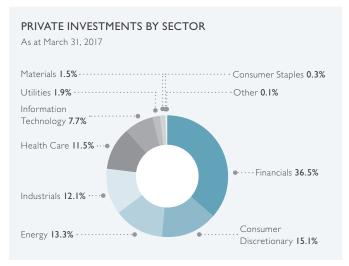
- > Building scale through our platforms.
- > Strengthening the governance and management of our assets.

#### **SUMMARY**

Private Investments (PI) assets grew from \$34.2 billion at the end of fiscal 2016 to \$38.7 billion at the end of fiscal 2017. This growth was driven by new investment activities totalling \$9.9 billion, valuation gains of \$3.7 billion and foreign exchange gains of \$0.7 billion, partially offset by dispositions totalling



\$9.7 billion. PI's assets represent approximately 12.2% of the CPP Fund. This figure excludes investments made in private companies by the Infrastructure and Agriculture groups, which are now part of the Real Assets department. As shown below, PI's investments are diversified by industry and geography.



The first table below summarizes aggregated returns in absolute terms with rates of return calculated on an unhedged time-weighted basis. The second table shows dollars of net value-added.

	Fiscal 2017	Fiscal 2016
PRIVATE INVESTMENTS	%	%
RETURNS		
I-year excluding foreign currency impact <sup>I</sup>	13.3%	4.1%
I-year <sup>l</sup>	15.3%	6.7%
I-year net <sup>2</sup>	15.0%	6.2%
I-year return comparator <sup>3</sup>	15.8%	0.3%

	Fiscal 2017	Fiscal 2016
PRIVATE INVESTMENTS	\$ billions	\$ billions
CONTRIBUTION TO PORTFOLIO NET VALUE-ADDED <sup>2, 3, 4</sup>		
I-year	(0.5)	1.3
5-year <sup>5, 6</sup>	0.5	2.4
10-year <sup>5, 6</sup>	2.5	3.8

- I. After transaction costs and management fees, but before operating expenses.
- 2. After all CPPIB costs.
- 3. Return comparator is the weighted return of return-risk factors representative of the department's investment programs. Value-added is relative to the return comparator.
- 4. Foreign currency fluctuations have no impact on departmental value-added. See page 25 for more details.
- 5. Funds, Secondaries & Co-Investments performance is reported under Private Investments up to March 31, 2015. If the historical results were reallocated, the 5-year and 10-year dollar value-added would be \$2.7 billion and \$2.6 billion respectively.
- 6. Infrastructure and Agriculture performance are excluded for all history.

In fiscal 2017, the Private Investments department delivered solid absolute returns. This was due to a combination of strong income flows from our direct equity and debt investments, large realizations and valuation gains. The gains resulted from strong operating results in several portfolio companies, the partial recovery in commodity prices and rising public company comparable multiples. Strong public market gains in fiscal 2017 put pressure on short-term value-added returns, however, the Private Investments portfolio continues to outpace relevant public market indexes' returns over the long term. Over the past five years, the PI portfolio has generated a net return of 20.5% and net income of \$19.5 billion!

#### **FISCAL 2017 ACTIVITIES**

In fiscal 2017, PI deployed \$9.9 billion in capital, continuing on its growth trajectory. This was possible in a highly competitive market because of PI's focus on platform investing as an alternate source of long-term capital deployment. As at March 31, 2017, PI's four platforms totalled \$10.9 billion in asset value, representing 28.2% of the PI portfolio. A platform is an investment vehicle, which allows us to achieve scale in a defined market or geography, by leveraging the investment's management expertise (e.g., deal origination or execution, specialized expertise, relationships), in the most resource efficient manner.

In fiscal 2016, Wolf Infrastructure, the Natural Resources (NR) group's first platform investment, was established as a midstream energy infrastructure investment vehicle focused on opportunities in Western Canada. In fiscal 2017, Wolf closed its first acquisition of a 50% ownership interest in Access Pipeline from Devon Energy Corp for \$1.4 billion with an equity investment of \$683 million from CPPIB. The Access Pipeline system includes pipelines that transport blended bitumen and diluent within Alberta. This is a strategic cornerstone asset for the Wolf vehicle from which management expects to build a broader midstream business over time.

 $I.\ Excludes\ Funds,\ Secondaries\ \&\ Co-investments,\ Infrastructure\ and\ Agriculture.$ 

In November 2016, Direct Private Equity (DPE) acquired Ascot Underwriting together with Ascot management, from American International Group (AIG) for a total consideration of US\$1.1 billion. Ascot is a global specialty property and casualty (P&C) insurance underwriter operating primarily in the Lloyd's of London insurance market. Ascot is Pl's latest platform investment following Wilton Re, Antares and Wolf, and marks the first step in DPE's property & casualty insurance "build" platform strategy in the sector.

Pl's largest platform, Antares, grew its loan portfolio by US\$3.2 billion since the acquisition in August 2015. In November 2016, Pl sold a 16% equity stake in Antares to a private investment fund managed by Northleaf Capital Partners.

Additional activities in fiscal 2017 for each PI sub-group are described below.

#### DIRECT PRIVATE EQUITY

In fiscal 2017, the private equity markets in North America and Europe saw a continued rise in valuation of potential acquisition targets and intensifying competition for new investment opportunities amongst private equity fund managers, corporations and public markets. DPE has remained disciplined in executing its investment program and continues to focus on strategic investments and platforms that may not be accessible to smaller or more traditional private equity investors.

At year end, the DPE portfolio consisted of 28 direct investments valued at \$17.6 billion compared with 28 valued at \$15.7 billion one year earlier. The growth in the portfolio was driven primarily by \$1.8 billion in valuation gains as proceeds from realizations offset new investments totalling \$0.2 billion.

This year, in addition to the Ascot acquisition, DPE successfully executed two other major transactions:

- > Jointly acquired Hotelbeds Group alongside European private equity firm Cinven for a total enterprise value of €1.165 billion. Based in Spain, Hotelbeds is the largest independent business-to-business (B2B) bedbank globally, offering hotel rooms to the travel industry from its inventory of 75,000 hotels in over 180 countries.
- > Acquired a 48% stake in GlobalLogic Holdings Limited from Apax Partners. GlobalLogic is a California-based product engineering services company with over 11,000 employees worldwide.

Following year-end, DPE signed a definitive agreement with Blackstone to jointly acquire Ascend Learning, LLC (Ascend). Ascend is a leading provider of technology-based educational content and tools for students, educational institutions and employers in healthcare and other high-growth professions. The transaction is subject to customary regulatory approvals.

#### NATURAL RESOURCES

The recovery of oil and natural gas prices has resulted in increased cash flow for many energy companies and more consolidation activities. Valuations and credit spreads have improved for upstream, midstream and mining companies as compared to last year. The NR group continued to support its portfolio companies in navigating commodity price volatility taking advantage of attractive opportunities to grow. During the year, the group added a new Managing Director in New York with strong industry knowledge and sector relationships in an effort to expand the group's presence globally.

At year end, the NR portfolio consisted of nine direct investments valued at \$4.3 billion compared with \$1.4 billion a year earlier. The growth in the portfolio was driven primarily by \$2.4 billion in new investment activity and \$0.7 billion in valuation gains.

In addition to the acquisition of Access Pipeline, notable transactions this fiscal year included:

- > Acquired all of the Denver Julesburg Basin oil and gas assets in Colorado owned by Encana Corporation for US\$609 million, through Crestone Peak Resources LLC, a joint entity with The Broe Group. CPPIB owns a 95% interest in Crestone Peak Resources.
- Invested additional equity into Teine Energy Ltd. to support Teine's acquisition of Penn West Petroleum's oil and gas assets in Saskatchewan for \$975 million. Since 2010, we have invested approximately \$1.3 billion in Teine and hold approximately 90% of the company on a fully diluted basis.

#### PRINCIPAL CREDIT INVESTMENTS

Credit market volatility continued into the first quarter of fiscal 2017 resulting in the slowest quarter of new issuance volumes since the recession. Sentiment improved thereafter on the back of a rally in commodities and lower rated issuers. As a result, both high yield and leveraged loan markets experienced their best year on a total returns basis since 2009. The Principal Credit Investments (PCI) team was active in the secondary market building positions during periods of market volatility.

At year end, PCI assets totalled \$16.8 billion, compared to \$17.0 billion at the end of fiscal 2016. The portfolio maintained its size within the year as dispositions offset new investment activity and valuation gains of \$1.7 billion and \$1.2 billion, respectively.

The credit portfolio is geographically diversified, with 72% in North America, 19% in Europe, 5% in Asia Pacific and 4% in Latin America. The Europe and North America teams have been increasingly active in the secondary market, with the Hong Kong and New York offices ramping up on the group's presence globally.

Notable PCI transactions this fiscal year included:

- > Deployed US\$152.8 million in the first lien term loan of Pretium Packaging LLC. Based in Missouri, Pretium designs and manufactures custom rigid plastic containers for food and beverage, household and industrial, pharmaceutical and personal care customers.
- > Invested US\$110 million in the first lien term loan of an infrastructure and security software company.

Through the Intellectual Property (IP) and royalties team, PCI continues to invest in such assets as patents, trademarks, copyrights and mineral rights. This fiscal year, the group closed two major royalty investments. One was within the energy royalty sector committing US\$450 million to LongPoint Minerals LLC, a company focused on the acquisition of oil and natural gas mineral and royalty interests in the U.S. Another was in health care with the acquisition of a portion of Dana-Farber Cancer Institute's royalty interests on immuno-oncology drugs used for the treatment of metastatic cancer.

#### PORTFOLIO VALUE CREATION

Portfolio Value Creation (PVC) supports deal teams globally across the entire investment lifecycle. This year, PVC continued to scale its capabilities and embed standard processes to support the oversight and management of CPPIB's direct investments. In combination with the Legal department, PVC rolled out Transaction Common Documents guidelines across Private Investments. PVC provided Day-I transition support and IOO-day planning for new assets brought into CPPIB portfolios via a rigorous onboarding approach that establishes robust long-term processes and controls. The team continued to execute a robust monitoring process across major CPPIB portfolio companies. As CPPIB is focused on governing our assets for the long term, PVC continued its roll-out of guidelines for governing our assets through a director training program. In addition, PVC provided support on commercial and operational due diligences. The team also worked with investment teams and management to identify and realize several opportunities to drive value creation in portfolio assets across the Fund.

#### LOOKING AHEAD

Pl's sub-groups will continue to support CPPIB's objectives of scaling investment activities and focusing on total return.

- > DPE will continue to execute on the Co-Sponsorship strategy by investing directly alongside world-class private equity fund partners, invest in financial institutions at scale and build its portfolio of Strategic Investments.
- > Natural Resources will focus on establishing stand-alone infrastructure and processes for its new investment vehicles, deliver organic growth through existing portfolio companies and platforms, and evaluate opportunities in the renewable energy sector.
- > PCI will continue to focus on direct investing and origination in leveraged finance markets, deploy additional capital from existing platform and deployment vehicles, and leverage its investment partnership in Latin America for further growth in the region.
- > PVC will create value by reducing risk through an optimal approach to commercial/operational and ESG diligence, appropriate governance standards and director guidelines, smooth asset transition into the portfolio, and effective monitoring.

### Real Assets At A Glance

#### **FISCAL 2017 NET RETURN**

7.5%

**NET INCOME** 

\$5.0 billion

**NET ASSETS** 

\$73.6 billion

PERCENTAGE OF TOTAL FUND

23.2%

#### **KEY FOCUS THIS YEAR**

- > Pursuing selective growth in target markets and sectors.
- > Continuing to build out global execution capabilities.

#### **SUMMARY**

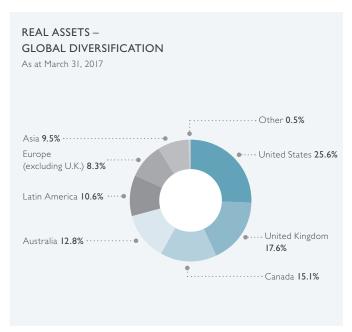
The Real Assets (RA) portfolio increased from \$63.0 billion at the end of fiscal 2016 to a current \$73.6 billion, representing a net increase of \$10.6 billion. The change in portfolio value was the net result of several factors: (i) new investment activity totalling \$12.4 billion; (ii) asset dispositions and return of capital of \$4.8 billion; and (iii) changes in valuation and foreign exchange movement during the year totalling \$3.0 billion.

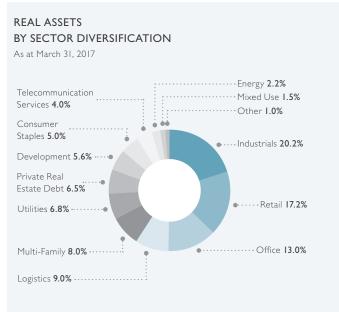
The RA portfolio represents 23.2% of the Fund, managed by 135 professionals located across seven offices globally. Our geographic footprint spans five continents and consists of 166 investments.

In fiscal 2017, CPPIB sought to consolidate its long-horizon, inflationlinked private investment programs into a single department with a common strategy and investment approach. As a result, we

combined the Infrastructure and Agriculture groups within Private Investments and the equity and debt programs within Real Estate Investments to form the Real Assets investment department. The investment groups within Real Assets share a number of similarities with respect to risk profile and the capital intensive and long-dated nature of its investment activities. The Infrastructure and Real Estate groups are also amongst our most global businesses and the reorganization allows greater efficiencies and resource sharing across local offices. Concurrently, we also formed a new strategy function within RA to improve the level of co-ordination between the investment groups and to assist with top-down portfolio design and construction. We expect this function will play a key role in integrating the groups under the new department and to build a common strategy and investment approach for Real Assets.

The charts below provide a summary of RA's holdings by geography and sector.





The two tables below show RA's performance in absolute terms and relative to its return comparator of weighted factor returns. The first table summarizes the absolute returns of all assets (equity value) with rates of return calculated on a time-weighted basis.

The second table shows the DVA generated by the department compared to the return comparator.

	Fiscal 2017	Fiscal 2016
REAL ASSETS	%	%
RETURNS		
I-year excluding foreign currency impact <sup>1</sup>	8.3	10.1
I-year <sup>i</sup>	7.8	10.9
I-year net <sup>2</sup>	7.5	10.6
I-year return comparator <sup>3</sup>	10.4	(0)

REAL ASSETS	Fiscal 2017	Fiscal 2016 \$ billions
	\$ billions	
CONTRIBUTION TO PORTFOLIO NET VALUE-ADDED <sup>2, 3, 4</sup>		
I-year	(1.3)	5.8
5-year <sup>5</sup>	3.5	5.7
10-year <sup>5</sup>	3.7	5.9

- $I.\ After \ transaction\ costs\ and\ management\ fees,\ but\ before\ operating\ expenses.$
- 2. After all CPPIB costs.
- 3. Return comparator is the weighted return of return-risk factors representative of the department's investment programs. Value-added is relative to the return comparator.
- 4. Foreign currency fluctuations have no impact on departmental value-added. See page 25 for more details.
- 5. Real Estate (equity and debt), Infrastructure, and Agriculture performance are reported under Real Assets for all history.

RA's overall return comparator comprises four components reflecting the four different types of investments pursued by the department. Each component assigns different weights to the factor returns underlying each type of investment. For example, programs with a higher return-risk profile are assigned a larger equity weight in the comparator to account for the higher volatility in returns.

Three of the department's four investment programs underperformed against their respective performance objectives this year. Our private real estate debt program performed well this year, aided by pre-payment income received from several borrowers and by a strong collateral base which did not experience any credit loss.

#### **FISCAL 2017 ACTIVITIES**

The global real asset markets are now entering their eighth year of expansion. While the pace of asset appreciation this year has moderated compared to previous years, competition for high-quality assets and experienced operating partners remains intense. Amid a low growth environment and political uncertainty, investors continue to target income-oriented investments in real estate and infrastructure that provide stable cash flows with the potential for future income growth through inflationary pressures. Despite record pricing and a low yielding environment for high-quality assets globally, an attractive financing environment continues to allow investors to earn reasonable levered returns relative to other asset classes.

The outcome of the U.S. election during the second half of the fiscal year spurred a more optimistic economic outlook, leading to a rise in long-term bond yields in anticipation of inflationary pressures from increased infrastructure spending and corporate tax cuts. Market returns expectations for private real assets have yet to adjust to the new higher yielding environment, but we are beginning to see corresponding adjustments in listed real assets such as REITs in the public markets.

It is challenging to predict when interest rates will begin to revert to more normal levels and when and if corresponding adjustment to private asset values will occur. But as an interest-rate sensitive asset class, the path to a higher-yielding environment will be disruptive to real assets such as real estate and infrastructure.

RA has been mindful of the potential risks to the portfolio from a rising interest rate environment and in fiscal 2017 continued to execute our multi-year plan to prepare our portfolio for this potential event. First, while the teams were very active in assessing potential opportunities globally this year, we remained disciplined in our approach. As a result, many opportunities were not pursued due to pricing consideration and our new investment activity was lower in fiscal 2017 compared to previous years. Second, we took advantage of the favourable pricing environment by exiting investments where we believe the investment outlook for the asset was no longer attractive. As a result, the department had another record year in asset sales in fiscal 2017. Third, RA continued to build its franchise by strengthening its relationships with operating partners through incremental investment activity in areas with attractive return-risk attributes. Finally, to build for the future, the department continued to focus in select emerging markets and in areas that have attractive long-term fundamentals and the potential for outsized growth.

#### **REAL ESTATE - EQUITY**

Fiscal 2017 marked another year of steady growth for the Real Estate Equity portfolio, which at the end of the year totalled \$40.1 billion, an increase of 9.2% from fiscal 2016. The Equity programs represent 89.3% of the overall real estate portfolio and 54.5% of the Real Assets portfolio. A slowdown in new investment activity and valuation gains coupled with an active dispositions program resulted in moderate growth in the portfolio in fiscal 2017 compared to previous years. Specifically, the value increase in the portfolio was the result of several factors: (i) \$4.6 billion in new investment activity, (ii) valuation increases mainly due to improved market conditions and foreign exchange of \$1.6 billion, offset by \$2.8 billion in return of capital from asset sales.

At year end, the Real Estate Equity portfolio consisted of 121 investments with 60 operating partners, managed by a team of 75 professionals across six offices globally. The Real Estate Equity portfolio remains well diversified across major markets globally, with 86% in developed markets such as North America, Western Europe and Australia and 14% in the emerging markets including China, India and Brazil.

The slowdown in new investment activity and rise in asset sales is consistent with our view of the robust pricing environment for high quality real estate assets and the strong competition for widely marketed trophy commercial properties in global gateway cities. Notwithstanding these conditions, the team has been successful in securing attractive opportunities in major markets due to our strong execution capabilities locally and from our long-standing relationships with our operating partners who continue to be a valuable source of deal flow.

Major transactions undertaken by the Real Estate Equity groups in fiscal 2017 are highlighted below:

- > Acquired a 50% interest in a portfolio of prime office properties totalling 4.2 million square feet at a gross purchase price of C\$1.175 billion from Oxford Properties Group. The portfolio comprises seven office buildings located in the downtown core of Toronto and Calgary, Canada.
- > CPPIB Liberty Living Inc., a wholly owned subsidiary of CPPIB, invested additional equity into Liberty Living to support its acquisition of the Union State Portfolio of student accommodation for a total consideration of approximately £460 million. The portfolio comprises 6,484 beds within 13 student residences across the U.K., Germany and Spain. This transaction transforms Liberty Living into the second largest off-campus student housing operator in the U.K. We acquired Liberty Living in 2015.
- > Invested \$181 million to acquire an additional 11% interest in Brazilian retail owner/operator, Aliansce Shopping Centers, and participated in the follow-on equity offering in October 2016. The transaction increased our total ownership in the company to 40.2%
- > Signed an agreement to acquire a 50% interest in a diversified portfolio of top-tier office and retail properties in New Zealand from the Public Sector Pension Investment Board, for a gross value of C\$545 million. Our equity investment is approximately C\$233 million. Located primarily in Auckland and Wellington, the portfolio comprises 13 office and retail properties totalling approximately 2.9 million square feet. The acquisition provides a meaningful entry into the New Zealand commercial real estate market. The transaction is subject to customary regulatory approvals and closing conditions.
- > Divested a 45% interest in 1221 Avenue of the Americas, a 2.7-million-square-foot prime office building located in midtown Manhattan for a total net proceeds of US\$955 million.
- > Sold our 50% interest in four Canadian-based power centres to joint venture partner, RioCan REIT for a total net proceeds of \$351 million.
- > Following year end, formed a strategic relationship to invest in India's retail sector through a \$330 million commitment to a joint venture with Phoenix Mills Limited to invest in prime retail shopping centres in the largest Indian cities.

#### **REAL ESTATE - DEBT**

The Private Real Estate Debt (PRED) program, which represents 10.7% of the Real Estate portfolio and 6.5% of the Real Assets portfolio, totalled \$4.8 billion at year end, an increase of 18.2% from fiscal 2016. Borrowers successfully repaid several loans in the portfolio this year, offsetting much of the new investments made this year. That resulted in more moderate growth in the loan portfolio compared to previous years. Specifically, the value increase in the portfolio was the result of several factors: (i) \$2.1 billion in new investment activity, (ii) valuation increases mainly due to improved market conditions and foreign exchange of \$118.8 million, offset by \$1.4 billion in return of capital loan repayments.

The PRED program is managed by a team of 12 professionals located in Toronto and London.

Major transactions undertaken by the PRED groups in fiscal 2017 are highlighted below:

- > Invested US\$125 million in a senior mezzanine loan secured by the equity interest in State Street Financial Center, a 36-storey, Class A office property located in the financial district of Boston, Massachusetts.
- > Invested US\$155 million in a senior mezzanine loan secured by the equity interest in The Cosmopolitan Hotel of Las Vegas, a luxury hotel located in Las Vegas, Nevada.
- > Invested €150 million in a €180 million first mortgage bond secured by prime real estate assets in Bucharest. The assets are owned by Globalworth Real Estate Investments Ltd. This represents our first entry into the Romanian real estate debt market.
- > Committed £240 million in a five-year corporate mezzanine debt facility sponsored by Lone Star for the refinancing of their acquisition of Quintain Estates & Development and the development of 2,633 residential units over a 45-acre site at Wembley Park, London, U.K.

#### **INFRASTRUCTURE**

At year end, the Infrastructure portfolio, which includes holdings in agriculture, consisted of 20 direct investments valued at \$28.7 billion compared with \$22.2 billion a year earlier. The change in value was the result of several factors: (i) \$5.8 billion in new investment activity, (ii) valuation increases mainly due to improved market conditions and foreign exchange of \$1.2 billion, offset by \$0.5 billion in return of capital from dispositions.

The Infrastructure portfolio remains well diversified globally with 74.8% in developed markets such as North America, Western Europe and Australia and select emerging markets, 25.2% primarily in Latin America. Infrastructure investments represent 39% of the Real Assets portfolio. The Infrastructure portfolio is managed by a team of 48 professionals located across five offices globally.

New capital sources have entered the infrastructure market since the group was formed more than a decade ago, intensifying competition for infrastructure opportunities globally. We remained disciplined in our approach and despite such challenging conditions, successfully executed several major transactions:

- > Acquired Pacific National, a leading Australian rail logistics company, through participation in the A\$9.05 billion take-private of Asciano Limited. CPPIB's total investment was approximately A\$1.7 billion, and we are now the largest shareholder in Pacific National with a 33% holding.
- > Invested \$748 million to acquire a 29% interest in Arco Norte, a 224-kilometre toll road concession located in Central Mexico. The toll road is managed by the Slim Group through their infrastructure arm, IDEAL, who continues to hold a 51% interest in the investment. This transaction represents our first infrastructure investment in Mexico.
- > Acquired a 40% interest in Glencore Agriculture for US\$2.5 billion, a globally integrated agriculture business with principal activities including the procurement, storage, processing, transportation and marketing of grains and oilseeds.

#### LOOKING AHEAD

While different economic variables affect real estate and infrastructure assets, both sectors are cyclical in nature. The recent rise of long bond yields coupled with moderate asset appreciation are both factors indicating we are approaching a new phase in the current cycle. Accordingly, we expect investors will place greater emphasis on income generation with more tempered expectations for capital appreciation, which will result in a moderation of total returns going forward. We expect this uncertain investment climate will continue to be challenging for market participants. But as patient and disciplined investors, we remain focused on selectively deploying our capital in opportunities that will generate returns for the CPP Fund.

### Fiscal 2018 Objectives for CPPIB

The corporate objectives for fiscal 2018 are:

- Scaling our investment activities from all three sources of return: investment selection, diversification and strategic tilting in alignment with the long-term vision for asset classes and weights indicated by the Strategic Portfolio.
- Expanding our global investment activities, including the substantial scaling of our emerging markets programs, to build a diversified investment portfolio aligned with the long-term vision for geographic composition indicated by the Strategic Portfolio.
- 3. Continuing the multi-year implementation of our enhanced investment framework, including launching the daily process to optimize the Fund's factor exposures, leverage and liquidity.
- 4. Developing talent with a focus on increasing diversity, early career hiring and building future leaders from within our organization.
- 5. Advancing our core operational functions, including data management and financial accounting and reporting, to add efficiency, reduce costs and operational risk.
- Preparing to accept, invest and report on the Additional Canada Pension Plan (ACPP) contributions that start in January 2019.

### Enterprise Risk Management

CPPIB's activities expose us to a broad range of risks in addition to investment risks. All risks are managed within an Enterprise Risk Management (ERM) framework with the goal of ensuring that the risks we take are commensurate with and rewarded by long-term benefits.

#### **RISK ENVIRONMENT**

The environment in which we operate evolves and may impact our risk profile and development of our risk management practices. This past year, we closely monitored a number of developments with a view to assessing their potential impact on our operations over time.

- > The unpredictable global political landscape has created a high level of uncertainty for investors. The most significant nearterm impact of the U.S. election and the Brexit vote has been movements in public equity markets, which could affect short-term results. We are monitoring the longer-term implications of U.S. government policy, monetary policy and political events in Europe.
- > The push by large institutional investors into alternative assets such as real estate, private equity and infrastructure has driven valuations to record highs. This competitive environment has made it increasingly difficult to source attractive opportunities with adequate returns. We remain focused on identifying opportunities where we can leverage our comparative advantages, such as our ability to invest at scale and manage complexity, to create value over the longer term.
- > Authorities around the world have continued their focus on systemic risk and tax avoidance practices, in some cases singling out major investors and multinationals. As a large, global investor, CPPIB monitors these and other regulatory and tax developments to understand potential impacts.

- > The strong U.S. dollar and labour markets have made it more challenging to attract and retain talented and specialized investment professionals in Canada and globally. We must ensure that our recruitment, talent development and succession planning practices are effective.
- > Recent high-profile cyber security breaches in both the public and private sectors have illustrated the difficulties organizations are facing trying to keep pace with the rapidly evolving cyber threat environment. We continually enhance our practices to ensure our information is protected.
- > Climate change presents a complex array of physical and non-physical risks and opportunities across our investment activities. CPPIB is dedicating resources to ensure we are effectively considering these risks and opportunities. This is discussed more thoroughly in the Sustainable Investing section on page 34.

#### **ENHANCING OUR RISK MANAGEMENT PRACTICES**

Effective risk management combined with our comparative advantages puts us in a position to capitalize on opportunities in situations when others cannot. During fiscal 2017, we made a number of enhancements to our risk management practices:

- > Expanded our scenario analysis capabilities with the introduction of a cross-functional working group that facilitates the identification and quantification of plausible stress scenarios, including geopolitical risks;
- Created a model review working group tasked with validating strategically important risk models;
- > Added legal and compliance professionals, and enhanced our compliance management processes;
- > Improved our controls and monitoring processes to help ensure we prevent and respond effectively to cyber threats and data loss incidents; and
- > Established an internal Climate Change Working Group (CCWG) with the objective of better addressing climate change as a long-term investment consideration in the years ahead; and, incorporated climate change into our ERM Framework and semi-annual enterprise risk reports to the Board of Directors.

Our ERM framework is based on a strong governance structure, having a risk-aware culture, risk policies, defined risk appetite and risk limits; processes for identifying, assessing, mitigating, monitoring and reporting all key existing and emerging risks; and control practices with independent assurance that these practices are working properly. We define a key risk as one that could have a significant impact on our ability to execute our mandate.

#### **RISK GOVERNANCE**

Risk governance at CPPIB is the accountability of the Board, Management and their respective committees. The Board of Directors oversees our efforts to achieve a "maximum rate of return, without undue risk of loss having regard to the factors that may affect the funding of the CPP" in accordance with CPPIB's mandate. To this end, the Board is responsible for the oversight of enterprise risks, ensuring that Management has identified key risks and established appropriate strategies to manage them. Risk appetite is established for each key risk and risk category. Board committees have the following risk-related responsibilities (as further described on page 87):

- > The Investment Committee establishes CPPIB's investment policies, and approves and monitors investment activities and risk levels. It also reviews the approach to investment risk management;
- > The Audit Committee oversees financial reporting, tax, information systems and technology and associated risks, external and internal audit, and internal control policies and practices;
- > The Human Resources and Compensation Committee is responsible for overseeing risks related to our employees and employment practices. The HRCC reviews and recommends the compensation framework, reviews organizational structure, and ensures a succession planning program is in place; and
- > The Governance Committee ensures that CPPIB follows appropriate governance best practices and monitors application of the Code of Conduct and conflict of interest guidelines.

The President & CEO, by way of delegation from the Board of Directors, is accountable for all risks beyond those matters specifically reserved for the Board or Board committees. The responsibility for risk management is further distributed throughout the organization starting with the Senior Management Team (SMT).

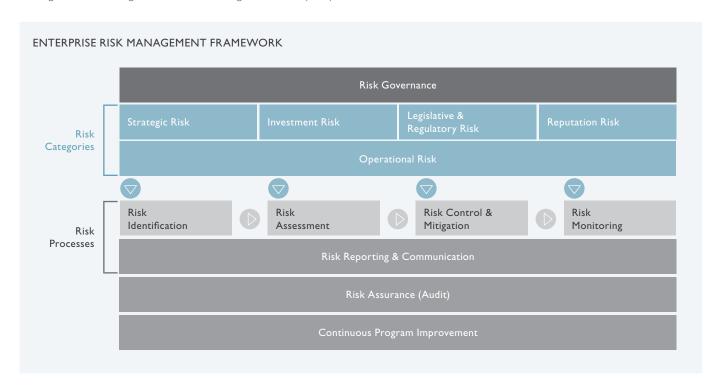
The SMT ensures that strategic and business planning, and risk management are integrated. Through the business planning process, the SMT ensures that plans align with our overall strategy and risk appetite and that adequate resources and processes are in place to identify and effectively manage key risks. The leaders of each department are responsible for appropriately managing the risks assumed within their areas of responsibility.

The Chief Operations Officer (COO) oversees the ERM framework for CPPIB.

The Chief Financial Officer (CFO) is accountable for the Investment Risk group which measures, monitors and reports investment risks independently from the investment departments. The Internal Audit department plays an important role as it provides independent assurance that controls and mitigants are properly designed and operating effectively.

Our approach to investment risk governance is described further on page 29.

The diagram below depicts CPPIB's ERM Framework.



The following sections describe each of our five principal risk categories and risk management strategies:

**Strategic Risk:** This is the risk that CPPIB will make inappropriate strategic choices or be unable to successfully execute selected strategies or adapt to changes in the external business, political or socioeconomic environment over the long term. Managing strategic risk effectively is critical to achieving our mandate.

A number of important processes control and mitigate strategic risks:

- Board discussion and review of our overall strategy is conducted at least annually;
- > Detailed business planning, that takes into account our strategy and longer-term objectives, is carried out by each department and reviewed by the President & CEO, leading to an annual business plan approved by Management and the Board;
- Strategies are prepared for each investment program to ensure alignment with CPPIB's overall strategy and comparative advantages;
- > Quarterly reviews of the portfolio and associated investment risks are completed, in the context of capital market and emerging economic conditions; and
- > Quarterly reporting and discussion of our progress, challenges and risks related to achieving the approved business plan are conducted by both Management and the Board.

Investment Risk: This is the risk of loss due to participation in investment markets. It includes market risk (including currency, interest rate, equity price, commodity price and credit spread risk), credit risk (including counterparty risk) and liquidity risk, in both internally and externally managed portfolios. It is managed and monitored in accordance with the Risk Policy approved annually by the Board of Directors.

We have risk committees to oversee our investment risk exposures. The Investment Committee of the Board receives regular reporting on our assets, investment income, investment returns, risk measures and stress testing results. Management's Investment Planning Committee reviews the risks in the portfolio at least monthly through commentaries prepared by TPM and the Investment Risk group.

Additional information related to our investment risk exposures and risk measurement and management processes is included in note 5 to our Financial Statements on page 118.

Legislative and Regulatory Risk: This is the risk of loss due to actual or proposed changes to and/or non-compliance with applicable laws, regulations, rules and mandatory industry practices, including those defined in the *CPPIB Act*. Failure to comply could result in financial penalties or portfolio losses and damage to our reputation.

Our compliance program is designed to promote adherence to regulatory obligations worldwide, and to help ensure awareness of the laws and regulations that affect us and the risks associated with failing to comply. We monitor emerging legal and regulatory issues as well as proposed regulatory changes, and take a constructive role in these developments when appropriate. Input is regularly sought from external legal counsel to keep us informed on emerging issues.

Our Tax group plays a key role to support decision-making, overseeing tax risk management and evaluating overall tax practices. We review key tax risk issues both as part of transaction due diligence and at the total Fund level.

**Operational Risk:** This is the risk of loss due to actions of people, or inadequate or failed internal processes or systems as a result of either internal or external factors. Operational risk encompasses a broad range of risks, including those associated with:

- > Human resource management and employment practices;
- > Employee misconduct including breaches of the Code of Conduct, fraud and unauthorized trading;
- > Ability to recover from business interruptions and disasters;
- > Transaction processing, operations and project execution;
- > Data, models, user-developed applications and information security; and
- > Accuracy of financial reporting.

Risk can take the form of direct financial losses, indirect financial losses appearing as operating inefficiencies, regulatory sanctions or penalties, or damage to our reputation. Operational risk can also directly impact our ability to manage other key risks.

Each member of the Senior Management Team bears primary accountability for managing operational risks within their department. We manage operational risk through internal controls that are subject to internal audit reviews. We also conduct an annual review as part of the CEO/CFO certification of internal control over financial reporting. The Finance, Analytics and Risk department, and the Operations and Technology department maintain formal protocols for implementing new investment products and technologies, managing data, models and user-developed applications, ensuring information security, and establishing continuity plans for potential business interruptions. Also, we purchase property and casualty insurance, as well as director and officer liability coverage.

Reputation Risk: This is the risk of loss of credibility due to internal or external factors and is often related to, or results from, other categories of risk. This risk can arise from our internal business practices or those of our business partners or the companies in which we are investors. Business partners include third parties hired to perform some of our administrative functions as well as investment organizations with whom we have a contractual arrangement. A loss of reputation could impact our position as a partner, investor and employer of choice and impede our ability to execute our strategy.

The responsibility for managing reputation risk extends to every employee and Director. This is clearly detailed and communicated through our Code of Conduct and our Guiding Principles of Integrity, Partnership and High Performance, which apply to all employees and all business activities. The Code of Conduct, as an example, requires all employees and Directors to disclose any personal trading or business interests that might lead to a real, potential or perceived conflict of interest.

The Senior Managing Director & Global Head of Public Affairs and Communications oversees our Issues Management Framework, which has several dimensions related to reputation management. We require that reputation risk assessments be part of the investment decision-making process through the Reputation Risk Framework protocol, and business strategy development and execution. Our Issues Management Executive Committee addresses significant issues as they arise. There are protocols for escalation and management of reputation risks and issues relating to our existing portfolio companies. Additionally, we continue to proactively build our reputation and brand with key stakeholders globally to support our business objectives and mitigate risk.

### Organizational Accountability

#### CEO/CFO CERTIFICATION

During the year, we completed an evaluation of internal control over financial reporting and disclosure controls and procedures, using the framework and criteria set out in the Internal Control – Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). CPPIB is not required by law or regulation to perform this annual evaluation. We do so voluntarily as part of our commitment to strong corporate governance and accountability.

The CEO and CFO are responsible for establishing and maintaining internal control over financial reporting to provide reasonable assurance that it is reliable and conforms with International Financial Reporting Standards (IFRS). They are also responsible for the design of disclosure controls and procedures that provide reasonable assurance that all material information is gathered and reported to Management on a timely basis.

No changes were made in our internal control over financial reporting, disclosure controls or procedures that have affected, or are reasonably likely to materially affect, our reporting.

Based on the results of Management's evaluation, the CEO and CFO have concluded that internal control over financial reporting and the disclosure controls and procedures is properly designed and operated effectively throughout the year.

#### **ACCOUNTING POLICIES AND CRITICAL ESTIMATES**

Our significant accounting policies are summarized in notes I and 2 to the annual Consolidated Financial Statements and are important in understanding and interpreting our reported financial results and financial condition. Certain of these accounting policies require Management to make assumptions and estimates that affect the reported amounts of assets, liabilities, income and expenses. We have established procedures to ensure accounting policies are applied consistently and processes for changing methodologies are well-controlled.

Management's most critical accounting estimates are with regard to the determination of fair value for investments and investment liabilities. Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. Fair value is a market-based measurement and therefore incorporates those factors that market participants would consider when pricing an investment or investment liability.

Quoted market prices are used to measure the fair value for investments traded in an active market, such as public equities and marketable bonds.

Where the market for an investment is not active, such as for private equity, infrastructure, private real estate, private debt and over-the-counter derivatives, fair value is determined by valuation techniques that make maximum use of inputs observed from markets. These techniques include the use of recent arm's-length transactions, the current fair value of another investment that is substantially the same, discounted cash-flow analysis, pricing models and other accepted industry valuation methods. Management engages independent appraisers to assist in the review or preparation of investment valuations. Regardless of the technique used, judgment is required to estimate fair value for investments, which are not traded on an active market. Our valuation methodologies for investments and investment liabilities are summarized in note 2 to the annual Consolidated Financial Statements.

### Report of the Human Resources and Compensation Committee

As the Chair of the Human Resources and Compensation Committee (HRCC), I am pleased to share with you our approach to assessing performance and determining CPPIB employee compensation.

The underlying principles of CPPIB's compensation framework are to deliver the long-term business strategy by focusing on:

- > Attracting and retaining top investment and management expertise;
- > Paying for performance; and
- > Aligning the interests of employees with contributors and beneficiaries over the very long term.

#### FISCAL 2017 PERFORMANCE HIGHLIGHTS

A key underpinning of our compensation programs is the performance of the total Fund and our investment departments. Over this period, the Fund generated a sizeable gain. The one-year total Fund net return was 11.8%, as was the five-year annualized net return. Fiscal 2017 was a challenging year in terms of delivering dollar value-add (DVA) above the Reference Portfolio's return. The total Fund net DVA in fiscal 2017 was negative \$8.2 billion, while the cumulative five-year net DVA amounted to \$5.6 billion.

#### **COMPENSATION PROGRAM**

The CPPIB multi-year business plan aims to realign our investment approach to place a significantly greater emphasis on delivering total return, or in other words maximizing the long-term value of the CPP Fund. We believe that reflecting this enhanced focus on total Fund performance in our compensation program is a crucial foundation to support greater alignment between CPPIB employees and the interests of 20 million CPP contributors and beneficiaries.

The new compensation program that we first implemented in fiscal 2016 introduced this enhanced focus on total Fund performance, balancing it with a continued focus on dollar value-add, while measuring both along a longer-performance horizon to better align with our investment mandate (over a five-year rolling period, instead of four). Importantly, our new program continues to measure the quantity and quality of outcomes, including how senior Management and employees deliver on long-term strategic business objectives.

Fiscal 2017 was the second full year under the new compensation program, and we are confident that it continues to support our business strategy, to enforce the principle of pay for performance and to align employees with the long-term interests of beneficiaries. For instance, this year as the Reference Portfolio outperformed the Investment Portfolio on an annual basis, we saw downward pressure on the five-year multiplier we use to determine compensation. As a result, our Named Executive Officers' (NEOs) compensation remained relatively flat this year. All NEOs received smaller in-year and deferred awards this year compared to last, with the exception of the SMD & Head of International, Head of Europe (Alain Carrier)

and the SMD & Chief Investment Strategist (Ed Cass). Mr. Cass' in-year award and deferred awards increased slightly due to stronger Group, Department and Individual performance than the previous year. While Mr. Carrier's in-year award decreased, his deferred award increased due to a higher incentive target and required deferral portion upon his promotion to Senior Managing Director.

Fiscal 2019 will be the first year completely under the new compensation program, when the remaining Long-Term Incentive Plan (LTIP) grants awarded under the old compensation program will have been fully paid out. We expect that total NEO compensation will decrease at that point.

Our compensation program provides competitive pay levels relative to our defined talent market in all regions that we operate, and provides a clear, transparent framework to CPPIB employees and to our stakeholders.

In addition to the Board approving all compensation benchmarks and multipliers, the Committee retains full discretion to reward performance for the Senior Management Team within a range of zero to two times target incentive levels, as well as any salary adjustments or other compensation arrangements. This full discretion allows the Committee to not just assess and reward results, but also the manner in which they were achieved.

#### **CEO TRANSITION**

On June 13, 2016, the Board appointed a new President & CEO, Mark Machin, who previously held the role of Senior Managing Director & Head of International, and President, CPPIB Asia Inc.

Upon his appointment, the Board approved a target annual compensation package for Mr. Machin which we believe is both fair and responsible. Mr. Machin's annual pay package as President & CEO was benchmarked to be consistent with our primary Canadian market references. Upon his promotion to President & CEO, Mr. Machin received two non-recurring long-term awards. Excluding these non-recurring awards, Mr. Machin's overall annual compensation decreased when he took on the CEO role in Toronto. Please refer to the CEO Compensation section on page 78 for further details.

#### FISCAL 2017 CEO PAY DECISIONS

Over the past five years, CPPIB's total Fund return of 11.8% and dollar value-add of \$5.6 billion has been strong and has resulted in a total Fund multiplier of 1.53. The Board assessed Mr. Machin against his corporate goals and deemed that all these were substantially achieved, resulting in a multiplier of I.40. Against his individual objectives, the Board determined a multiplier of 1.50 for fiscal 2017. The weighted average of these three factors resulted in an overall incentive multiplier for Mr. Machin of 1.48.

Ultimately, the Board awarded Mr. Machin a total direct compensation (salary + in-year award + deferred award) of \$4,507,380 for fiscal 2017, in addition to non-recurring awards, as well as pension and benefits. Further details on CEO compensation are included in the following Compensation Discussion and Analysis.

#### OTHER ACTIVITIES OF THE HRCC

The HRCC adopted specific objectives designed to focus on strategic priorities in fiscal 2017. In conjunction with the Chairperson, the HRCC ensured that a comprehensive plan was developed to ensure the successful transition and onboarding of the new CEO, Mark Machin. To assist with this effort, Mark Wiseman, the former CEO, stayed on as an advisor to the Board until September 5, 2016. The HRCC continues to drive the succession planning for all executive positions in the organization. Please see below for specific HRCC activities undertaken in fiscal 2017.

In conclusion, the HRCC is satisfied that the compensation paid for fiscal 2017 is appropriate and that our decisions with respect to the department/group and individual performance factors of compensation reflect our assessment of the Senior Management Team's performance relative to the pre-established objectives for fiscal 2017, and are appropriately aligned with the interests of contributors and beneficiaries.

Laver Shery

Chair, Human Resources and Compensation Committee

## The Role and Structure of the Committee

The Human Resources and Compensation Committee (HRCC) helps the Board of Directors with human resources matters, including talent management and compensation.

The HRCC is composed entirely of Directors who are knowledgeable about human resources and executive compensation issues. All HRCC members also serve on the Investment Committee. They have a strong appreciation of the link between compensation and risk management.

The committee members for fiscal year 2017 were:

Ian Bourne Tahira Hassan Nancy Hopkins Douglas W. Mahaffy Karen Sheriff, Chair Kathleen Taylor D. Murray Wallace

The HRCC held 12 meetings during fiscal 2017. The Chairperson of the Board of Directors, although not an HRCC member, attended all meetings. The CEO, the COO and the Senior Managing Director & Chief Talent Officer also attended portions of the meetings at the HRCC's request. Annual activities for the HRCC (including those performed in fiscal 2017) are:

Evaluation of the CEO:

- > Reviewed and recommended for Board approval the CEO's performance objectives and performance evaluation process.
- > Reviewed significant outside commitments of the CEO.

Compensation of Officer and non-Officer employees:

> Reviewed, approved and recommended for Board approval, salary increases and incentive compensation payouts for officers and employees.

- > Reviewed executive compensation trends as provided by the HRCC's external compensation advisor.
- > Reviewed Officers' compensation. This included requesting and reviewing a report from the HRCC's external compensation advisor on the compensation of officers relative to other large Canadian pension funds and investment management companies.
- > Oversaw the disclosure of Directors' and Officers' compensation and the compensation framework in the Annual Report.
- > Reviewed and recommended for Board approval the benchmark and incentive compensation curve for the CPP Fund.

Talent Management and Development:

> Reviewed succession planning for Officers and talent management programs.

Employee pension and benefits plans:

- > Received the Annual Report of the Pension Committee and reviewed and approved pension plan documents.
- > Reviewed non-material changes to employee benefit plans and Human Resources policies.

Committee Terms of Reference review:

> Reviewed and recommended for Board approval HRCC Terms of Reference and reviewed performance against Terms of Reference.

The HRCC uses the services of Hugessen Consulting Inc. to provide independent advice, information and guidance on human resources and executive compensation issues. Hugessen cannot provide any services to Management without the committee's prior approval. Hugessen received \$270,000 for its services to the HRCC in fiscal 2017 and \$220,000 in fiscal 2016. It provided no additional services to Management.

You can find out more about the HRCC's mandate in the Terms of Reference section posted on the CPPIB website.

# Compensation Discussion and Analysis

This Compensation Discussion and Analysis summarizes the foundational principles of our compensation framework. It reviews the elements of our compensation program and provides the details on the performance results and remuneration paid to our Named Executive Officers (NEOs) for the fiscal year ended March 31, 2017 including:

- > President & Chief Executive Officer (CEO) Mark Machin (appointed June 13, 2016)
- > Former President & Chief Executive Officer Mark Wiseman (stepped down on June 13, 2016)
- > SMD & Chief Financial Officer (CFO) Benita Warmbold
- > SMD & Head of International, Head of Europe Alain Carrier
- > SMD & Chief Investment Strategist Ed Cass
- > SMD & Global Head of Public Market Investments Eric Wetlaufer
- > SMD & Global Head of Real Assets Graeme Eadie

#### PRINCIPLES OF OUR COMPENSATION FRAMEWORK

Our compensation framework continues to rest on three key principles, including:

- > Attracting and retaining top investment and management expertise;
- > Paying for performance; and
- > Aligning the interests of employees with contributors and beneficiaries over the very long term.

Our compensation program is a key factor in attracting the talent and investment experience we need to manage a global active portfolio of \$316.7 billion. In our search for the best employees, we compete with the largest investment managers and financial institutions in Canada and around the world. As the Fund is one of the largest of its type globally, we require people with significant experience in investment management, investment research, portfolio design, risk management, and investment operations. A competitive compensation package is essential to attract and retain this talent to effectively execute CPPIB's mandate to maximize the rate of return without undue risk of loss.

#### **RISK MANAGEMENT**

Our compensation program reflects our public mandate and responsibility to CPP's contributors and beneficiaries. We have aligned incentives with our long-term investment strategy and mandate, while considering our target return and risk appetite.

Our compensation program includes a number of key risk mitigating features:

- > Significant Pay at Risk a significant portion of compensation for Senior Management and employees is variable and deferred; the deferred portion fluctuates with the Fund's performance over time;
- > Long-term Horizon Measurement CPPIB tracks performance over multiple years, aligned with the long-term nature of our investment mandate:
- > Maximum Payouts there is a cap on the incentive multipliers;
- > Robust Benchmark Investment Return Targets benchmarks used to calculate dollar value-added and returns reflect an appropriate balance of risk and return aligned with the Boardapproved investment strategy;
- > Board Approved Risk Limits the target rates of return consider the Board-approved overall and specific risk limits; and
- > Claw backs the Board can claw back or adjust all forms of incentive compensation.

The HRCC reviews our compensation programs annually. In our 2017 review it confirmed that the compensation framework meets or exceeds the Principles for Sound Compensation Practices established by the Financial Stability Board and endorsed by the G20 nations.

#### Financial Stability Board Principles CPPIB compensation framework Five-year results discourage short-term decisions Discourage short-term Total amount of risk is governed by the Board of Directors risk-taking Where appropriate, benchmarks adjust for the degree of risk taken The HRCC and the Board of Directors make all decisions Increased oversight powers of about the compensation framework compensation committees

#### OUR COMPENSATION FRAMEWORK

The design of our incentive program takes into account the environment in which we operate, our mission and the strategy we have chosen to execute. We are a growing organization, and one that is meant to endure for a very long time. As a result, a large element of Management's current focus is on:

- > Attracting talent;
- > Growing the organization globally;
- > Establishing investment programs and processes that can be scaled;
- > Delivering strong performance;
- > Improving the efficiency of technology, operations and risk management; and
- > Establishing a strong culture with uncompromising standards of integrity.

The program considers these important priorities and reflects them in the performance measures used to determine incentive payouts. It also considers the public responsibility involved in managing the Fund for the benefit of 20 million contributors and beneficiaries by ensuring risk is considered appropriately. Further, we believe it is important not only what gets accomplished, but also how it is accomplished. Our compensation program is grounded in our Guiding Principles and takes into account the best practices in incentive design. We adhered to the following best practices in designing our compensation structure:

Our compensation structure is based on the following design principles:

- > Focuses on Total Fund Performance each employee has 30% of their total incentive weighted on total Fund performance. The measurement of total Fund performance includes absolute total Fund return as well as dollar value-added. This emphasis on the total Fund allows for a closer tie between compensation and the interests of our beneficiaries and contributors.
- > Aligns Long Performance Horizon with our Investment Mandate – the five-year rolling time period over which we measure total Fund performance reflects our long-term perspective. Department performance is also measured over a multi-year time frame. This long-term performance horizon improves measurement accuracy and reduces volatility.
- > Measures Both Quantitative and Qualitative Outcomes as our investment strategy and execution evolve, we consider both quantity and quality when measuring investment performance and other objectives.
- > Aligns Pay Mix to Market Practice the pay mix of fixed and variable compensation, as well as short-term and long-term compensation reflects market trends.
- > Creates a Consistent Framework for all Employees all employees have the same weight on total Fund performance, department and group performance, and individual performance. This creates a consistent platform for rewarding all employees.

Aligned with our Investment Objectives	<ul> <li>Maximize return to the total Fund within agreed risk parameters</li> <li>Supports CPPIB's Guiding Principles</li> </ul>						
Market Competitive	> Enables CPPIB to attract and retain the right people						
Right Time Horizon	> Strong alignment to our long-term investment horizon for performance measurement and for payouts						
Simple	> Clear and simple framework transparent to key stakeholders and prospective emplo > Yields increased stability and consistency of performance measurements						
Enables Application of Informed Judgment	> Ability to recognize the distinction of each asset class, strategic and operational objectives, and market conditions						
Differentiation Based on Individual Performance	> Ability to distinctly differentiate based on individual performance						

In addition to researching best practices in incentive design, CPPIB conducts a competitive benchmarking of jobs across the organization. This ensures compensation levels are competitive and aligned with the organization's market for talent. We operate within the global investment management industry, and compete globally to attract and retain employees in Toronto and our offices in Hong Kong, London, Luxembourg, Mumbai, New York, São Paulo and Sydney. Accordingly, we review competitive pay information for Canadian pension funds and broader investment management organizations as well as those in other major markets in which we operate (e.g., United States, United Kingdom and Hong Kong).

The HRCC also reviews competitive pay levels for each position on the Senior Management Team, including the Named Executive Officers (NEOs) relative to a significant market sample and data from proprietary consultant surveys. Specifically for the Senior Management Team and NEOs, we benchmark compensation against the following organizations:

- > Canadian Pension Funds: Caisse de dépôt et placement du Québec (CDPQ), Ontario Teachers' Pension Plan (OTPP), bcIMC, AIMCo, OMERS, PSPIB.
- > Canadian publicly traded investment asset managers: IGM Financial, CI Financial, AGF Management, Fiera Sceptre, Guardian Capital, Sprott Inc., Gluskin Sheff & Associates.
- > McLagan "Competitive Composite": This is composed of I) the Top Canadian Pension Funds and 2) the broad financial services market that include insurance companies and banks in Canada and the U.S. (U.S. benchmarking for investment roles only).

#### **COMPENSATION ELEMENTS**

#### **BASE SALARY**

Employees receive a base salary for fulfilling their core job responsibilities. Salaries reflect skill level, ability and performance. We use annual compensation surveys from compensation consulting firms to ensure that we remain competitive within our talent market.

We review salaries annually at the end of each fiscal year. Any changes to Senior Management Team compensation, including the Named Executive Officers' (NEOs') salaries, require Board approval.

#### INCENTIVE COMPENSATION PLAN

At the end of each fiscal year, employees are eligible to receive an annual award according to the following formula:



We set incentive targets by the job level to align with market practices. A portion of the Annual Award pays out in cash following the end of the fiscal year (In-Year Award) and, for senior employees, a portion is deferred (Deferred Award).

At the end of the fiscal year, the Annual Award is adjusted by a Performance Multiplier. The Performance Multiplier is determined based on a performance assessment of three factors:

- I. Total Fund performance;
- 2. Department and Group performance; and
- 3. Individual performance.

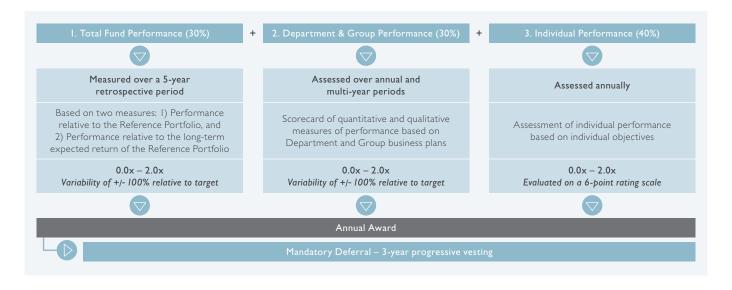
Each performance factor contributes a fixed percentage or weight to the total incentive pay. These weightings are consistent across the organization.

The Total Incentive may vary from zero to a maximum of 2 times the target amount for each performance factor. The award depends on performance relative to pre-determined objectives.

This structure applies to all employees across the organization regardless of department, group, seniority or geographic location.

To align with the long-term focus of the CPP Fund, senior employees must defer a portion of their Total Incentive. The Deferred Award vests and pays out over three years following the fiscal year for which the award is received.

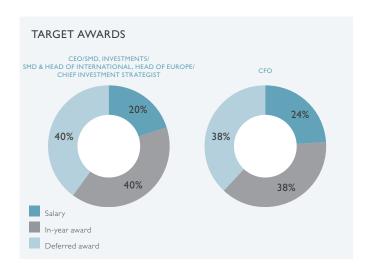
The following chart illustrates the current incentive plan:

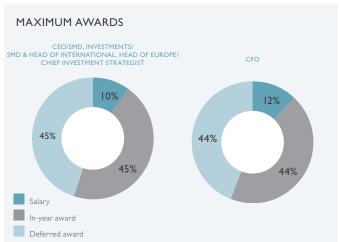


Below is more information on our three performance factors:

- I. *Total Fund performance* This performance factor includes equally weighted measures of both dollar value-add and total Fund returns, each measured over a five-year period.
- 2. Department and group performance Departments and Groups play an important role in contributing to and maximizing performance of the total Fund. We determine performance objectives at the start of each year, taking both quality and quantity into account and aligning with the strategic objectives of the organization. At year-end,
- we measure performance against the objectives defined for each Department and Group, including value-add. We may measure performance over the year or over several years, depending on the objective and performance measurement.
- 3. Individual performance We assess this performance factor annually for each employee, based on specific objectives identified at the beginning of the year. Assessment of the individual is also based on performance relative to the expectations of the job and demonstration of our Guiding Principles of Integrity, Partnership and High Performance.

Following an assessment of performance and approval by the HRCC and Board, employees receive the in-year cash payout. All deferred awards are treated as if they were invested in the Fund and fluctuate with the total Fund returns over time. Employees forfeit the incentive award and any unvested deferred awards if they resign during the fiscal year.





#### PAY MIX

The mix of in-year cash and deferred compensation varies by role and level, with higher deferral targets for more senior professionals. The charts above illustrate the mix of salary, in-year cash, and deferred incentive for fiscal 2017 for the Named Executive Officers (NEOs):

#### **VOLUNTARY DEFERRAL INCENTIVE PLAN (VDIP)**

Where allowed under local tax law, employees may defer some or their entire in-year award in a given year. The deferred portion is treated as if it were invested. The employee can choose to make this nominal investment either entirely in the CPP Fund, or in both the CPP Fund and up to a maximum of 50% in the CPP Fund's Private Investments portfolio. The deferred amounts thus fluctuate in value over the three-year deferral period. The VDIP provides another way to align employee interests with Fund performance.

#### LONG-TERM INCENTIVE PLAN (LTIP)

We discontinued the Long-Term Incentive Plan as part of the incentive redesign in fiscal 2015. Existing unvested LTIP awards were converted using a 2x single-year multiplier for fiscal 2016 to fiscal 2018, aligned with historical performance and payout levels. The cliff-vesting schedule continues to apply to these awards, as per the terms of the plan. We paid residual payments in fiscal 2016, and eligible employees will continue to receive payments at the end of fiscal 2017 and fiscal 2018. The unvested balances will continue to earn the net total Fund rate of return during the vesting period.

#### SUPPLEMENTAL RESTRICTED FUND UNITS (SRFU)

SRFUs are a notional investment whose value fluctuates with CPP total Fund performance. SRFUs with multi-year vesting schedules can assist in attracting new employees as they help ease in the compensation of new hires during their transition to CPPIB, such as replacing forfeited compensation from their previous employer. SRFUs can also be used as part of a transition package for current employees.

#### CLAWBACK AND FORFEITURE PROVISION

The Board of Directors has the authority to interpret, change and discontinue the compensation plans at its discretion. In addition, the Board may reduce incentive awards or require employees to forfeit them if:

- > Financial results are restated and the Board considers the award is therefore excessive. The Board can also require employees to forfeit unvested incentive compensation awards. This provision applies to those at the Managing Director level and above.
- > The incentive award was granted in error.
- > An employee is guilty of misconduct.

#### **PENSION**

CPPIB provides its employees and executives the opportunity to participate in defined contribution retirement plans. These have relatively lower and more predictable costs than the more generous defined benefit plans offered by other organizations in the large pension fund and broader financial services industry.

All Canada-based employees are eligible to participate in our registered and supplementary defined contribution pension plans. Eligible earnings for both pension plans consist of:

- > Base salary, plus
- > The portion of the incentive paid in a given year (to a maximum of 50% of base salary).

Employees contribute 4.5% of annual eligible earnings, and CPPIB contributes 4.5% to the maximum allowed under the *Income Tax* Act (Canada). For the supplementary pension plan, employees earn contribution credits equal to 9% of eligible earnings over the maximum for the registered pension plan. The supplementary plan is an unfunded plan. It grows at the same rate as the investment choices available under the registered plan.

Employees based outside Canada are eligible to participate in local pension plans that vary based on local regulations and market practices.

#### BENEFITS AND OTHER COMPENSATION

Our benefits programs are comparable to those provided by similar organizations in our industry. They include life insurance, disability benefits, health and dental benefits, time-off policies, a fitness reimbursement and an Employee-Family Assistance Program. Perquisites are limited to paid parking for the Senior Management Team members.

# FISCAL 2017 RESULTS: ANNUAL OBJECTIVES, PERFORMANCE OUTCOMES AND COMPENSATION DECISIONS

This section describes the annual financial and non-financial performance measures and results we used to make compensation decisions for the Named Executive Officers (NEOs) for fiscal 2017.

#### ANNUAL NON-FINANCIAL OBJECTIVES

Management establishes the non-financial organizational objectives in the CPPIB business plan each fiscal year. The Board of Directors approves these goals. You will find the non-financial organizational objectives of fiscal 2017 in Table 1 below.

Management then aligns annual individual objectives for officers and employees to these organizational objectives. The Board reviews progress against organizational objectives quarterly and at year end. This ensures a pay-for-performance approach to evaluation. Based on the Board's assessment, Management achieved the organizational objectives for fiscal 2017.

#### TABLE I: FISCAL 2017 NON-FINANCIAL OBJECTIVES

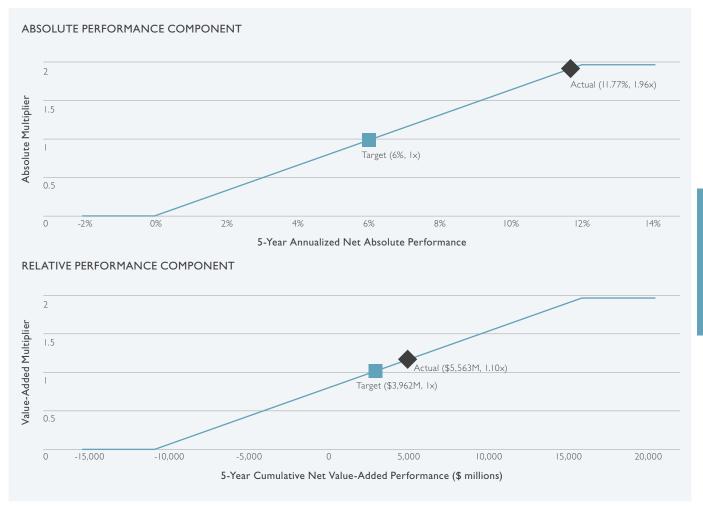
- 1. Continuing to implement our enhanced investment framework.
- 2. Developing talent with a focus on increasing diversity, early career hiring and building future leaders from within our organization.
- 3. Expanding our global investment activities to build a diversified investment portfolio aligned with the long-term vision for geographic composition indicated by the Strategic Portfolio.
- 4. Completing the straight-through trade life cycle process for publicly traded securities, which will be scalable to support CPPIB's future asset levels and investing activities.
- 5. Scaling our investment programs aligned with the long-term vision for asset class exposure indicated by the Strategic Portfolio.

#### TOTAL FUND PERFORMANCE

We measure total Fund performance over a five-year period using two equally weighted criteria:

- 1. Absolute performance Absolute total return of the Fund; and
- 2. Relative performance Value-add relative return of the Fund compared to the Reference Portfolio.

For compensation payout purposes, the performance realized on each of these two measures, over a rolling five-year performance period, maps to a multiplier. On the absolute performance, a target return of 6% will result in a target multiplier of Ix. On the relative performance, a five-year cumulative target dollar value-add (DVA) of \$3.96 billion must be reached to achieve a relative performance multiplier of Ix. The Board reviews DVA targets annually. The graphs below map the fiscal 2017 target and actual Fund performance.



In Table 2 below, total Fund performance is measured over the five fiscal years beginning April 1, 2013 and ending March 31, 2017. The absolute and relative performance of the Fund in fiscal 2017 resulted in an equally weighted total Fund multiplier of 1.53.

TABLE 2: CPP FUND PERFORMANCE, FISCAL 2013 TO 2017 AND CUMULATIVE RESULTS

					Absolute	Performance		Relative F	Performance
	CPP	CPP	CPP		Reference				
	Fund Gross	Fund Net	Fund Net	Total Fund	Portfolio	CPP Gross	CPP Net	Total Fund	Total
	Return	Return	Return	absolute	Return	Value-add	Value-add	Value-added	Fund
Fiscal year	(\$ billion)	(\$ billion)	%	multiplier	(\$ billion)	(\$ billion)	(\$ billion)	multiplier	multiplier
2013	16.7	16.2	9.81%		16.5	0.2	(0.3)		
2014	30.7	30.1	16.12%		30.2	0.5	(0.1)		
2015	41.4	40.6	18.31%		37.8	3.6	2.8		
2016	10.0	9.1	3.37%		(2.1)	12.1	11.2		
2017	34.4	33.4	11.84%		41.6	(7.2)	(8.2)		
Cumulative \$ /									
Annualized % – 5 year	133.2	129.5	11.77%	1.96	124.0	9.2	5.6	1.10	1.53
Cumulative \$ /									
Annualized % – 10 yea	ar 151.0	146.0	6.74%		139.3	11.7	6.7		

#### FORMER LONG-TERM INCENTIVE PLAN (LTIP) PAYOUTS

For the purpose of calculating LTIP payout, the total Fund's cumulative four-year net rate of return was 59.8%, which is an average annualized return of 12.3%, since the beginning of fiscal 2014.

#### DEPARTMENT PERFORMANCE

Each department has financial and non-financial objectives. Performance against these objectives is evaluated by the CEO and approved by the Board. We have summarized performance for fiscal 2017 for each investment department in Table 3 below.

TABLE 3: FISCAL 2017 INVESTMENT DEPARTMENT PERFORMANCE

	Fiscal 2017 performance
Public Market Investments	Exceeded target
Real Assets	Exceeded target
Private Investments	Exceeded target
Investment Partnerships	Exceeded target
Total Portfolio Management	Exceeded target
International	Exceeded target

You can find a more detailed description of the total Fund and investment department performance in the Management's Discussion and Analysis section of the Annual Report.

#### **COMPENSATION DISCLOSURE**

We align with the best practices for compensation disclosure for a public pension fund. We disclose compensation information for key management personnel as a group. We also disclose individual compensation figures for the CEO, the CFO, and the next four highest-paid Senior Management Team members.

#### COMPENSATION OF KEY MANAGEMENT PERSONNEL

We define key management personnel as the Senior Management Team and the Board of Directors. For more information on Director compensation, please refer to the Governance Practices section of the Annual Report. The total compensation expense for key management personnel for fiscal 2017 is \$37.5 million, up 20% from \$31.1 million for fiscal 2016. This increase was principally a result of residual payments for CPPIB's discontinued Long-Term Incentive Plan, which will be fully paid out at the end of fiscal 2018.

See note 9 of the Financial Statements for more information.

#### COMPENSATION OF THE CEO

The CEO participates in the same incentive compensation plan as all employees at CPPIB. At the start of each fiscal year, the Board and the CEO agree on organizational and individual objectives for the CEO. At year end, the HRCC evaluates the CEO's performance against those objectives and presents its evaluation to the Board for review and approval. As well, each Director completes an annual evaluation of the CEO's performance with respect to his key areas of responsibility. These evaluations are summarized and presented to the Board of Directors. These sources of evaluation are then used to determine the organizational performance multiplier and individual performance multiplier of the CEO's incentive award for the fiscal year. They are also used to set his base salary for the upcoming fiscal year.

Mr. Machin's personal accomplishments for fiscal 2017 included:

- > Provide strategic direction for all CPPIB investment activities, ensure all investments are consistent with CPPIB's multi-year strategy and the advancement towards the Strategic Portfolio.
- > Lead strategy review for each investment group.
- > Ensure the development and continuity of Leadership and Talent.
- > Continue to develop CPPIB's unique culture.

The following key goals were achieved:

- > Executed a smooth transition with all stakeholders.
- > Delivered Investment Framework 2020, an enterprise-wide change program that aligns with the strategy of shifting to an increased focus on total return and scaling our top-down investing activities.
- > Expanded our global presence to include a new office in Sydney.
- > Built our core services capacity and capabilities particularly in respect of automation and IT capabilities.
- > Led a significant redesign of the investment governance process to provide more effective functioning and to create greater opportunities for collaboration and understanding across investment departments.
- > Made significant progress on leadership development with the launch of INSPIRE for Managing Directors.
- > Recruitment of female talent was increased to 48% across the firm with significant advances in the investment departments.

> Introduced a program to improve the representation of women on the Boards of CPPIB investee companies.

The Board of Directors awarded Mr. Machin a total incentive award of \$3,855,772 for fiscal 2017. The compensation awarded to Mr. Machin is consistent with the principle of pay for performance and appropriately recognizes his many accomplishments in his first year as CEO. His leadership of the organization, its critical priorities and Fund management strongly position CPPIB to continue working in the best interests of CPP's contributors and beneficiaries. The table below provides the breakdown of the compensation he earned while he was the SMD, Head of International in Hong Kong and later on upon his promotion to President & CEO.

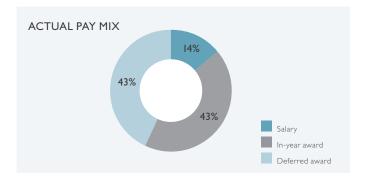
As part of his transition to Toronto from Hong Kong, Mr. Machin's compensation was benchmarked to be consistent with prevailing market rates in Toronto and he received a partial payment on his outstanding LTIP grants based on the value that was earned while he was employed in Hong Kong. Upon his promotion to President & CEO, Mr. Machin received two non-recurring awards: an SRFU grant of C\$625,000 and Fund Return Units (FRUs) with a grant date value of C\$500,000.

- > The SRFU grant vests in equal parts over three years. The value of the payout fluctuates with the net Fund return.
- > The FRU grant pays out in an amount equal to the Total Fund Net Rate of Return on a notional investment in the Fund. It has a fixed settlement date at the end of seven years.

The table below shows a summary of the CEO Total Direct Compensation for fiscal 2017.

		SMD, Head					
	of	International	Pres	ident & CEO			
	Α	pril I, 2016 –	Jur	ne 13, 2016 –		Fiscal 2018	
	J	une 12, 2016	Ma	March 31, 2017		al 2017 Total	Target
	Target	Actual	Target	Actual	Target	Actual	
	Prorated	Prorated	Prorated	Prorated	Annual	Annual	Target
Base salary (A)	171,608	171,608	480,000	480,000	651,608	651,608	625,000
Total Fund	205,929	315,298	576,000	881,914	781,929	1,197,212	750,000
Department/Group	205,929	288,301	576,000	806,400	781,929	1,094,701	750,000
Individual	274,572	411,859	768,000	1,152,000	1,042,572	1,563,859	1,000,000
Total Incentive Award (B)	686, <del>4</del> 31	1,015,458	1,920,000	2,840,314	2,606,430	3,855,772	2,500,000
In-year award	343,216	507,729	960,000	1,420,157	1,303,220	1,927,890	1,250,000
Deferred award	343,216	507,729	960,000	1,420,157	1,303,220	1,927,890	1,250,000
Total direct compensation (A) + (B)	858,039	1,187,066	2,400,000	3,320,314	3,258,040	4,507,380	3,125,000
	CEO	Promotion A	wards				
		SRFU			625		
		FRU			500		
	F2017 Tot	al Direct Con	npensation		4,383,040	5,632,380	

CMD Hand



The CEO's residual LTIP payments will be paid out as described on page 81. Please refer to Table 5: Summary Total Compensation.

Mr. Wiseman stepped down as President & CEO on June 13, 2016. He remained as a Senior Advisor to the CPPIB Board of Directors until September 5, 2016 and continued to be paid his regular salary during that time. As part of his non-compete and non-hire agreement, he will receive a pro-rated payment of his vesting fiscal 2014 LTIP grant in September 2017. In addition, Mr. Wiseman's VDIP election will remain in the plan until maturity.

#### COMPENSATION FOR THE NAMED EXECUTIVE OFFICERS

The incentive awards for the Senior Management Team reflect the same total Fund, Department/Group and Individual performance factors as for all other employees. Residual LTIP payments are paid as described on page 82. Please refer to Table 6: Annual Deferred Awards.

Table 4 below shows the total direct compensation in fiscal 2017 for each Named Executive Officer (NEO).

TABLE 4: SUMMARY FISCAL 2017	TOTAL DIRECT	COMPENSATION
------------------------------	--------------	--------------

TABLE 4: SUMMARY FISCAL 2017 TOTAL DIRECT	Base Salary (A) 395,000		Department/ Group/ Individual	Total Incentive Award (B)	In-year award 903,970	Deferred award 903,970	Total direct compensation (A) + (B) 2,202,940
SMD & CFO	373,000	307,004	1,210,270	1,007,740	703,770	703,770	2,202,740
All amounts reported are in GBP Alain Carrier SMD & Head of International, Head of Europe Appointed June 21, 2016	424,452	732,379	1,554,589	2,286,960	1,180,220	1,106,740	2,711,412
Ed Cass SMD & Chief Investment Strategist	435,000	799,234	1,877,460	2,676,700	1,338,350	1,338,350	3,111,700
Eric Wetlaufer SMD & Global Head Public Market Investments	465,000	854,354	1,737,240	2,591,600	1,295,800	1,295,800	3,056,600
Graeme M. Eadie SMD & Global Head Real Assets	455,000	836,000	1,756,400	2,592,400	1,296,200	1,296,200	3,047,400

Excluding the compensation for the departing President & CEO, the total compensation awarded to the Named Executive Officers is \$24.3 million, up 4% from \$23.4 million in fiscal 2016.

Table 5 below shows total compensation over the past three fiscal years for the Named Executive Officers.

#### **TABLE 5: SUMMARY COMPENSATION**

President & CEO 2016 823,717 2,526,900 2,526,900 74,135 256,143 6,207,795 Appointed June 13, 2016 2015 660,690 1,724,144 — 59,462 224,905 2,669,201 Mark D. Wiseman® 2017 273,102 53,449 5,635 332,187 Former President & CEO 2016 630,000 1,818,600 1,818,600 73,483 14,155 4,354,838 Stepped down June 13, 2016 2015 515,000 1,875,400 61,125 13,945 2,465,470 Benita Warmbold 2017 395,000 903,970 903,970 40,813 11,794 2,255,547 SMD & CFO 2016 387,500 915,600 943,800 42,230 11,641 2,329,071 2015 347,500 915,600 38,535 9,009 1,310,644 All amounts reported are in GBP Alain Carriers 10 2017 452,009 1,248,560 1,106,740 1,000,000 62,701 19,381 3,889,390 SMD & Head of International, 2016 522,841 1,760,543 704,500 62,358 17,025 3,067,266 Head of Europe 2015 395,984 1,637,443 45,086 12,532 2,091,044 Appointed June 21, 2016 21, 20									Total
Name and Position   Year   A   Salary' (\$)   Salary' (\$)									compensation
Name and Position   Year   Salary' (\$)   S									granted
Name and Position   Year   A   A   A   A   A   A   A   A   A									(with
Name and Position  Year  A  B  C  D  E  F  C+D+E+F  C+D+E  C+D+C+F									
Name and Position         Year         A         B         C         D         E         F         C4D+EFF           Mark Machin <sup>5, 6, 7</sup> 2017         651,608         1,927,890         1,927,890         1,125,000         420,804         108,581         6,161,773           President & CEO         2016         823,717         2,526,900         2,526,900         74,135         256,143         6,207,795           Appointed June 13, 2016         2015         660,690         1,724,144         —         59,462         224,905         2,669,201           Mark D. Wiseman <sup>8</sup> 2017         273,102         53,449         5,635         332,187           Former President & CEO         2016         630,000         1,818,600         1,818,600         73,483         14,155         4,354,838           Stepped down June 13, 2016         2015         515,000         1,875,400         61,125         13,945         2,465,470           Benita Warmbold         2017         395,000         903,970         903,970         40,813         11,794         2,255,547           SMD & CFO         2016         387,500         943,900         943,800         42,230         11,641         2,329,071           Alain Carriers <sup>5,9,10</sup> <td></td> <td></td> <td></td> <td>,</td> <td></td> <td></td> <td></td> <td></td> <td>, ,</td>				,					, ,
Mark Machins.6.7         2017         651,608         1,927,890         1,927,890         1,125,000         420,804         108,581         6,161,773           President & CEO         2016         823,717         2,526,900         2,526,900         74,135         256,143         6,207,795           Appointed June 13, 2016         2015         660,690         1,724,144         –         59,462         224,905         2,669,201           Mark D. Wiseman8         2017         273,102         53,449         5,635         332,187           Former President & CEO         2016         630,000         1,818,600         73,483         14,155         4,354,838           Stepped down June 13, 2016         2015         515,000         1,875,400         61,125         13,945         2,465,470           Benita Warmbold         2017         395,000         903,970         903,970         40,813         11,794         2,255,547           SMD & CFO         2016         387,500         915,600         38,800         42,230         11,641         2,329,071           All amounts reported are in GBP         Alain Carriers <sup>2,9,10</sup> 2017         452,009         1,248,560         1,106,740         1,000,000         62,701         19,381         3,889,390			, , ,	( ' /	( )		( )	. ,	
President & CEO 2016 823,717 2,526,900 2,526,900 74,135 256,143 6,207,795 Appointed June 13, 2016 2015 660,690 1,724,144 — 59,462 224,905 2,669,201 Mark D. Wiseman® 2017 273,102 53,449 5,635 332,187 Former President & CEO 2016 630,000 1,818,600 1,818,600 73,483 14,155 4,354,838 Stepped down June 13, 2016 2015 515,000 1,875,400 61,125 13,945 2,465,470 Benita Warmbold 2017 395,000 903,970 903,970 40,813 11,794 2,255,547 SMD & CFO 2016 387,500 915,600 943,800 42,230 11,641 2,329,071 2015 347,500 915,600 38,535 9,009 1,310,644 All amounts reported are in GBP Alain Carriers 10 2017 452,009 1,248,560 1,106,740 1,000,000 62,701 19,381 3,889,390 SMD & Head of International, 2016 522,841 1,760,543 704,500 62,358 17,025 3,067,266 Head of Europe 2015 395,984 1,637,443 45,086 12,532 2,091,044 Appointed June 21, 2016 21, 20	Name and Position	Year	Α	В	C	D	E	F	C+D+E+F
Appointed June 13, 2016         2015         660,690         1,724,144         -         59,462         224,905         2,669,201           Mark D. Wiseman <sup>8</sup> 2017         273,102         53,449         5,635         332,187           Former President & CEO         2016         630,000         1,818,600         73,483         14,155         4,354,838           Stepped down June 13, 2016         2015         515,000         1,875,400         61,125         13,945         2,465,470           Benita Warmbold         2017         395,000         903,970         903,970         40,813         11,794         2,255,547           SMD & CFO         2016         387,500         943,900         943,800         42,230         11,641         2,329,071           All amounts reported are in GBP         2015         347,500         915,600         38,535         9,009         1,310,644           All amounts reported are in GBP         All amounts reported are in GBP         452,009         1,248,560         1,106,740         1,000,000         62,701         19,381         3,889,390           SMD & Head of International,         2016         522,841         1,760,543         704,500         62,358         17,025         3,067,266           Head of	Mark Machin <sup>5, 6, 7</sup>	2017	651,608	1,927,890	1,927,890	1,125,000	420,804	108,581	6,161,773
Mark D. Wiseman® 2017 273,102 534,49 5,635 332,187 Former President & CEO 2016 630,000 1,818,600 1,818,600 73,483 14,155 4,354,838 Stepped down June 13, 2016 2015 515,000 1,875,400 61,125 13,945 2,465,470 8enita Warmbold 2017 395,000 903,970 903,970 40,813 11,794 2,255,547 SMD & CFO 2016 387,500 943,900 943,800 42,230 11,641 2,329,071 2015 347,500 915,600 38,535 9,009 1,310,644 All amounts reported are in GBP Alain Carrier <sup>5,9,10</sup> 2017 452,009 1,248,560 1,106,740 1,000,000 62,701 19,381 3,889,390 SMD & Head of International, 2016 522,841 1,760,543 704,500 62,358 17,025 3,067,266 Head of Europe 2015 395,984 1,637,443 45,086 12,532 2,091,044 Appointed June 21, 2016 Ed Cass <sup>5</sup> 2017 435,000 1,338,350 1,338,350 46,306 6,893 3,164,899 SMD & Chief Investment Strategist 2016 430,000 1,319,100 1,319,100 47,456 6,819 3,122,475 2015 350,000 1,362,400 38,822 6,538 1,757,760 Eric Wetlaufer 2017 465,000 1,295,800 1,392,800 1,392,700 51,363 29,090 3,325,953 Public Market Investments 2015 375,000 1,295,000 1,296,200 1,296,200 49,036 8,821 3,105,258	President & CEO	2016	823,717	2,526,900	2,526,900		74,135	256,143	6,207,795
Former President & CEO 2016 630,000 1,818,600 1,818,600 73,483 14,155 4,354,838 Stepped down June 13, 2016 2015 515,000 1,875,400 61,125 13,945 2,465,470    Benita Warmbold 2017 395,000 903,970 903,970 40,813 11,794 2,255,547 SMD & CFO 2016 387,500 943,900 943,800 42,230 11,641 2,329,071 2015 347,500 915,600 38,535 9,009 1,310,644    All amounts reported are in GBP   Alain Carrier <sup>5,9,10</sup> 2017 452,009 1,248,560 1,106,740 1,000,000 62,701 19,381 3,889,390    SMD & Head of International, 2016 522,841 1,760,543 704,500 62,358 17,025 3,067,266    Head of Europe 2015 395,984 1,637,443 45,000 12,338,350 45,086 12,532 2,091,044    Appointed June 21, 2016    Ed Cass <sup>5</sup> 2017 435,000 1,338,350 1,338,350 46,306 6,893 3,164,899    SMD & Chief Investment Strategist 2016 430,000 1,319,100 47,456 6,819 3,122,475    2015 350,000 1,362,400 38,822 6,538 1,757,760    Eric Wetlaufer 2017 465,000 1,295,800 1,295,800 50,401 35,945 3,142,946    SMD & Global Head 2016 460,000 1,392,800 1,392,700 51,363 29,090 3,325,953    Public Market Investments 2015 375,000 1,296,200 1,296,200 49,036 8,821 3,105,258	Appointed June 13, 2016	2015	660,690	1,724,144	_		59,462	224,905	2,669,201
Stepped down June 13, 2016         2015         515,000         1,875,400         61,125         13,945         2,465,470           Benita Warmbold         2017         395,000         903,970         903,970         40,813         11,794         2,255,547           SMD & CFO         2016         387,500         943,900         943,800         42,230         11,641         2,329,071           All amounts reported are in GBP         Alain Carriers.9,10         2017         452,009         1,248,560         1,106,740         1,000,000         62,701         19,381         3,889,390           SMD & Head of International, Head of Europe         2015         395,984         1,637,443         704,500         62,358         17,025         3,067,266           Head of Europe         2015         395,984         1,637,443         45,086         12,532         2,091,044           Appointed June 21, 2016         2016         430,000         1,319,100         1,319,100         47,456         6,819         3,122,475           SMD & Chief Investment Strategist         2016         430,000         1,319,100         1,319,100         47,456         6,819         3,122,475           2015         350,000         1,362,400         38,822         6,538	Mark D. Wiseman <sup>8</sup>	2017	273,102				53,449	5,635	332,187
Senita Warmbold   2017   395,000   903,970   903,970   40,813   11,794   2,255,547	Former President & CEO	2016	630,000	1,818,600	1,818,600		73,483	14,155	4,354,838
SMD & CFO 2016 387,500 943,900 943,800 42,230 II,64I 2,329,07I 2015 347,500 915,600 38,535 9,009 I,310,644 All amounts reported are in GBP  Alain Carrier <sup>5,9,10</sup> 2017 452,009 I,248,560 I,106,740 I,000,000 62,701 I9,381 3,889,390 SMD & Head of International, 2016 522,84I I,760,543 704,500 62,358 I7,025 3,067,266 Head of Europe 2015 395,984 I,637,443 45,086 I2,532 2,09I,044 Appointed June 21, 2016  Ed Cass <sup>5</sup> 2017 435,000 I,338,350 I,338,350 46,306 6,893 3,164,899 SMD & Chief Investment Strategist 2016 430,000 I,319,100 I,319,100 47,456 6,819 3,122,475 2015 350,000 I,362,400 38,822 6,538 I,757,760 Eric Wetlaufer 2016 460,000 I,392,800 I,392,700 51,363 29,090 3,325,953 Public Market Investments 2015 375,000 I,296,200 I,296,200 49,036 8,821 3,105,258	Stepped down June 13, 2016	2015	515,000	1,875,400			61,125	13,945	2,465,470
2015   347,500   915,600   38,535   9,009   1,310,644   All amounts reported are in GBP	Benita Warmbold	2017	395,000	903,970	903,970		40,813	11,794	2,255,547
All amounts reported are in GBP Alain Carrier <sup>5,9,10</sup> 2017 452,009 1,248,560 1,106,740 1,000,000 62,701 19,381 3,889,390 SMD & Head of International, 2016 522,841 1,760,543 704,500 62,358 17,025 3,067,266 Head of Europe 2015 395,984 1,637,443 45,086 12,532 2,091,044 Appointed June 21, 2016 Ed Cass <sup>5</sup> 2017 435,000 1,338,350 1,338,350 46,306 6,893 3,164,899 SMD & Chief Investment Strategist 2016 430,000 1,319,100 1,319,100 47,456 6,819 3,122,475 2015 350,000 1,362,400 38,822 6,538 1,757,760 Eric Wetlaufer 2017 465,000 1,295,800 1,295,800 50,401 35,945 3,142,946 SMD & Global Head 2016 460,000 1,392,800 1,392,700 51,363 29,090 3,325,953 Public Market Investments 2015 375,000 1,451,300 42,247 19,911 1,888,459 Graeme M. Eadie 2017 455,000 1,296,200 1,296,200 49,036 8,821 3,105,258	SMD & CFO	2016	387,500	943,900	943,800		42,230	11,641	2,329,071
Alain Carrier <sup>5,9,10</sup> SMD & Head of International, 2016 522,841 1,760,543 704,500 62,358 17,025 3,067,266 Head of Europe 2015 395,984 1,637,443 45,000 1,338,350 46,306 6,893 3,164,899 SMD & Chief Investment Strategist 2016 430,000 1,319,100 1,319,100 47,456 6,819 3,122,475 2015 350,000 1,362,400 38,822 6,538 1,757,760 SMD & Global Head 2016 460,000 1,392,800 1,392,700 51,363 29,090 3,325,953 Public Market Investments 2017 455,000 1,296,200 1,296,200 1,296,200 49,036 8,821 3,105,258		2015	347,500	915,600			38,535	9,009	1,310,644
Alain Carrier <sup>5,9,10</sup> SMD & Head of International, 2016 522,841 1,760,543 704,500 62,358 17,025 3,067,266 Head of Europe 2015 395,984 1,637,443 45,000 1,338,350 46,306 6,893 3,164,899 SMD & Chief Investment Strategist 2016 430,000 1,319,100 1,319,100 47,456 6,819 3,122,475 2015 350,000 1,362,400 38,822 6,538 1,757,760 SMD & Global Head 2016 460,000 1,392,800 1,392,700 51,363 29,090 3,325,953 Public Market Investments 2017 455,000 1,296,200 1,296,200 1,296,200 49,036 8,821 3,105,258	All amounts reported are in GBP								
Head of Europe Appointed June 21, 2016  Ed Cass <sup>5</sup> SMD & Chief Investment Strategist 2016 2017 2016  2017 2016  2017 2016 2017 2016 2018 2018 2018 2019 2018 2019 2018 2019 2018 2019 2018 2019 2018 2019 2018 2019 2018 2019 2018 2019 2018 2019 2018 2019 2018 2018 2018 2018 2018 2018 2018 2018	Alain Carrier <sup>5, 9, 10</sup>	2017	452,009	1,248,560	1,106,740	1,000,000	62,701	19,381	3,889,390
Appointed June 21, 2016  Ed Cass <sup>5</sup> 2017	SMD & Head of International,	2016	522,841	1,760,543	704,500		62,358	17,025	3,067,266
Ed Cass <sup>5</sup> 2017 435,000 1,338,350 1,338,350 46,306 6,893 3,164,899 SMD & Chief Investment Strategist 2016 430,000 1,319,100 1,319,100 47,456 6,819 3,122,475 2015 350,000 1,362,400 38,822 6,538 1,757,760 Eric Wetlaufer 2017 465,000 1,295,800 1,295,800 50,401 35,945 3,142,946 SMD & Global Head 2016 460,000 1,392,800 1,392,700 51,363 29,090 3,325,953 Public Market Investments 2015 375,000 1,451,300 42,247 19,911 1,888,459 Graeme M. Eadie 2017 455,000 1,296,200 1,296,200 49,036 8,821 3,105,258	Head of Europe	2015	395,984	1,637,443			45,086	12,532	2,091,044
SMD & Chief Investment Strategist     2016     430,000     1,319,100     1,319,100     47,456     6,819     3,122,475       2015     350,000     1,362,400     38,822     6,538     1,757,760       Eric Wetlaufer     2017     465,000     1,295,800     1,295,800     50,401     35,945     3,142,946       SMD & Global Head     2016     460,000     1,392,800     1,392,700     51,363     29,090     3,325,953       Public Market Investments     2015     375,000     1,451,300     42,247     19,911     1,888,459       Graeme M. Eadie     2017     455,000     1,296,200     1,296,200     49,036     8,821     3,105,258	Appointed June 21, 2016								
2015     350,000     I,362,400     38,822     6,538     I,757,760       Eric Wetlaufer     2017     465,000     I,295,800     I,295,800     50,401     35,945     3,142,946       SMD & Global Head     2016     460,000     I,392,800     I,392,700     51,363     29,090     3,325,953       Public Market Investments     2015     375,000     I,451,300     42,247     19,911     I,888,459       Graeme M. Eadie     2017     455,000     I,296,200     I,296,200     49,036     8,821     3,105,258	Ed Cass <sup>5</sup>	2017	435,000	1,338,350	1,338,350		46,306	6,893	3,164,899
Eric Wetlaufer         2017         465,000         1,295,800         1,295,800         50,401         35,945         3,142,946           SMD & Global Head         2016         460,000         1,392,800         1,392,700         51,363         29,090         3,325,953           Public Market Investments         2015         375,000         1,451,300         42,247         19,911         1,888,459           Graeme M. Eadie         2017         455,000         1,296,200         1,296,200         49,036         8,821         3,105,258	SMD & Chief Investment Strategist	2016	430,000	1,319,100	1,319,100		47,456	6,819	3,122,475
SMD & Global Head     2016     460,000     1,392,800     1,392,700     51,363     29,090     3,325,953       Public Market Investments     2015     375,000     1,451,300     42,247     19,911     1,888,459       Graeme M. Eadie     2017     455,000     1,296,200     1,296,200     49,036     8,821     3,105,258		2015	350,000	1,362,400			38,822	6,538	1,757,760
SMD & Global Head       2016       460,000       1,392,800       1,392,700       51,363       29,090       3,325,953         Public Market Investments       2015       375,000       1,451,300       42,247       19,911       1,888,459         Graeme M. Eadie       2017       455,000       1,296,200       1,296,200       49,036       8,821       3,105,258	Eric Wetlaufer	2017	465,000	1,295,800	1,295,800		50,401	35,945	3,142,946
Graeme M. Eadie 2017 455,000 1,296,200 1,296,200 49,036 8,821 3,105,258	SMD & Global Head	2016	460,000	1,392,800	1,392,700		51,363	29,090	
	Public Market Investments	2015	375,000	1,451,300			42,247	19,911	1,888,459
	Graeme M. Eadie	2017	455,000	1,296,200	1,296,200		49,036	8,821	3,105,258
SMID & GIODAI HEAD REAL Assets 2016 450,000 1,398,450 1,398,400 50,068 8,748 3,305,666	SMD & Global Head Real Assets	2016	450,000	1,398,450	1,398,400		50,068	8,748	3,305,666
2015 367,500 1,422,200 41,235 10,312 1,841,247		2015					41,235	10,312	

- 1. One-time adjustments were made to FI6 salaries as a result of the compensation structure redesign in fiscal 2015.
- 2. The Deferred Award represents the award value at the time of the award. The award fluctuates with the performance of the total Fund over the vesting period.
- 3. Other Deferred Awards refer to one-time, non-recurring long-term awards.
- 4. All other compensation includes life insurance, disability benefits, health and dental benefits, moving costs, fitness reimbursement as well as comprehensive health assessment conducted at a private medical clinic. Perquisites are limited to paid parking for officers. For the time he spent in Hong Kong, Mr. Machin received a housing allowance in accordance with local market practice. He received a reimbursement of \$17,000 for moving costs.
- 5. NEO elected to defer all or part of the fiscal 2017 In-year award into the Voluntary Deferred Incentive Plan (VDIP).
- Mr. Machin's compensation for 2015, 2016 and 2017 (pro-rated for the period April I June 12, 2017) are converted using the exchange rate in effect on March 31, 2017 (CAD:HKD 1:5.83).
- 7. Upon his promotion to President & CEO and as part of his transition package to Toronto, Mr. Machin received an SRFU grant of C\$625,000 and Fund Return Units (FRUs) with a grant date value of C\$500,000.
- 8. Mr. Wiseman remained as a Senior Advisor to the CPPIB Board of Directors until September 5, 2016 and continued to be paid his regular salary during that time.
- 9. Upon his promotion to SMD & Head of International, Head of Europe, Mr. Carrier received an SRFU award of GBP 1,000,000. This award vests over three years.
- 10. As part of his original employment agreement, Mr. Carrier received an additional cash payment on his salary and in-year bonus payment. This arrangement was discontinued upon his promotion.

#### COMPENSATION AND ESTIMATED FUTURE PAYOUTS

NEOs must defer a portion of the incentive award. The deferred portion vests and pays out in equal instalments over a three-year period following the fiscal year for which the award is given. All deferred awards fluctuate in value with the net total Fund rate of return during the vesting period. Under the former LTIP plan, awards vested and paid out four years from the time of grant. Table 6 below shows the outstanding deferred portion of incentive awards and former LTIP awards and future payouts for each Named Executive Officer.

TABLE 6: ANNUAL DEFERRED AWARDS

	T f	Year of	Payments in current year <sup>1, 4</sup>	Estimated future payouts at time of vesting			
Name	Type of Award	Award	2017	2018	2019	2020	
Mark Machin <sup>3, 5</sup>	Deferred Award	2017		642,630	642,630	642.630	
President & CFO	Deferred Award	2016	942.038	942.040	942.040	0 12,030	
Appointed June 13, 2016	I TIP	2015	1.294.094	814.785	7 12,0 10		
Appointed June 13, 2010	FLTIP	2015	647.047	407,392			
	LTIP	2014	1,725,740	107,372			
Benita Warmbold	Deferred Award	2017		301,320	301,320	301,320	
SMD & CFO	Deferred Award	2016	351,852	351,850	351,850	,,,	
	LTIP	2015	,,,,	1,144,660	,,,,,,,		
	LTIP	2014	1,021,190	, , , ,			
All amounts reported are in GBP							
Alain Carrier	Deferred Award	2017		368,910	368,910	368,910	
SMD & Head of International, Head of Europe	Deferred Award	2016	262,640	262,640	262,640		
Appointed June 21, 2016	LTIP	2015		1,021,946			
	LTIP	2014	1,272,830				
Ed Cass	Deferred Award	2017		446,120	446,120	446,120	
SMD & Chief Investment Strategist	Deferred Award	2016	491,765	491,770	491,770		
<u> </u>	LTIP	2015		1,152,890			
	LTIP	2014	1,357,210				
	ELTIP	2014	537,160				
Eric Wetlaufer	Deferred Award	2017		431,930	431,930	431,930	
SMD & Global Head	Deferred Award	2016	519,204	519,200	519,200		
Public Market Investments	LTIP	2015		1,415,180			
	LTIP	2014	1,669,970				
Graeme Eadie	Deferred Award	2017		432,070	432,070	432,070	
SMD & Global Head Real Assets	Deferred Award	2016	521,329	521,330	521,330		
	LTIP	2015		1,349,670			
	LTIP	2014	1,725,880				

I. The LTIP was discontinued as part of the incentive plan redesign in fiscal 2015. Residual payments were paid out in fiscal 2016 and fiscal 2017. The last residual payment will occur at the

 $<sup>2.</sup> Current\ estimated\ value\ of\ LTIP\ and\ Deferred\ Awards\ is\ based\ on\ a\ fund\ return\ of\ 0\%\ for\ future\ years.$ 

<sup>3.</sup> Mr. Machin's unvested grants have been converted to CAD using the exchange in rate in effect on March 31, 2017 (CAD:HKD 1:5.83).

<sup>4.</sup> Subject to a non-compete and non-hire agreement, Mr. Wiseman may be eligible to receive a pro-rated LTIP payment.

<sup>5.</sup> Upon his transition to Toronto, Mr. Machin received a partial payment on his outstanding LTIP grants based on the value that was earned while he was employed in Hong Kong.

#### **VOLUNTARY DEFERRAL INCENTIVE PLAN (VDIP)**

Eligible employees may choose to participate in the Voluntary Deferral Incentive Plan (VDIP) before the end of the fiscal year in which they earn the incentive. The incentive is then paid out at the end of a three-year deferral period.

Table 7 below shows the VDIP election amounts and estimated future payouts for each Named Executive Officer who chose to participate in the plan. The future value of the payouts is estimated as at March 31, 2017. It is based on actual CPP Fund and Private Investment portfolio rates of return for fiscal 2016 and 2017. We assume no growth in future years.

#### TABLE 7: VDIP ELECTION AND ESTIMATED PAYOUT

	Year of	Amount	Estimated future payouts at the end of fiscal year					
Name	Election	Deferred (\$)	2018	2019	2020			
Mark Machin	2017	710,078			710,078			
President & CEO								
Appointed June 13, 2016								
Mark D. Wiseman <sup>2</sup>								
Former President & CEO	2016	1,928,800	2	,157,190				
Stepped down on June 13, 2016	2015	1,875,400	2,168,150					
Benita Warmbold	2016	707,930		791,757				
SMD & CFO	2015	915,600	1,058,526					
All amounts reported are in GBP								
Alain Carrier	2017	590,110			590,110			
SMD & Head of International, Head of Europe								
Appointed June 21, 2016								
Ed Cass	2017	1,338,350			1,338,350			
SMD & Chief Investment Strategist	2016	1,319,100	l,;	475,296				
Ü	2015	1,362,400	1,575,073					
Graeme Eadie	2016	349,630		391,030				
SMD & Global Head Real Assets	2015	711.100	822.104					

I. Represents the original amount deferred.

<sup>2.</sup> Mr. Wiseman's VDIP election will remain into the plan until maturity.

#### PENSION PLANS

As described earlier, all Canada-based employees participate in the regular and supplementary defined contribution pension plans. Employees based outside of Canada are eligible to participate in local pension plans that vary based on local regulations and market practices.

#### RETIREMENT COMPENSATION ARRANGEMENT (RCA)

The CEO participates in a Retirement Compensation Arrangement (RCA), which is a non-registered pension fund to which CPPIB contributes annually. The participant can choose from a range of options on how the available funds are invested, similar to the registered pension plan and supported by the same provider. As part of his new compensation package as CEO, Mr. Machin is taking a greater proportion of his overall total compensation in the form of pension.

Table 8 below shows the contributions and investment earnings for the Named Executive Officers under both plans. The total unfunded liability for the Canada-based Named Executive Officers, as at March 31, 2017, is \$924,262 (2016 – \$1,142,372).

TABLE 8: PENSION PLAN CONTRIBUTIONS

		_	Co	ompensatory (\$)		
		Accumulated value at Start of Year	Employer Contributions	Investments Earnings	Non- compensatory	at End of Year
Name	Plan Type	(\$)	(\$)	(\$)	(\$) <sup>1, 2</sup>	(\$)
Mark Machin	Registered	0	20,274		20,801	41,075
President & CEO	Supplementary	0	3,067	51		3,118
Appointed June 13, 2016	RCA	0	365,000		(178,168)	186,832
	Mandatory <sup>3, 5</sup>	23,189	772	see note 6	772	24,734
	Voluntary <sup>4, 5</sup>	227,101	31,690	see note 6		258,791
Mark Wiseman	Registered	330,802	6,317		35,869	372,988
Former President & CEO	Supplementary	421,202	47,132	41,995		510,329
Stepped down as on June 13, 2016						
Benita Warmbold	Registered	263,203	13,677		49,479	326,359
SMD & CFO	Supplementary	176,662	27,136	29,420		233,218
All amounts reported are in GBP						
Alain Carrier	GSIPP	606,843	3,666		139,157	749,667
SMD & Head of International,	Cash-In-Lieu <sup>7</sup>	0	59,035	see note 7		59,035
Head of Europe						
Appointed June 21, 2016						
Ed Cass	Registered	264,410	13,711		55,060	333,181
SMD & Chief	Supplementary	195,450	32,596	40,168		268,213
Investment Strategist						
Eric Wetlaufer	Registered	148,513	13,756		37,688	199,957
SMD & Global Head	Supplementary	111,037	36,646	602		148,285
Public Market Investments						
Graeme Eadie	Registered	347,349	13,741		68,228	429,317
SMD & Global Head Real Assets	Supplementary	238,021	35,296	1,230		274,547

<sup>1.</sup> Represents employee contributions and investment earnings in the registered pension plan.

<sup>2.</sup> Mr. Machin's Retirement Compensation Arrangment represents investment earnings and government tax deductions in the plan.

<sup>3.</sup> Mr. Machin became an active and non-participating member of the Mandatory Provident Fund (MPF) for Hong Kong when he assumed the role of CEO, which has an employee and employer contribution of 5% towards relevant income capped at HKD 30,000 of monthly earnings.

<sup>4.</sup> CPPIB provides an employer pension contribution of 5% towards relevant income above the HKD 30,000 monthly earnings ceiling.

<sup>5.</sup> Figures are reported in CAD. The exchange rate from HKD:CAD for March 31, 2017 is 0.1716078.

 $<sup>\</sup>ensuremath{\mathsf{6}}.$  Investment earnings are not disclosed by the pension administrator.

<sup>7.</sup> Received employer pension contributions as cash-in-lieu above annual UK pension limit less statutory deductions and the employer portion of National Insurance contributions.

Retirement

# TERMINATION AND RETIREMENT ARRANGEMENTS FOR THE PRESIDENT & CEO

In the event of termination without cause, severance pay for the President & CEO is set at:

- > 12 months of base salary and a pro-rated payment for the value of the Incentive Award at target (both In-year and Deferred), plus
- > An additional month of salary and one-twelfth of the pro-rated Incentive Award value for each year of service.

Severance pay is capped at 21 months for the President & CEO. The President & CEO forfeits any deferred portion of the incentive awards, as well as former LTIP awards. Insured benefits, such as health, dental and life coverage, continue during the severance period.

In the case of termination with cause, the President & CEO forfeits all incentives and benefits. There are no change-of-control provisions in the employment arrangements.

In the event of resignation, all incentives and benefits are forfeited.

The President & CEO is eligible to retire from the organization and receive certain benefits, provided he has served in the role of President for at least five years and has provided formal notice at least six months in advance. Any Annual Incentive Award during the year of retirement is paid out on a pro-rated basis. Any unvested deferred awards continue to vest as per the established vesting schedule. All benefits stop on the date of retirement.

# TERMINATION AND RETIREMENT ARRANGEMENTS FOR THE NEOs

In the event of termination without cause, severance pay for the Named Executive Officers (NEOs) is set at:

> 12 months of base salary and a pro-rated payment for the value of the in-year Award at target, plus

> An additional month of salary and one-twelfth of the target inyear award for each year of service.

Severance pay is capped at 24 months for Graeme Eadie, and 18 months for the other NEOs. Any unvested deferred portion of the incentive awards, as well as former LTIP awards, are forfeited. Insured benefits, such as health, dental and life coverage, continue during the severance period.

In the case of termination with cause, the employee forfeits all incentives and benefits. There are no change-of-control provisions in the employment arrangements.

In the event of resignation and in consideration of adherence to a one-year non-compete and non-hire agreement, the Named Executive Officers receive either a prorated payment of the LTIP grant or of the Deferred Award which would have vested at the end of the fiscal year of resignation. It is payable one year after resignation. All other incentives and benefits are forfeited.

NEOs are generally entitled to retire from the organization and receive certain benefits, provided they have reached the age of 55 and have worked with CPPIB for 10 years.

Upon retirement, employees continue to receive the ongoing deferral payments owed to them under the Incentive Plan, unless they have opted out. The normal payment cycle applies and payments are subject to the same conditions. Retirees also receive LTIP payouts prorated for the time worked during the performance period. These are paid shortly after the regular vesting dates. All benefits stop on the date an employee retires.

Table 9 below shows the payments that would be made, as of March 31, 2017, to the Named Executive Officers if they retire or are terminated without cause.

#### TABLE 9: POTENTIAL TERMINATION AND RETIREMENT PAYMENTS

	Canaplatad		treatment of unvested	
Name	Completed years of service	Severance <sup>2</sup>	awards <sup>3,4</sup>	
Mark Machin <sup>5</sup> President & CEO Appointed June 13, 2016	5	4,250,000	4,480,600	
Benita Warmbold SMD & CFO	8	1,555,313	2,459,200	
All amounts reported are in GBP Alain Carrier SMD & Head of International, Head of Europe Appointed June 21, 2016	9	1,935,000	2,393,200	
Ed Cass SMD & Chief Investment Strategist	9	1,957,500	3,176,800	
Eric Wetlaufer SMD & Global Head Public Market Investments	5	1,976,250	3,385,200	
Graeme Eadie SMD & Global Head Real Assets	П	2,730,000	3,340,700	

- 1. Excludes incentive compensation payouts for the current fiscal year, which are included in Table 5: Summary Total Compensation. Termination and retirement payments are estimated as of March 31, 2017. Actual payments are pro-rated based on time worked in the performance period.
- 2. Excludes the value of insured benefits, such as health, dental and life insurance, continued during the severance period.
- 3. Upon retirement, payout of the unvested awards will be subject to the following conditions:
- Performance is measured at the end of the vesting period;
- Payment is made at the end of the vesting period.
- 4. The unvested awards assume a net return of 0% on the CPP Fund for future years.
- 5. Mr. Machin's unvested grants in HKD have been converted to CAD using the exchange rate in effect on March 31, 2017 (CAD:HKD 1:5.83).

# Letter from the Chair of the Governance Committee

We believe good governance is integral to CPPIB's successful long-term performance. It also ensures compliance with the law, standards and ethical conduct that is central to how CPPIB does business. We strive to meet rigorous standards of corporate governance, following what we view to be global best practices for our industry and the companies in which we invest.

Good governance starts with our Board of Directors. The Governance Committee of the Board regularly assesses our corporate governance practices against industry and stakeholder expectations, changing regulatory requirements and evolving global best practices. The Committee also oversees the annual Board evaluation and succession planning for Directors. We review criteria and qualifications for Directors, oversee ongoing Director development programs and monitor the application of the Code of Conduct across CPPIB. The Committee also recommends Proxy Voting Principles and Guidelines.

My Committee colleagues for fiscal 2017 were: Robert Brooks, Pierre Choquette, Michael Goldberg (until June 2016), Tahira Hassan, Heather Munroe-Blum and Jackson Tai, who replaced Michael Goldberg as a Committee member when he succeeded Mr. Goldberg on the Board in June 2016.

#### FISCAL 2017 REPORT ON ACTIVITIES

Succession planning for Directors is one of our most important responsibilities. During fiscal 2016-2018, we will have had six Directors retire and five others have needed to be reappointed or replaced.

Using the Director Appointment Process described on page 88, and based upon our stringent Board and peer evaluation process, we recommended Douglas Mahaffy and Kathleen Taylor for reappointment. We have been attempting to minimize the disruption of retirements by staging them over three years. Jackson Tai, CPPIB's first non-resident Director, was appointed in June 2016, replacing Michael Goldberg. John Montalbano and Ashleigh Everett were appointed in February 2017 to replace Pierre Choquette and Nancy Hopkins. We have recommended a second non-resident Director to replace Murray Wallace, and we are actively seeking replacements for Robert Brooks and myself, to be effective later this year. We are also addressing the reappointments of Heather Munroe-Blum, Karen Sheriff and Jo Mark Zurel.

In fiscal 2017, the Committee recommended modifications to the Board's delegation of authority to Management to reflect the increasing scale of CPPIB. In addition, certain changes to director compensation came into effect following an in-depth and extensive review of Director compensation in 2016. These changes support strong governance performance through the recruitment and retention of outstanding Directors, and they continue to recognize and reflect the public mandate of CPPIB. The review involved formalizing the CPPIB's Directors' Compensation Philosophy and related pay principles, as described on page 90.

During the next year, in addition to our continuing activities, we will concentrate on completing this round of Board renewal and orienting the new Directors to assist them in maximizing their contributions.

Chair, Governance Committee

# Governance Practices of the Board of Directors

This section sets out certain key governance practices of the Board of Directors. More extensive governance information is posted on our website.

# DUTIES, OBJECTIVES AND MANDATE OF THE BOARD OF DIRECTORS

An important responsibility of the Board is to preserve and enhance a governance model in which CPPIB operates at arm's length from governments with an investment-only mandate.

The Board is also responsible for the stewardship of CPPIB. This includes overseeing the Chief Executive Officer and Enterprise Risk Management.

Directors are required to act honestly and in good faith with a view to the best interests of CPPIB. They must exercise the care, diligence and skill that a reasonably prudent person would apply in comparable circumstances. They must employ any expertise or skill they possess in carrying out their duties.

Among other duties, the Directors:

- > Appoint the President & CEO and annually review his or her performance and oversee succession planning;
- > Set compensation policies and approve Senior Management compensation;
- > Determine the organization's strategic direction in collaboration with management;
- > Review and approve investment policies, standards and procedures;
- > Approve investment risk targets and limits;
- > Review and approve the annual business plan and budget;
- > Appoint CPPIB's external auditor;
- > Establish procedures to identify and resolve conflicts of interest;
- > Establish and monitor compliance with a Code of Conduct for Directors and employees;
- > Assess the performance of the Board itself, including an annual Chairperson and peer review;
- > Establish other policies relating to such matters as authorities, procurement, travel and expenses; and
- > Review and approve material disclosures such as quarterly and annual Financial Statements and the Annual Report.

In addition, the Directors approve the guidelines for retaining external investment managers and for making large investment transactions. They regularly review the Investment Portfolio and the results of investment decisions. A detailed description of the activities of the Board committees is set out below.

An important part of the carefully designed governance structure that balances independence with accountability is that investment professionals are accountable to an independent Board of Directors operating at arm's length from governments. The Board ensures that CPPIB's investment-only mandate is undertaken without regard to

political, regional, social or economic development considerations or any other non-investment objectives.

CPPIB's Code of Conduct states that Board members shall not participate in any political activity that could be incompatible with their duties, affect their ability to carry out their duties in a politically impartial fashion or cast doubt on the integrity, objectivity or impartiality of the organization. Directors, like officers and employees, have a duty under the Code of Conduct to immediately report any attempted political interference with respect to investments, procurement, hiring or any other decisions. No such reports have been made. The Code of Conduct also establishes a process for identifying, minimizing and resolving financial conflicts of interest so that Directors, officers and employees can discharge their responsibilities effectively while maintaining their integrity and, in the case of Directors, recognize when they may have a systemic conflict of interest.

# COMPOSITION, MANDATES AND ACTIVITIES OF BOARD COMMITTEES

The Board has four committees: Investment, Audit, Human Resources and Compensation, and Governance. Membership is shown in the Board Attendance chart on page 92.

The Investment Committee oversees CPPIB's core business, which is making investment decisions within the context of a Board-approved framework. The Committee reviews and recommends investment policies to the Board. It also reviews, approves and monitors the long-term investment strategy. In addition, the Committee reviews portfolio risk tolerances, approves the engagement of external investment managers in accordance with the CPPIB Act, and approves large investment transactions. All members of the Board serve on the Investment Committee.

The Audit Committee oversees management controls and financial reporting. This includes recommending for Board approval the Financial Statements and Management's Discussion and Analysis, and overseeing the external and internal audit functions. Oversight also involves the appointment of the internal auditor and recommending the external auditor for appointment by the full Board. The Audit Committee reviews information systems and internal control policies and practices. It oversees the Internal Audit function and financial aspects of the employee pension plans, and advises the Board in connection with the statutorily mandated Special Examination to review CPPIB's records, systems and practices that is conducted every six years by an external auditor appointed by the Board of Directors, upon the recommendation of the Audit Committee. In fiscal 2016, a Special Examination was completed by Deloitte with a clean opinion. In its report, Deloitte concluded that there were no significant deficiencies in the systems and practices examined during the period covered by the examination. A copy of the Special Examination report and the Special Examiner's report are available on CPPIB's website. The next Special Examination will be held in 2022. The Audit Committee regularly meets separately with each of the external and internal auditors, without management present, and with the CEO and CFO.

The Human Resources and Compensation Committee (HRCC) administers the performance evaluation process for the CEO and senior leadership, reviews and recommends the compensation framework, reviews organizational structure and oversees Management succession planning. It also oversees employee benefits and human resources policies as well as the employee pension plans. The role of the HRCC is further outlined in the Compensation Discussion and Analysis beginning on page 70.

The Governance Committee ensures that CPPIB follows appropriate governance best practices. The Governance Committee monitors the application of the Code of Conduct and recommends amendments. It makes recommendations to the Board to improve the Board's effectiveness, oversees Board succession planning, the design of Director orientation and ongoing Director education programs, reviews criteria and qualifications for new Directors, recommends Director compensation, and establishes, recommends and is involved in performance evaluation processes for the Chairperson, individual Directors, Board committees and the full Board.

At every regularly scheduled meeting, the Board of Directors and all committees have in camera sessions without members of Management present. As noted above, the Audit Committee also meets privately with each of the internal and external auditors. In addition, the Board meets alone with the President & CEO at every regularly scheduled Board meeting.

We believe that diversity is crucial to ensuring an effective Board of Directors with various perspectives and qualifications. Gender diversity is one important element. There are currently five women who serve as Directors, including Heather Munroe-Blum who is the Chairperson. This total represents approximately 40% of total Board members.

#### **DECISIONS REQUIRING PRIOR BOARD APPROVAL**

Management's discretion in making operational and investment decisions is described in Board-approved or Board committeeapproved policies, including a detailed policy dealing exclusively with authorities. In particular, Board approval is required for matters affecting the strategic direction of the organization and for the annual business plan and budget. Annual and incentive-based compensation for officers, as well as their appointments, also require Board approval.

#### **ENSURING BOARD EFFECTIVENESS**

#### MANAGING PRUDENT BOARD RENEWAL

The Canada Pension Plan Investment Board Act requires that each Director is appointed for a term of up to three years. Each Director may be reappointed for one or more additional terms. In order to ensure good governance practices, the Board prudently manages continuity and renewal by seeking to ensure that multiple tenured directors remain on the Board as other Directors complete their terms, and new Directors are transitioned onto the Board.

In fiscal 2017, the Board worked to ensure a smooth transition as a number of Directors completed their terms and new Directors joined the Board.

This fiscal year saw three long-tenured Board members depart after their terms expired: Pierre Choquette, Michael Goldberg and Nancy Hopkins. They were replaced by Jackson Tai, Ashleigh Everett and John Montalbano, each of whom have diverse business and professional backgrounds.

The Board is also working with CPPIB's stewards to establish a prudent rhythm of turnover in perpetuity. Renewal will continue to contribute to the Board's effectiveness as it carries out its duties, yet it must be managed over a prudent and effective course.

#### **BOARD APPOINTMENT PROCESS**

The federal Governor in Council appoints Directors on the recommendation of the federal finance minister, following the minister's consultation with the finance ministers of the participating provinces. An external nominating committee with private sector involvement assists in the process.

The Director appointment process is designed to ensure that the Board has Directors with proven financial ability or relevant work experience such that CPPIB will be able to effectively achieve its objectives. In seeking to uphold CPPIB's governance practices as a leading model in the oversight of public pension management, the Director appointment process is based on the principles of merit, openness, transparency and diversity. The process aligns with our governance model to ensure an independent, qualified Board of Directors.

As part of the Director appointment process, CPPIB retains and manages executive search firms to source qualified candidates for consideration. To ensure it is meeting the principles of openness, transparency and independence, beginning in September 2016 the Board posted a Notice of Appointment opportunity on CPPIB's website whereby members of the general public could view the timing of future Board appointments and the critical competencies required of a Director so that interested individuals could submit their names for consideration. These applicants augment those candidates identified by external executive search firms to ensure the widest possible network of candidates was considered for appointment. The competencies analysis described above is used to establish the search criteria used to assess candidates identified by both the executive search firm and who have applied through the Notice of Appointment Opportunity. In addition to the competencies analysis, diversity is an important consideration in ensuring a qualified Board of Directors. Once finalized, the names of qualified candidates are forwarded to the Nominating Committee for Appointments to CPPIB's Board of Directors, which considers them and submits names of recommended candidates to the federal finance minister.

The Governance Committee regularly reviews and updates both desirable and actual competencies of the Board to ensure that appointment and reappointment decisions are made with a view to having a Board fully capable of providing the effective oversight necessary for CPPIB to achieve its statutory objects. The Board has determined that the governance, functional and industry experience of the Board currently provides for the effective oversight of CPPIB's activities. Details of the competencies analysis of the Board, as at March 31, 2017, are set out in the table on page 89.

Biographies of the CPPIB Board of Directors are on pages 94 to 96. They provide details of each Director's background, business and financial experience.

	Experience and Expertise	lan Bourne	Robert Brooks	Ashleigh Everett	Tahira Hassan	Doug Mahaffy	John Montalbano	Heather Munroe-Blum	Karen Sheriff	Jackson Tai	Kathleen Taylor	Murray Wallace	Jo Mark Zurel
	Governance	X	X	X	X	X	X	X	X	X	X	X	X
	C-Suite Executive Leadership	×	X	×	X	×	X	×	×	X	X	X	X
nt	Asset Management		×		×	×	×			X			
Investment Management	Banking/Investment Banking		×	×		×	×			×	×	×	
Janag	Insurance											×	
ent l	Capital Markets	×	X			×	X			×			
restm	Capital Expenditure Management	×			X					×	×		X
<u>r</u>	Risk Management	×	X	×			X	×	×	×	×	X	X
	Accounting/Finance	×	X		X	×	X			X	×	×	X
	Business Building and Transformation	×	×	×	×		×	×	×	X	×	×	X
	Government/Regulatory/Public Policy	X						X				X	
	International Business	X	X		X	X		X		X	X	X	X

#### **BOARD MEMBER ORIENTATION AND DEVELOPMENT**

The Board has an established orientation process for new Directors. This includes several comprehensive, full-day sessions with discussion of the background, history and mandate of CPPIB as well as its strategy, business planning process and current corporate and departmental business plans. It involves advance provision to each new Director of background material and intensive interaction with Management during the orientation process. Directors can attend supplemental orientation sessions to further deepen their knowledge of the organization.

Professional development for all Directors is a key focus for the Board because of the evolving nature of a Director's responsibilities and the unique nature of CPPIB. Management provides ongoing presentations focused on our business, emerging global issues and corporate governance practices. Special development seminars outside the regular meeting context feature both external and internal experts.

Directors are encouraged to participate in relevant external programs. A key education component for the Board members is to develop an in-depth understanding of the geographic regions in which CPPIB invests. Over the past few years, Directors have visited select international offices and gained valuable insights related to economic and geopolitical risk awareness for those regions, which enhanced the Board's knowledge of the various challenges and implications of deploying capital outside North America. In June 2016, the Board convened in London, U.K., which provided the Directors with an opportunity to review first-hand CPPIB's operations in London. These Board sessions included both internal

and external educational components focused on CPPIB's European strategies and investments as well as regional economic and political developments that affect CPPIB.

Given CPPIB's scale and the growth of Fund assets, the Board will continue to engage in these types of education programs as a central part of the Board's governance responsibility.

#### A COMMITMENT TO ACCOUNTABILITY

# PROCEDURES FOR THE ASSESSMENT OF BOARD PERFORMANCE

The Board has an established annual process for evaluating its own performance and that of its committees, the Chairperson and each Director. All assessments are currently conducted through confidential questionnaires. Summaries of the results of the Board and committee evaluations are reviewed by the full Board and provide a basis for improvement plans.

The Chair of the Governance Committee leads the confidential annual Chairperson review who, subject to the direction of the Board, provides feedback to the Chairperson. The feedback is also relevant to the issue of reappointment of the Chairperson when his or her term expires.

The Chairperson leads the confidential annual peer review which is designed to assist each Director in identifying self-development initiatives and assist in providing the external nominating committee with guidance on individual reappointments. After receipt of relevant questionnaire feedback, the Chairperson meets formally with each Director. The Board considers improvements to this process annually.

To ensure independence among Directors, the Board of Directors also follows leading practices by monitoring interlocking relationships. This includes Board and committee interlocks. We currently have one Board interlock whereby Heather Munroe-Blum and Kathleen Taylor both serve on the Board of Royal Bank of Canada. The Board has considered this interlock and has determined that this relationship does not impair the exercise of independent judgment of the Directors.

#### **BOARD EXPECTATIONS OF MANAGEMENT**

The Board expects Management to comply with the CPPIB Act and regulations and all policies approved by the Board and to otherwise act in accordance with applicable law. Management develops, with involvement from the Board, the strategic direction of the organization in response to its growing asset management responsibilities and the outlook for capital markets. The strategy incorporates risk management policies and controls, as well as monitoring and reporting mechanisms. Management is also expected to sustain and promote a culture of high integrity, which appropriately manages any conflicts of interest, and to adhere to a stringent Code of Conduct.

Management is charged with developing benchmarks that objectively measure the performance of the markets, asset classes and programs in which CPP assets are invested. The Board approves benchmarks at the total Fund level. These benchmarks assist the Board in evaluating management's investment performance and structuring performance-based compensation incentives.

Management is expected to disclose all material activities to the Board and public on a full and timely basis. This includes new investments, the engagement of operational and investment partners, quarterly and annual financial results, and developments that may affect CPPIB's reputation.

#### **DIRECTORS' COMPENSATION**

The Governance Committee of the Board is responsible for making recommendations with respect to Directors' compensation, which consists of an annual retainer, meeting fees and travel time allowances. Directors' compensation is reviewed at least every two years and changes, if any, are recommended to the Board.

While prior changes to Directors' compensation had resulted in modest adjustments in annual retainer and meeting fees, the Board's Director and Chairperson compensation framework had remained largely unchanged since CPPIB's first Board of Directors was established in 1999. The Board believed that continued incremental changes were not in CPPIB's best long-term interests.

Consequently, as described in CPPIB's fiscal 2016 Annual Report, the Board undertook an in-depth and extensive review of Directors' compensation in fiscal 2016 with a view to supporting the best long-term interests of CPPIB and its contributors and beneficiaries. The Board's objective was to identify a contemporary approach to Directors' compensation that would ensure CPPIB remains able to recruit and retain highly qualified Directors, from both Canada and around the world, who have the breadth of skills and business and investment expertise to effectively oversee an increasingly global and complex organization. The updated compensation structure is being implemented over two years, and began in April 2016. This structure will ensure that Directors are competitively compensated for their responsibilities, while remaining mindful that the organization is publicly purposed. CPPIB's Directors' Compensation Philosophy is as outlined below.

#### DIRECTORS' COMPENSATION PHILOSOPHY

Safeguarding the interests of CPP contributors and beneficiaries requires professional directors with the capabilities to ensure the effective stewardship and oversight of CPPIB. The Board maintains a compensation approach compatible with leading governance performance, the recruitment and retention of directors with extensive international experience and expertise in business, finance or investments, and reflects considerable time demands. An equitable balance between CPPIB's commercial activities and public purpose promotes the selection of individuals who will reinforce the organization's unique culture.

#### CPPIB DIRECTORS' COMPENSATION PAY PRINCIPLES

#### I. Pay Neutrality

#### Compensation alone should not attract or detract desirable candidates.

In reviewing the compensation of CPPIB Directors, the Board's objective must be to set a reasonable "threshold" level of compensation, which neutralizes compensation such that it is not a significant favourable or unfavourable influence on the decision of a candidate in joining the CPPIB Board.

#### II. Public Purpose

Canadian governments established CPPIB with a purpose to serve millions of contributors to the compulsory CPP program; Directors' compensation should reflect a purpose distinct from other commercial organizations oriented to profits and stock price.

While Directors' compensation should reflect the reality that both the workload and time commitment of a CPPIB Directorship, and the expertise and experience required, are comparable to private sector directorships, the total pay opportunity for CPPIB Directors should reflect our public purpose.

#### III. Time Commitment

#### The compensation structure should recognize the differential in time commitment among Directors.

The Board must contemplate and design a compensation structure that takes into account the fact that the CPPIB Board is a true 'working board' with significant time and travel requirements. Directors are expected to be continuously engaged on organizational matters well beyond preparing for, and participating in, frequent Board and Committee meetings. The structure should recognize the incremental time, travel and meeting commitments expected of each Director, Committee Chairs and the unique role of the Board Chairperson.

#### IV. Relative Benchmark

# CPPIB is a complex global investment management organization and is correctly considered a peer relative to other major financial institutions and large companies globally.

There is a highly competitive global market for top director talent and the Board must consider how candidates perceive the value proposition of being a CPPIB Director to recruit and retain top governance talent. For compensation benchmarking purposes, the Board should consider alternative directorship opportunities available to these candidates in three target talent markets: (I) pension funds and smaller Canadian asset managers; (2) TSX 100 Boards and larger Canadian asset managers; and (3) TSX 20 & U.S./U.K. asset managers and multinationals.

#### V. Appropriate Discount to Benchmark

A full market-based level of compensation is not appropriate given CPPIB's public purpose as described in Principle II. Upon review of the relative target talent markets for benchmarking purposes, an approximate 20% discount was applied.

The following table reflects changes to Directors' Compensation that were effective April 1, 2016 and will be completed in fiscal 2018.

#### **DIRECTOR COMPENSATION**

	F2016	Year One (F2017)	Year Two (F2018)
Annual Retainers			
Chairperson <sup>1</sup>	\$ 160,000	\$ 195,000	\$ 230,000
Director	\$ 35,000	\$ 50,000	\$ 65,000
Committee chair, additional retainer	\$ 12,500	\$ 15,000	\$ 15,000
Meeting Fees In-person meeting fee	\$ 1,500	\$ 1,750	\$ 2,000
Telephone meeting fee <sup>2</sup>	\$ 750	\$ 875	\$ 1,000
Travel Time Reimbursement Per Meeting One way travel is 1–3.5 hours		\$ 500	\$ 500
One-way travel is greater than 3.5 up to 6.5 hours or crossing an international border		\$ 1,500	\$ 1,500
One-way travel is greater than 6.5 hours		\$ 2,500	\$ 2,500

I. In the case of the Board Chairperson, compensation will continue to be a flat annual fee, recognizing the difference in the role of the Board Chairperson versus individual directors.

The Board Chairperson will however be eligible for travel time reimbursement for regularly scheduled meetings and meeting fees in the event the Chairperson serves on an ad hoc committee.

<sup>2.</sup> When the meeting is intended to be done by telephone and generally covers one or two topics.

Human

#### **BOARD ATTENDANCE**

There were six regularly scheduled Board and Investment Committee meetings in fiscal 2017. In addition, there were five regularly scheduled Audit Committee meetings, six regularly scheduled HRCC meetings, and six regularly scheduled Governance Committee meetings. The Investment Committee is composed of the full Board. In addition, there were a number of special Board or Committee meetings held to address specific issues or approvals, some of which were scheduled at times where all Directors were not able to attend given pre-existing commitments. The table below shows the number of meetings that each Director attended in fiscal 2017 relative to the number of meetings he or she could have attended.

Director	Board Meeting <sup>i</sup>	Investment Committee <sup>2</sup>	Audit Committee³	Governance Committee <sup>4</sup>	Resources and Compensation Committee (HRCC) <sup>5</sup>
Heather Munroe-Blum, Chairperson <sup>17</sup>	12/12	11/11	5/5	7/7	12/12
Ian Bourne, Chair of Governance Committee <sup>13</sup>	11/12	11/11	1/1	7/7	12/12
Robert Brooks <sup>15</sup>	12/12	11/11	5/5	7/7	3/3
Pierre Choquette <sup>6,15</sup>	12/12	10/10	4/5	7/7	4/5
Ashleigh Everett <sup>7</sup>	_	1/1	_	_	_
Michael Goldberg <sup>8</sup>	3/3	2/2	1/1	1/1	_
Tahira Hassan <sup>13</sup>	12/12	[]/[]	/	7/7	12/12
Nancy Hopkins <sup>9,14</sup>	10/12	10/10	5/5	1/1	11/12
Douglas Mahaffy <sup>14</sup>	12/12	10/11	_	1/1	11/12
John Montalbano <sup>10</sup>	-	1/1	_	_	_
Karen Sheriff, Chair of HRCC <sup>14</sup>	11/12	10/11	_	1/1	12/12
Jackson Tai <sup>11, 12, 15, 16</sup>	8/9	8/9	4/4	5/5	6/7
Kathleen Taylor <sup>14</sup>	11/12	10/11	5/5	1/1	11/12
Murray Wallace <sup>14</sup>	12/12	11/11	5/5	1/1	10/12
Jo Mark Zurel, Chair of Audit Committee 14,15	11/12	11/11	5/5	1/1	2/3

- 1. Seven in-person and five teleconference meetings.
- Seven in-person and four teleconference meetings.
- Five in-person meetings.
- Seven in-person meetings.
- 5. Six in-person and six teleconference meetings.
- 6. Ceased to be a Director effective February 12, 2017.
- Became a Director effective February 13, 2017.
- 8. Ceased to be a Director June 1, 2016.
- Ceased to be a Director effective February 12, 2017.
- 10. Became a Director effective February 13, 2017.
- II. Became a Director June I, 2016.
- 12. Appointed to the Audit and Governance Committees June 22, 2016.
- 13. Attended the Audit Committee by invitation.
- 14. Attended the Governance Committee by invitation.
- 15. Attended the HRCC Committee by invitation.
- 16. Mr. Tai attended all Board and committee meetings other than the June 2016 meetings that occurred immediately after his appointment, which Mr. Tai was unable to attend due to scheduling conflicts that arose prior to his appointment.
- 17. Although not a member of the Audit Committee or the HRCC, Dr. Munroe-Blum attended all Audit Committee and HRCC Committee meetings in her capacity as Chairperson.

During fiscal 2017, all members of the Board served on the ad hoc CEO succession committee. The purpose of this committee was to conduct a comprehensive search process to identify a successor CEO, considering both external and internal candidates. This committee's work ultimately resulted in the appointment of CPPIB's current CEO, Mark Machin.

In addition, the Board formed an ad hoc Director candidate search committee. Membership of the committee consisted of Mr. Bourne, Dr. Munroe-Blum, Ms. Hassan and Mr. Brooks. The purpose of the committee was to interview potential candidates and recommend candidates to the external nominating committee.

#### **DIRECTOR COMPENSATION FOR FISCAL 2017**

Based on the attendance and fee schedules, individual compensation for each of the Directors for fiscal 2017 was as follows:

		Board and		
	Annual	Committee		Total
	Retainer	Meeting Fees <sup>1</sup>	Travel Fees	Remuneration
Director	(\$)	(\$)	(\$)	(\$)
Heather Munroe-Blum, Chair of Board of Directors;				
and Chair of Investment Committee	195,000	16,625	12,500	224,125
Ian Bourne, Chair of Governance Committee;				
and Chair of Ad Hoc Domestic &				
International Director Search Committee	65,000	76,125	17,000	158,125
Robert Brooks	50,000	70,000	2,500	122,500
Pierre Choquette <sup>2</sup>	43,452	59,500	4,000	106,952
Ashleigh Everett <sup>3</sup>	6,548	875	_	7,423
Michael Goldberg <sup>4</sup>	8,333	16,625	4,000	28,958
Tahira Hassan	50,000	73,500	2,500	126,000
Nancy Hopkins <sup>2</sup>	43,452	59,500	5,000	107,952
Douglas Mahaffy	50,000	51,625	3,000	104,625
John Montalbano <sup>3</sup>	6,548	875	_	7,423
Karen Sheriff, Chair of Human Resources				
and Compensation Committee	65,000	57,750	2,500	125,250
Jackson Tai <sup>5</sup>	41,667	47,250	5,000	93,917
Kathleen Taylor	50,000	61,250	2,500	113,750
Murray Wallace	50,000	65,625	6,500	122,125
Jo Mark Zurel, Chair of Audit Committee	65,000	50,750	6,000	121,750
Total	790,000	707,875	73,000	1,570,875

I. These meeting fees include attendance at ad hoc committee meetings. There were two ad hoc committees of the Board of Directors in fiscal 2017, with one ad hoc committee having a subcommittee: an ad hoc committee for director searches, and an ad hoc committee for CEO succession with a subcommittee. There were four in-person and one teleconference meetings of the ad hoc committee for CEO succession. There were one in-person and one teleconference meetings of its subcommittee.

- 2. Pierre Choquette & Nancy Hopkins left the board February 12, 2017.
- 3. Ashleigh Everett and John Montalbano joined the board February 13, 2017.
- 4. Michael Goldberg left the board June 1, 2016.
- 5. Jackson Tai joined the Board June 1, 2016.

#### A CULTURE OF INTEGRITY AND ETHICAL CONDUCT

#### CONFLICT OF INTEREST PROCEDURES

Conflicts of interest were anticipated in CPPIB's legislation as a result of the need to recruit Directors with financial and investment experience and to engage employees with financial expertise. CPPIB's Code of Conduct was established to manage and, where possible, eliminate such conflicts. Stringent procedures under the Code are designed to ensure that Directors and employees act in the best interests of the organization. They are required to disclose any personal or business interests that might lead to a real, potential or perceived conflict of interest. Any involvement in relevant decision-making is prohibited should those circumstances arise. Further, Directors are expected to resign from the Board if they take on executive responsibilities with an organization whose objectives and mandates may be, or might reasonably be perceived to be, in conflict with CPPIB's objectives and mandate.

Our policy is that non-audit services provided by the external auditor must be approved by the Audit Committee. Firms that perform any internal or external audit services must also affirm that the provision of non-audit services does not impair their independence.

#### CODE OF CONDUCT

The Code of Conduct can be found on our website. It is designed to help create a corporate culture of trust, honesty and integrity. It deals with such matters as relations with suppliers, personal investments and confidentiality of proprietary information. For example, the Code of Conduct establishes strict pre-clearance procedures and restrictions for personal trading in securities.

It also sets out strict limits on the acceptance by Directors and employees of entertainment, gifts or special treatment that could create or appear to create a favoured position for actual or potential contractors or suppliers.

As part of the hiring process, new recruits are required to read and agree to comply with the Code of Conduct and related personal trading guidelines. Together, these set a high standard for addressing conflicts of interest and promoting ethical conduct. Directors and employees must reconfirm their compliance semi-annually and employees must complete an online module to confirm their understanding of the Code and ability to apply it in day-to-day decisions and actions.

CPPIB holds annual sessions for all employees on the same day across all offices to renew their commitment to the Guiding Principles of Integrity, Partnership and High Performance. These sessions will continue to be held annually to maintain the focus on this cornerstone of our culture.

When the Board hires or conducts annual performance reviews of the CEO, it considers the individual's leadership in promoting ethical conduct and championing a culture of Integrity, Partnership and High Performance. These factors are also relevant in the hiring and review of all employees.

To augment the Code of Conduct, the Board of Directors decided in 2003 to appoint an external conduct review advisor. This individual, currently the Honourable Frank lacobucci, is available to discuss Code of Conduct issues with Directors, employees and relevant third parties on a confidential basis.

## Board of Directors'



HEATHER MUNROE-BLUM, O.C., O.Q., Ph.D., F.R.S.C., CHAIRPERSON 18,2

Corporate Director and Public Policy Scholar Montreal, Quebec | Director since March 2010 | Appointed Chairperson effective October 2014. Served for over a decade as Principal and Vice Chancellor (President) of McGill University. Former Vice-President (Research and International Relations)

of the University of Toronto. Current Director of the Royal Bank of Canada (Chair of Corporate Governance), CGI Group, and the Gairdner Foundation (Vice-Chair). Currently a member of the Board of Stanford University's Center for Advanced Study in the Behavioral Sciences (CASBS), and the Trilateral Commission. Among others, served on the boards of Four Seasons Hotels, Alcan, Yellow Media Inc., and Hydro One (Ontario), and as a member of the President's Council of the New York Academy of Sciences, the Conference Board of Canada and the CD Howe Institute. Recipient of numerous domestic and international honorary degrees and awards of distinction. Officer of the Order of Canada, Officer of the Order of Quebec, and a Specially Elected Fellow of the Royal Society of Canada. Building on a distinguished career of clinical, academic and scientific achievements, qualifications include more than 25 years of senior administrative leadership concentrated in higher education, public policy, and, research and development; has extensive board experience as a director on executive, human resources and compensation, governance, investment, finance and risk committees in the corporate and not-for-profit sectors.



IAN A. BOURNE 1, 2\*, 4 Corporate Director | Calgary, Alberta | Director since April 2007.

Chair of Ballard Power Systems Inc., Director of Hydro One Limited, Wajax Corporation, and the Canadian Public Accountability Board. Former Chair of SNC-Lavalin Group Inc. and former Director of Canadian Oil Sands Limited. Retired Executive Vice

President and Chief Financial Officer of TransAlta Corporation, a power generation company, and President of TransAlta Power L.P. Over 35 years of experience in senior finance roles at TransAlta, General Electric and Canada Post Corporation. Former Director of TransAlta Power L.P. Qualifications include expertise in finance in major corporations, corporate governance and international experience in Paris and London.



ROBERT L. BROOKS 1, 2, 3 Corporate Director | Toronto, Ontario | Director since January 2009.

Former Vice-Chair and Group Treasurer of the Bank of Nova Scotia, the culmination of a 40-year career with the bank serving in a succession of senior investment banking, finance and treasury roles. Director of Integrated Asset Management

Corp. Director of Hamilton Capital Partners Inc. Former Director of numerous Scotiabank subsidiaries including Scotia Discount Brokerage, Inc., Scotia Life Insurance Company, ScotiaMcLeod, Inc. and Scotia Cassels Investment Counsel Ltd. Qualifications include more than 40 years of financial industry experience as a bank executive dealing with finance, risk management, pension fund asset mix, investment strategies, treasury functions and international operations.

#### Committee memberships

- I. Investment Committee
- 2. Governance Committee
- 3. Audit Committee
- 4. Human Resources and Compensation Committee
- 5. At the time of appointment
- Indicates Chair position
- 1. The biographies provided include all Directors who served on the Board in fiscal 2017. Mr. Choquette, Mr. Goldberg and Ms. Hopkins left the Board and their respective Board committees during fiscal 2017.



#### PIERRE CHOQUETTE 1, 2, 3

Corporate Director | Vancouver, British Columbia<sup>5</sup> | Director since February 2008. Left the Board effective February 2017, after his term expired.

Chief Executive Officer and Director of Methanex Corporation from 1994 to 2004, and Chair from 2002 until 2012. As CEO of Methanex, credited

with globalizing the company's asset base. Former President and Chief Operating Officer of Novacorp International and former President of Polysar Inc. Former Chair of Gennum Corporation. Former Director of Credit Lyonnais (Canada), Echo Bay Mines (U.S.), Stelco, Inc., TELUS Corporation, and Terasen, Inc. Qualifications include 25 years of senior management experience concentrated in the natural gas and chemical industries, international experience in Belgium and Switzerland, and extensive board experience, including chairing human resources and governance committees and serving on the full range of board committees.



#### ASHLEIGH EVERETT Corporate Executive, Corporate Director | Winnipeg, Manitoba | Director since February 2017.

President, Corporate Secretary and Director of Royal Canadian Securities Limited, the holding company of Royal Canadian Properties Limited, Domo Gasoline Corporation Ltd., and L'Eau-I Inc.

Former Director of The Bank of Nova Scotia (Chair of the Corporate Governance and Pension Committee). Former Director of Manitoba Telecom Services (Chair of the Governance and Nominating Committee). Current member of the Premiers Enterprise Team for the Province of Manitoba. Qualifications include extensive board experience as a director on executive and risk, governance and pension, and human resources and compensation committees in the public telecom and finance sectors, with experience in international risk and governance issues. Over 25 years of senior management experience in private property development and retail business operations.



#### MICHAEL GOLDBERG 1, 2, 3

Economist, Ph.D. | Vancouver, British Columbia | Director since February 2008. Left the Board in June 2016, after his term expired.

Scholar in Residence at the Asia Pacific Foundation of Canada, Senior Fellow, Institute of Asian Research, UBC, and Professor and Dean Emeritus of the University of British Columbia's Sauder

School of Business, and former Associate Vice President – International, totalling 37 years on the UBC faculty. Former Chief Academic Officer, Universitas 21 Global, an online graduate school initiated by Universitas 21, an international network of 12 research-intensive universities. Former member of the Deposit Insurance Advisory Committee to the federal Minister of Finance. Chair of the B.C. Workers' Compensation Board Investment Committee. Director, Canadian Institute for Global Strategic Partnerships. Director, Liberty Living. Former Chair of the Board, Surrey City Development Corporation. Former Director of Geovic Mining Corporation and Chair of the Human Resources and Compensation Committee. Director of Resource Works, a non-profit society to promote understanding of natural resources in the B.C. economy. Chair and Director of Vankic China Investment. Advisor to the CBD Global Equity Fund. Former Director of China Enterprises Limited, Redekop Properties Ltd., Vancouver Land Corporation, Catamaran Ferries International Inc., Imperial Parking Limited and Lend Lease Global Properties Fund, a Luxembourg-based global real estate fund. Ph.D. (Economics) from the University of California at Berkeley. Qualifications include expertise in global real estate investments and urban infrastructure and experience on boards as a director serving on audit and compensation committees.



TAHIRA HASSAN <sup>1,2,4</sup> Corporate Director | Toronto, Ontario | Director since February 2015.

Non-executive Director of Brambles Limited. Director of Ontario Shores Centre for Mental Health Sciences. Former Senior Vice-President at Nestlé SA with extensive international experience in transformative change including mergers &

acquisitions. Held executive positions such as Global Business Head for Nescafé Ready-to-Drink, Head of Global Supply Chain and President of Ice Cream in Canada. Served on several international management and joint venture boards. Past member of the Dean's advisory council of the Laurier School of Business & Economics at Wilfrid Laurier University. Certified Management Accountant of Canada. Fellow of the Chartered Institute of Management Accountants in the United Kingdom. Qualifications include more than 36 years of business and board expertise, in countries such as the United Kingdom, Switzerland and Pakistan, in addition to Canada.



NANCY HOPKINS <sup>1,3,4</sup>
Lawyer | Saskatoon, Saskatchewan |
Director since September 2008. Left the Board in February 2017, after her term expired.
Partner with the law firm McDougall Gauley LLP, specializing in business law and corporate governance. Received ICD.D designation in 2016. Director of GrowthWorks Commercialization

Fund Inc. (Chair of the Audit Committee), Capital Markets Authority Implementation Organization, CPA Canada, Canada West Foundation, and The Arthritis Society. Former Chair of the Saskatoon Airport Authority, former Chair of the Board of Governors of the University of Saskatchewan, former Chair of SGI Canada, a Saskatchewan Crown corporation, former Chair of the Saskatchewan Police Commission, and former Director of Cameco Corporation. Appointed Queen's Counsel in 1992. Qualifications include more than 30 years of legal experience with expertise in taxation, governance and information technology, experience in government interface and as a director in multiple stakeholder organizations.



#### DOUGLAS W. MAHAFFY <sup>1,4</sup> Corporate Director | Toronto, Ontario | Director since October 2009.

Retired Chairman and Chief Executive Officer of McLean Budden Ltd., an institutional money management firm. Former Managing Director and Head of Investment Banking (Ontario) of Merrill Lynch Canada Inc., and former Senior Vice-

President, Finance and Chief Financial Officer of Hudson's Bay Company. Current Director at Methanex Corporation and former Director at Stelco Inc. and Woodward's Ltd. Current Chairman at Drumlane Capital, a personally owned investment firm. Member of the Investment Committee at Sunnybrook Health Sciences Centre. Qualifications include more than 40 years of investment industry, general management, and mergers and acquisitions experience.



# JOHN MONTALBANO Corporate Director | Vancouver, British Columbia | Director since February 2017. Served as Chief Executive Officer of RBC Global Asset Management from 2008 to 2015. Previously President of Phillips. Hager & North Investment

Asset Management from 2008 to 2015. Previously President of Phillips, Hager & North Investment Management and Vice Chairman of RBC Wealth Management. Serves as Director on a number of

corporate boards, including Canalyst Financial Modeling Corporation, Wize Monkey Inc. and Eupraxia Pharmaceuticals Inc. Chartered Financial Analyst designation. Leslie Wong Fellow of the UBC Portfolio Management Foundation. Holds an Honorary Doctorate from Emily Carr University. Qualifications include nearly thirty years working in asset management and extensive senior management experience, including overseeing double-digit annual growth over seven years as CEO of the new RBC Global Asset Management, making it one of the 50 largest asset managers in the world.



# KAREN SHERIFF 1.4° Corporate Executive | Halifax, Nova Scotia<sup>5</sup> | Director since October 2012.

President and Chief Executive Officer of Q9 Networks from January 2015 through October 2016. Previously President and CEO of Bell Aliant; Chief Operating Officer, Bell Aliant. Prior to Bell Aliant, President of Small and Medium Business, Bell

Canada; Chief Marketing Officer, Bell Canada; Senior Vice President of Product Management and Development, Bell Canada, and a variety of assignments with Ameritech and United Airlines. Director of Westlet Airlines Ltd. and BCE Inc/Bell Canada. Past director of Bell Aliant Inc., Bell Aliant Regional Communications Inc., Bell Aliant Preferred Equity Inc., Aliant Inc. and Teknion Corporation. Chair of the Board of Trustees of the Gardiner Museum of Ceramic Arts from 2006 to 2016. Named one of Canada's top 25 Women of Influence for 2013 by Women of Influence Inc. In 2012, named Woman of the Year by Canadian Women in Communications (CWC). Named one of Atlantic Canada's Top 50 CEOs (Atlantic Business Magazine). Recognized as one of Canada's Top 100 Most Powerful Women three times and named to the Women's Executive Network Top 100 Women Hall of Fame. Qualifications include extensive senior management experience and expertise in strategicpriority setting of major corporations, including oversight of Bell Aliant's conversion back to a corporation from one of the largest income trusts in Canada and leading Bell Aliant's corporate transformation and industry leading fibre-to-the-home (FTTH) network build, the first of its kind in Canada.



#### JACKSON TAI <sup>1, 2, 3</sup> Corporate Director | Greenwich, Connecticut, USA | Director since June 2016.

Former Chief Executive Officer and Vice-Chairman of DBS Bank Ltd, and previously, President and Chief Operating Officer, and Chief Financial Officer. Served 25 years in the Investment Banking Division of J.P. Morgan & Co. Incorporated and

held executive positions such as Head of Japan Capital Markets; founder of the firm's global real estate investment banking; Senior Regional Officer for Asia Pacific; and Senior Regional Officer for the Western United States. Currently serves as a non-executive director for several boards, including HSBC Holdings PLC, Eli Lilly & Company, Royal Philips N.V. and Mastercard Incorporated. Currently serves as a trustee for Rensselaer Polytechnic Institute and as a Director of Metropolitan Opera. Qualifications include significant on-the-ground operating and governance experience in Asia, including in China, Singapore and Japan; a distinguished career in banking and capital markets with experience in investment and risk assessment; as well as global governance experience among active boards providing insights into U.S., EU and China.

# Board of Directors' (cont'd)



KATHLEEN TAYLOR, C.M., BA (Hons), JD, MBA 1, 3, 4 Global Executive, Corporate Director | Toronto, Ontario Director since October 2013.

Chair of the Board of the Royal Bank of Canada and Board member since 2001. Chair of the Board of the Hospital for Sick Children Foundation and a member of the Hospital's Board of Trustees. Director of Air Canada since May 2016. Director

of The Adecco Group since April 2015. Former President and Chief Executive Officer of Four Seasons Hotels and Resorts with over 24 years of international business experience. Prior to joining Four Seasons practiced corporate securities and competition law at Goodmans, LLP and spent a year on secondment at the Ontario Securities Commission. Recipient of the Order of Canada with the grade of member (2016). Recipient of an Honorary Doctor of Humane Letters from Mount Saint Vincent University (2015) and Honorary Doctorates of Laws from Trent University (2016) and York University (2014). Named the first woman Corporate Hotelier of the World by Hotels Magazine (2011) and was inducted to the Canadian Marketing Hall of Legends (2010). Recipient of the Inaugural Medal for Career Achievement from Hennick Centre for Business and Law (2010), and the Schulich School of Business Award for Outstanding Executive Leadership (2001). Ms. Taylor has an MBA from the Schulich School of Business, a law degree from Osgoode Hall Law School and a Bachelor of Arts (Honours) from the University of Toronto. Qualifications include over 25 years of global executive experience overseeing major strategic and operations initiatives, negotiating expertise and strong relationship management capabilities that drove the modern evolution of an iconic company with the support of almost 100 ownership and development partners around the world.



#### D. MURRAY WALLACE 1, 3, 4 Fellow, Institute of Chartered Accountants of Ontario | London, Ontario | Director since April 2007.

Executive Chairman of Financial Horizons Group, an MGA in the life insurance industry, since August I, 2014. Former Chief Executive Officer of Granite Global Solutions Inc., an insurance services company,

and former President of Axia NetMedia Corporation. Director of Echelon Financial Holdings Inc. Former Director of Axia NetMedia Corporation, Terravest Income Fund, Critical Outcome Technologies Inc., Western Surety Ltd., Ontario Hydro, London Insurance Group, IPSCO Inc., Crown Life Insurance Co. and Queen's University School of Business (Advisory Committee), among others. Former Deputy Minister of Finance and Deputy Minister to the Premier for the Government of Saskatchewan. Qualifications include expertise as a Chartered Accountant, senior-level financial experience from five years as President of Avco Financial Services Canada Ltd. and eight years in executive roles with companies in the Trilon Financial Group, experience in public pension plan management and interface with government.



#### JO MARK ZUREL 1, 3\*

Chartered Professional Accountant, Corporate Director | St. John's, Newfoundland and Labrador | Director since October 2012.

President/Owner of Stonebridge Capital Inc., a private investment company that invests in a variety of businesses, including Atlantic Canadian start-up and high-growth companies. From 1998 to 2006

served as Senior Vice-President and Chief Financial Officer of CHC Helicopter Corporation. Director of Highland Copper, Director of Major Drilling Group International Inc., Director of Propel ICT and Director of Fortis Inc. Current and recent volunteer activities include Chair of the Atlantic Provinces Economic Council, Chair of the St. John's Board of Trade, Chair of Junior Achievement of Newfoundland and Labrador, and Chair of a Red Cross Capital Campaign. In 2015, Jo Mark and his wife were named the Outstanding Philanthropists for Newfoundland and Labrador. Honoured as one of Canada's Top 40 under 40 in 2000. Qualifications include extensive investment industry and corporate director experience including as an active angel investor and as Director of the Institute of Corporate Directors (ICD) and member of the founding executive of the ICD's Newfoundland and Labrador affiliate.

#### Committee memberships

- I. Investment Committee
- 2. Governance Committee
- 3. Audit Committee
- 4. Human Resources and Compensation Committee
- 5. At the time of appointment
- Indicates Chair position
- 1. The biographies provided include all Directors who served on the Board in fiscal 2017. Mr. Choquette, Mr. Goldberg and Ms. Hopkins left the Board and their respective Board committees during fiscal 2017.

# CONSOLIDATED FINANCIAL STATEMENTS

# Management's Responsibility for Financial Reporting

The Financial Statements of Canada Pension Plan Investment Board (CPP Investment Board) have been prepared by Management and approved by the Board of Directors. Management is responsible for the integrity and reliability of the Financial Statements and the financial information contained within the Annual Report.

The Financial Statements have been prepared in accordance with International Financial Reporting Standards. The Financial Statements include certain amounts based on Management's judgments and best estimates where deemed appropriate. The significant accounting policies used are disclosed in note 1 to the Financial Statements. The financial information presented throughout the Annual Report is consistent with the Financial Statements.

CPP Investment Board develops and maintains systems of internal control and supporting procedures. The systems of internal control are designed to provide reasonable assurance that assets are safeguarded; that transactions are properly recorded, authorized and are in accordance with the *Canada Pension Plan Investment Board Act*, the accompanying regulations, the by-laws and investment policies of CPP Investment Board; and that there are no material misstatements in the Financial Statements or the financial information contained within the Annual Report. The internal control over financial reporting and disclosure controls and procedures are tested for both design and operational effectiveness as part of our CEO/CFO certification process as described on page 69 of Management's Discussion and Analysis in the 2017 Annual Report.

The internal control framework includes a strong corporate governance structure, an enterprise risk management framework that identifies, monitors and reports on key risks facing the organization, a code of conduct and conflict of interest procedures, and other policies, management authorities and procedures that guide decision-making. The controls also include the establishment of an organization structure that provides a well-defined division of responsibilities and accountability, the selection and training of qualified staff, and the communication of policies, management authorities and procedures throughout the organization. The systems of internal control are further supported by a compliance management system to monitor CPP Investment Board's compliance with legislation, policies, management authorities and procedures and by internal and external auditors who review and evaluate internal controls in accordance with their respective annual audit plans approved by the Audit Committee.

The Audit Committee assists the Board of Directors in discharging its responsibility to approve the annual Financial Statements. The Audit Committee, consisting of five independent directors, meets regularly with Management and the internal and external auditors to discuss the scope and findings of audits and other work they may be requested to perform from time to time, to review financial information and to discuss the adequacy of internal controls. The Audit Committee reviews and approves the annual Financial Statements and recommends them to the Board of Directors for approval.

CPP Investment Board's external auditor, Deloitte LLP, has conducted an independent examination of the Financial Statements in accordance with Canadian generally accepted auditing standards, performing such tests and other procedures as it considers necessary to express an opinion in its Independent Auditor's Report. The external auditor has full and unrestricted access to Management and the Audit Committee to discuss any findings related to the integrity and reliability of CPP Investment Board's financial reporting and the adequacy of internal control systems.

Mark G. Machin

President & Chief Executive Officer

Benita M. Warmbold

Senior Managing Director & Chief Financial Officer

Toronto, Ontario May 11, 2017

# Investment Certificate

The Canada Pension Plan Investment Board Act (the Act) requires that a certificate be signed by a director on behalf of the Board of Directors, stating that the investments of CPP Investment Board held during the year were in accordance with the Act and CPP Investment Board's investment policies, standards and procedures. Accordingly, the Investment Certificate follows.

The investments of CPP Investment Board, held during the year ended March 31, 2017, were in accordance with the Act and CPP Investment Board's investment policies, standards and procedures.

Chair of the Audit Committee on behalf of the Board of Directors

Toronto, Ontario May 11, 2017

# CONSOLIDATED FINANCIAL STATEMENTS

# Independent Auditor's Report

#### To the Board of Directors of Canada Pension Plan Investment Board

We have audited the accompanying Consolidated Financial Statements of Canada Pension Plan Investment Board, which comprise the Consolidated Balance Sheet as at March 31, 2017, and the Consolidated Statement of Comprehensive Income, Consolidated Statement of Changes in Net Assets and Consolidated Statement of Cash Flows for the year then ended, and a summary of significant accounting policies and other explanatory information.

#### Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these Consolidated Financial Statements in accordance with International Financial Reporting Standards, and for such internal control as management determines is necessary to enable the preparation of Consolidated Financial Statements that are free from material misstatement, whether due to fraud or error.

#### Auditor's Responsibility

Our responsibility is to express an opinion on these Consolidated Financial Statements based on our audit. We conducted our audit in accordance with Canadian generally accepted auditing standards. Those standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the Consolidated Financial Statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the Consolidated Financial Statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the Consolidated Financial Statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the Consolidated Financial Statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the Consolidated Financial Statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

#### Opinion

In our opinion, the Consolidated Financial Statements present fairly, in all material respects, the financial position of Canada Pension Plan Investment Board as at March 31, 2017, and its financial performance, changes in its net assets and its cash flows for the year then ended in accordance with International Financial Reporting Standards.

#### Report on Other Legal and Regulatory Requirements

Further, in our opinion, the transactions of Canada Pension Plan Investment Board that have come to our attention during our audit of the Consolidated Financial Statements have, in all significant respects, been in accordance with the *Canada Pension Plan Investment Board Act* (the Act) and the by-laws, as the case may be.

Further, in our opinion, the record of investments kept by Canada Pension Plan Investment Board's management pursuant to paragraph 39(I)(c) of the Act fairly presents, in all material respects, the information required by the Act.

Chartered Professional Accountants

Licensed Public Accountants

Osloite LLP

May 11, 2017

# Consolidated Balance Sheet

(CAD millions)	М	As at larch 31, 2017	<b>M</b>	As at 1arch 31, 2016
Assets				
Investments (note 2)	\$	377, <del>4</del> 77	\$	345,319
Amounts receivable from pending trades		3,234		2,627
Premises and equipment		348		356
Other assets		131		113
Total assets		381,190		348,415
Liabilities				
Investment liabilities (note 2)		60,200		65,379
Amounts payable from pending trades		3,631		3,431
Accounts payable and accrued liabilities		682		664
Total liabilities		64,513		69,474
Net assets	\$	316,677	\$	278,941
Net assets, represented by:				
Share capital (note 6)	\$	_	\$	_
Accumulated net income from operations		178,875		145,436
Accumulated net transfers from the Canada Pension Plan (note 7)		137,802		133,505
Net assets	\$	316,677	\$	278,941

The accompanying notes are an integral part of these Consolidated Financial Statements.

On behalf of the Board of Directors

Heather Munroe-Blum

Chairperson

Chair of the Audit Committee

# Consolidated Statement of Comprehensive Income

		For	the years ended
(CAD millions)	March 31, 2017		March 31, 2016
Investment income Investment management fees Transaction costs	\$ 36,273 (1,464) (447)	\$	11,774 (1,330) (437)
Net investment income (note 8)	\$ 34,362	\$	10,007
Personnel costs General operating expenses Professional services	625 244 54		594 231 51
Operating expenses (note 9)	923		876
Net income from operations	\$ 33,439	\$	9,131

# Consolidated Statement of Changes in Net Assets

(CAD millions)	Number of shares outstanding		Share capital	net	Accumulated transfers from the Canada Pension Plan	Α	ccumulated net income from operations		Total net assets
As at April 1, 2015	10	\$		\$	128.318	\$	136.305	\$	264.623
Total net income for the year	10	Ψ		Ψ	120,510	Ψ	9.131	Ψ	9.131
Canada Pension Plan transfers (note 7):							7,131		7,131
Transfers from the Canada Pension Plan			_		38.406		_		38.406
Transfers to the Canada Pension Plan			_		(33,219)		_		(33,219)
Balance at March 31, 2016	10	\$	_	\$	133,505	\$	145,436	\$	278,941
					,			<u>'</u>	
As at April 1, 2016	10	\$	_	\$	133,505	\$	145,436	\$	278,941
Total net income for the year			_		_		33,439		33,439
Canada Pension Plan transfers (note 7):									
Transfers from the Canada Pension Plan			_		39,517		_		39,517
Transfers to the Canada Pension Plan			_		(35,220)		_		(35,220)
Balance at March 31, 2017	10	\$	-	\$	137,802	\$	178,875	\$	316,677

# Consolidated Statement of Cash Flows

	For the years ended					
(CAD millions)	March 31, 2017	March 31, 2016				
Cash flows from operating activities						
Net income from operations	\$ 33,439	9,131				
Adjustments for non-cash items:						
Amortization of premises and equipment	30	30				
Effect of exchange rate changes on cash and cash equivalents	(16	b) 18				
Unrealized losses (gains) on debt financing liabilities	906	(1,011)				
Adjustments for net changes in operating assets and liabilities:						
(Increase) in investments	(21,684	(29,434)				
(Increase) decrease in pending trades receivable	(607	281				
(Increase) in other assets	(10	(22)				
(Decrease) increase in investment-related liabilities	(9,484	9,219				
Increase in debt financing liabilities	3,374	6,610				
Increase (decrease) in pending trades payable	200	(2,656)				
Increase in accounts payable and accrued liabilities	43	103				
Net cash flows from (used in) operating activities	6,191	(7,731)				
Cash flows from financing activities						
Transfers from the Canada Pension Plan	39,517	38,406				
Transfers to the Canada Pension Plan	(35,220	(33,219)				
Net cash flows provided by financing activities	4,297	5,187				
Cash flows from investing activities						
Dispositions of premises and equipment	I	3				
Acquisitions of premises and equipment	(23	(42)				
Net cash flows (used in) investing activities	(22	2) (39)				
Net increase (decrease) in cash and cash equivalents	10,466	(2,583)				
Effect of exchange rate changes on cash and cash equivalents	16	, ,				
Cash and cash equivalents at the beginning of the year	5,594	8,195				
Cash and cash equivalents at the end of the year	16,076	5,594				
Cash and cash equivalents at the end of the year are comprised of:						
Cash held for operating purposes <sup>1</sup>	68	60				
Cash and cash equivalents held for investment purposes <sup>2</sup>	16,008	5,534				
Total	\$ 16,076	\$ 5,594				

I. Presented as a component of Other assets on the Consolidated Balance Sheet.

<sup>2.</sup> Presented as a component of Investments on the Consolidated Balance Sheet and Money market securities on the Consolidated Schedule of Investment Portfolio.

# Consolidated Schedule of Investment Portfolio

The schedule below provides information on CPP Investment Board's investment assets and investment liabilities:

(CAD = III = = a)	М	As at 2017	M	As at arch 31, 2016
(CAD millions)	riaro	2017	1*16	arch 31, 2016
Equities (note 2a) Canada				
Public equities	\$	4,576	\$	4,413
Private equities	Ψ	4,048	Ψ	2,687
		8,624		7,100
Foreign developed markets				7,100
Public equities		93,905		64,461
Private equities		54,992		49,019
·		148,897		113,480
Emerging markets				<u> </u>
Public equities		19,208		12,612
Private equities		5,781		5,341
		24,989		17,953
Total equities		182,510		138,533
Fixed income (note 2b)				
Bonds		61,240		73,061
Other debt		19,764		26,144
Money market securities		19,408		16,732
Total fixed income		100,412		115,937
Absolute return strategies (note 2c)		19,371		17,034
Real assets (note 2d)				
Real estate		38,732		35,857
Infrastructure		27,899		20,373
Total real assets		66,631		56,230
Investment receivables				
Securities purchased under reverse repurchase agreements (note 2e)		5,207		12,199
Accrued interest		1,561		1,161
Derivative receivables (note 3)		1,495		4,060
Dividends receivable		290		165
Total investment receivables		8,553	Φ.	17,585
Total investments	\$	377,477	\$	345,319
Investment liabilities		(14.740)		(10.02()
Securities sold under repurchase agreements (note 2e) Securities sold short (note 2a and 2b)		(14,749)		(19,926)
Debt financing liabilities (note 2g)		(24,177) (19,873)		(27,371) (15,568)
Derivative liabilities (note 3)		(1,401)		(2,514)
Total investment liabilities		(60,200)		(65,379)
Amounts receivable from pending trades		3,234		2,627
Amounts payable from pending trades		(3,631)		(3,431)
Net investments	\$	316,880	\$	279,136
	·		-	· · · · · · · · · · · · · · · · · · ·

## Notes to the Consolidated Financial Statements

#### TABLE OF CONTENTS

Со	rporate information	105	8.	Net investment income	124
١.	Summary of significant accounting policies	105	9.	Operating expenses	125
2.	Fair value determination	107	10.	Collateral	125
3.	Derivative instruments	109	П.	Commitments	126
4.	Fair value measurement	112	12.	Related party transactions	126
5.	Investment risk management	118	13.	Guarantees	126
6.	Share capital	123	14.	Comparative figures	126
7.	Canada Pension Plan transfers	123			

### Corporate information

Canada Pension Plan Investment Board (CPP Investment Board) was established in December 1997 pursuant to the Canada Pension Plan Investment Board Act (the Act). CPP Investment Board is a federal Crown corporation, all of the shares of which are owned by Her Majesty the Queen in right of Canada. CPP Investment Board is responsible for assisting the Canada Pension Plan (the CPP) in meeting its obligations to contributors and beneficiaries under the legislation Canada Pension Plan. It is responsible for managing amounts that are transferred to it under Section 108.1 of the Canada Pension Plan in the best interests of CPP beneficiaries and contributors. CPP Investment Board received its first funds for investing purposes from the CPP in March 1999. CPP Investment Board's assets are to be invested in accordance with the Act, the regulations and the investment policies with a view to achieving a maximum rate of return without undue risk of loss, having regard to the factors that may affect the funding of the CPP and the ability of the CPP to meet its financial obligations on any given business day.

CPP Investment Board is exempt from Part I tax under paragraphs 149(1) (d) and 149(1) (d.2) of the Income Tax Act (Canada) on the basis that all of the shares of CPP Investment Board are owned by Her Majesty the Queen in right of Canada or by a corporation whose shares are owned by Her Majesty the Queen in right of Canada, respectively.

The Consolidated Financial Statements provide information on the net assets managed by CPP Investment Board and do not include the liabilities and other assets of the CPP.

CPP Investment Board's registered office is at One Queen Street East, Toronto, Ontario, Canada.

The Consolidated Financial Statements were approved by the Board of Directors and authorized for issue on May 11, 2017.

#### I. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

#### A. BASIS OF PRESENTATION

These Consolidated Financial Statements present the financial position and results of operations of CPP Investment Board in accordance with IFRS.

CPP Investment Board qualifies as an investment entity as it meets the following definition of an investment entity outlined in IFRS 10, Consolidated Financial Statements (IFRS 10):

- > Obtains funds from one or more investors for the purpose of providing those investor(s) with investment management services. In the case of CPP Investment Board, we have one investor (CPP), but we invest the funds for a wide group of investors being the beneficiaries of the CPP.
- > Commits to its investor(s) that its business purpose is to invest funds solely for returns from capital appreciation, investment income, or both.
- > Measures and evaluates the performance of substantially all of its investments on a fair value basis.

No significant judgments or assumptions were made in determining that CPP Investment Board meets the definition of an investment entity as defined in IFRS 10.

Certain comparative figures have been reclassified to conform to the current year's financial statement presentation (see note 14).

#### STATEMENT OF COMPLIANCE

The Consolidated Financial Statements of CPP Investment Board have been prepared in accordance with IFRS as issued by the International Accounting Standards Board and the requirements of the Act and the regulations of CPP Investment Board.

#### **B. SUBSIDIARIES**

CPP Investment Board is required to report the results of operations in accordance with IFRS 10. As a consequence, the Consolidated Financial Statements represent the results of operations of CPP Investment Board and its wholly owned subsidiaries that were created to provide investment-related services to support its operations. Operating subsidiaries of this nature include those that provide investment advisory services or subsidiaries that were created to provide financing to CPP Investment Board.

Subsidiaries that were created to structure and hold investments are investment holding companies and are not consolidated in these Consolidated Financial Statements but instead are measured and reported at fair value. Fair value for unconsolidated investment holding companies is based on the fair value of the underlying investments and investment liabilities held by the investment holding company together with its accumulated net income from operations. The determination of the fair value of the underlying investments and investment liabilities are based on the valuation techniques and related inputs outlined in note 2a to g.

#### C. FINANCIAL INSTRUMENTS

#### (i) CLASSIFICATION

CPP Investment Board classifies its financial assets and financial liabilities, in accordance with IFRS 9, Financial Instruments, as follows:

#### FINANCIAL ASSETS

Financial assets are either classified at fair value through profit or loss or at amortized cost. The classification depends on (a) the business model for managing the financial assets and (b) the cash flow characteristics of the financial assets. All financial assets through profit or loss are classified at fair value on the basis that they are part of a portfolio of financial assets which are managed and whose performance is evaluated on a fair value basis in accordance with investment strategies and risk management of the CPP Investment Board. Financial assets carried at amortized cost are accrued interest, dividends receivable and amounts receivable from pending trades.

#### FINANCIAL LIABILITIES

Financial liabilities are either classified at fair value through profit or loss or at amortized cost. The classification depends on (a) whether the financial liability meets the definition of held for trading or (b) upon initial recognition the financial liability is designated as at fair value through profit or loss.

A financial liability is classified as held for trading if:

- > It is acquired or incurred principally for the purpose of selling or repurchasing it in the near term;
- > On initial recognition it is part of a portfolio of identified financial instruments that are managed together and for which there is evidence of a recent actual pattern of shortterm profit taking; or
- > It is a derivative, except for a derivative that is a financial guarantee contract or a designated and effective hedging instrument.

Financial liabilities are classified at fair value through profit or loss on the basis that they meet the definition of held for trading. Financial liabilities classified at fair value through profit or loss include securities sold under repurchase agreements, securities sold short, debt financing liabilities and derivative liabilities. Amounts payable from pending trades, accounts payable and accrued liabilities are carried at amortized cost.

#### (ii) RECOGNITION

CPP Investment Board recognizes a financial asset or a financial liability when, and only when, it becomes a party to the contractual provisions of the instrument. Investments, investment receivables and investment liabilities are recorded on a trade date basis.

#### (iii) DERECOGNITION

Financial assets are derecognized when the contractual rights to receive the cash flows from the financial asset expire or where CPP Investment Board has transferred the financial asset and substantially all the risks and rewards of the asset or no longer retains control over the asset.

CPP Investment Board derecognizes a financial liability when the obligation under the liability is discharged, cancelled or expires.

#### (iv) INITIAL MEASUREMENT

Financial assets and financial liabilities are measured on initial recognition at fair value.

#### (v) SUBSEQUENT MEASUREMENT

After initial measurement, financial assets and financial liabilities classified at fair value through profit or loss are measured at fair value. Subsequent changes in the fair value of those financial assets and financial liabilities are recorded as a net gain (loss) on investments and included in investment income. Interest income and dividend income from such financial instruments are also included in investment income.

#### D. VALUATION OF INVESTMENTS AND **INVESTMENT LIABILITIES**

Investments and investment liabilities are stated at fair value. Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date.

In an active market, fair value is best evidenced by an independent guoted market price. In the absence of an active market, fair value is determined by valuation techniques that make maximum use of inputs observed from markets. See note 2a to g for more details about the determination of fair value.

#### E. INCOME RECOGNITION

Income from investments includes realized gains and losses from investments, changes in unrealized gains and losses on investments, dividend income and interest income. Dividend income is recognized on the ex-dividend date, which is when CPP Investment Board's right to receive the dividend has been established. Interest income is recognized using the effective interest rate method.

#### F. OFFSETTING FINANCIAL INSTRUMENTS

Financial assets and financial liabilities are offset and the net amount reported in the Consolidated Financial Statements if, and only if, there is a currently enforceable legal right to offset the recognized amounts and there is an intention to settle on a net basis, or to realize the asset and settle the liability simultaneously.

#### G. TRANSACTION COSTS

Transaction costs are incremental costs that are directly attributable to the acquisition or disposal of an investment. Transaction costs are expensed as incurred and included in net investment income (see note 8).

#### H. INVESTMENT MANAGEMENT FEES

Investment management fees, which include hedge fund performance fees, are paid to investment managers for externally managed investments. Investment management fees are expensed as incurred and included in net investment income (see note 8).

#### I. CASH EOUIVALENTS

Cash equivalents consist of short-term deposits with a maturity of 90 days or less.

# SECURITIES PURCHASED UNDER REVERSE REPURCHASE AGREEMENTS AND SOLD UNDER REPURCHASE AGREEMENTS

Securities purchased under reverse repurchase agreements represent the purchase of securities effected with a simultaneous agreement to sell them back at a specified price at a specified future date and are accounted for as an investment receivable. These securities are not recognized as an investment of CPP Investment Board. The fair value of securities to be resold under these reverse repurchase agreements is monitored and additional collateral is obtained, when appropriate, to protect against credit exposure (see note 10). In the event of counterparty default, CPP Investment Board has the right to liquidate the collateral held.

Securities sold under repurchase agreements are accounted for as collateralized borrowing because they represent the sale of securities with a simultaneous agreement to buy them back at a specified price at a specified future date. The securities sold continue to be recognized as an investment of CPP Investment Board with any changes in fair value recorded as net gain (loss) on investments and included in investment income.

Interest earned on reverse repurchase agreements and interest incurred on repurchase agreements is included in investment income.

#### K. SECURITIES SOLD SHORT

Securities sold short represent securities that are sold, but not owned, by CPP Investment Board. CPP Investment Board has an obligation to cover these short positions, which are accounted for as an investment liability based on the fair value of the securities sold. Collateral is pledged to the counterparty, when appropriate (see note 10). Interest and dividend expense on securities sold short are included in investment income.

# L. FUNCTIONAL AND PRESENTATION CURRENCY

CPP Investment Board's functional and presentation currency is the Canadian dollar, which is the currency of the primary economic environment in which it operates. CPP Investment Board's performance is evaluated and its liquidity is managed in Canadian dollars. Therefore, the Canadian dollar is considered as the currency that most faithfully represents the economic effects of the underlying transactions, events and conditions.

# M. FOREIGN CURRENCY TRANSLATION

Transactions, including purchases and sales of investments, income and expenses, are translated at the rate of exchange prevailing on the date of the transaction. Investments and monetary assets and liabilities denominated in foreign currencies are translated at the functional currency exchange rate at each balance sheet date. Non-monetary items that are measured in

terms of historical cost in a foreign currency are translated using the exchange rates as at the dates of the initial transactions. Foreign currency transaction gains and losses on financial instruments classified as at fair value through profit or loss are included in investment income in the Consolidated Statement of

#### N. CANADA PENSION PLAN TRANSFERS

Comprehensive Income.

Net amounts from the CPP are recorded as received.

# O. USE OF ESTIMATES, JUDGMENTS AND ASSUMPTIONS

The preparation of the Consolidated Financial Statements requires management to make estimates, judgments and assumptions that affect the amounts recognized for assets and liabilities, principally the valuation of financial instruments which are not actively traded. Uncertainty about these estimates, judgments and assumptions could result in outcomes that could require a material adjustment to the carrying amount of the assets or liabilities affected in the future.

#### 2. FAIR VALUE DETERMINATION

CPP Investment Board manages the following types of investments and investment liabilities and determines fair value as follows:

#### A. EQUITIES

- (i) Public equity investments are made directly or through funds, including hedge funds. As at March 31, 2017, public equities included fund investments with a fair value of \$8,022 million (March 31, 2016 - \$7,807 million).
  - Fair value for publicly traded equities, including equity short positions, is based on quoted market prices. Fair value for fund investments is generally based on the net asset value as reported by the external administrators or managers of the funds.
- (ii) Private equity investments are generally made directly or through ownership in limited partnership funds. As at March 31, 2017, private equities included direct investments with a fair value of \$29,965 million (March 31, 2016 – \$25,161 million).
  - The fair value for investments held directly is primarily determined using earnings multiples of comparable publicly traded companies or discounted cash flows. Significant inputs for these valuation methods include company-specific earnings before interest, taxes, depreciation and amortization (EBITDA), earnings multiples of comparable publicly traded companies, projected cash flows and discount rates using current market yields of instruments with similar characteristics. Recent market transactions, where available, are also used. In the case of investments held through a limited partnership fund, fair value is generally determined based on relevant information reported by the general partner using similar accepted industry valuation methods.

#### B. FIXED INCOME

- (i) Bonds consist of non-marketable and marketable bonds. Fair value for non-marketable Canadian Provincial Government bonds is calculated using discounted cash flows based on current market yields of instruments with similar characteristics. In the case of marketable bonds, including bond short positions, fair value is based on quoted prices or calculated using discounted cash flow based on benchmark yield curves and credit spreads pertaining to the issuer.
- (ii) Other debt consists of investments in direct private debt, assetbacked securities, intellectual property, royalties, distressed mortgage funds, private debt funds and hedge funds.

Fair value for direct investments in private debt and asset-backed securities is based on quoted market prices or broker quotes or recent market transactions, if available. Where the market price is not available, fair value is calculated using discounted cash flows based on significant inputs such as projected cash flows and discount rates using current market yields of instruments with similar characteristics.

In the case of intellectual property investments and royalty investments, fair value is primarily determined using discounted cash flows based on projected cash flows and discount rates using current market yields of instruments with similar characteristics.

Fair value for fund investments is generally based on the net asset value as reported by the external administrators or managers of

(iii) Money market securities consist of cash, term deposits, treasury bills, commercial paper and floating rate notes. Fair value is determined using cost, which, together with accrued interest income, approximates fair value due to the short-term or floating rate nature of these securities.

#### C. ABSOLUTE RETURN STRATEGIES

Absolute return strategies consist of investments in hedge funds and internally managed portfolios whose objective is to generate positive returns regardless of market conditions, that is, returns with a low correlation to broad market indices. The underlying securities of the funds and the internally managed portfolios could include, but are not limited to, equities, fixed income securities and derivatives.

Fair value for fund investments is generally based on the net asset value as reported by the external administrators or managers of the funds.

# D. REAL ASSETS

(i) CPP Investment Board obtains exposure to real estate through direct investments in privately held real estate and real estate funds. Private real estate investments are managed by investment managers primarily through co-ownership arrangements.

Fair value for private real estate investments is primarily determined using discounted cash flows based on various factors such as net operating income, discount rate and terminal capitalization rate.

- Fair value for real estate funds are generally based on the net asset value as reported by the external managers of the funds.
- (ii) Infrastructure investments are generally made directly, but can also occur through limited partnership funds.

Fair value for infrastructure investments is primarily determined using discounted cash flows based on significant inputs including projected cash flows and discount rates.

Fair value for investments held through limited partnership funds are generally based on the net asset value as reported by the external managers of the funds.

# E. SECURITIES PURCHASED UNDER REVERSE REPURCHASE AGREEMENTS AND SOLD UNDER REPURCHASE AGREEMENTS

Reverse repurchase and repurchase agreements are carried at the amounts at which the securities were initially acquired or sold, which, together with accrued interest income or expense, approximates fair value due to the short-term nature of these securities.

#### F. DERIVATIVE CONTRACTS

A derivative contract is a financial contract, the value of which is derived from the value of underlying assets, indices, interest rates, currency exchange rates or other market-based factors. Derivatives are transacted through regulated exchanges or negotiated in over-the-counter markets.

Notional amounts of derivative contracts represent the contractual amounts to which a rate or price is applied for computing the cash flows to be exchanged. The notional amounts are used to determine the gains/losses and fair value of the contracts.

The fair value of these contracts is reported as derivative receivables and derivative liabilities on the Consolidated Schedule of Investment Portfolio.

Fair value for exchange-traded derivatives, which includes futures, options and warrants, is based on quoted market prices. Fair value for over-the-counter derivatives, which includes swaps, options, forward contracts and warrants, is determined based on valuation techniques such as option pricing models, discounted cash flows and consensus pricing from independent brokers and/ or third-party vendors. Inputs used in these valuation techniques can include, but are not limited to, spot prices, price volatilities, currency exchange rates, interest rate curves and credit spreads. In determining fair value, consideration is also given to the credit risk of the counterparty.

# G. DEBT FINANCING LIABILITIES

Debt financing liabilities consist of commercial paper payable and term debt. Commercial paper payable is recorded at the amount originally issued, which, together with accrued interest expense, approximates fair value due to the short-term nature of these liabilities. Fair value for term debt is based on quoted market prices.

# H. UNCONSOLIDATED SUBSIDIARIES

Investments in unconsolidated subsidiaries include 282 wholly owned subsidiaries (March 31, 2016 - 259) incorporated to

hold investments primarily in private equities, debt, real estate and infrastructure. The 282 wholly owned subsidiaries are incorporated as follows, 129 in Canada (March 31, 2016 – 125), 49 in the United Kingdom (March 31, 2016 – 41), 29 in the British Virgin Islands (March 31, 2016 – 29), 23 in the United States (March 31, 2016 – 21), 21 in Australia (March 31, 2016 – 17) and 31 in other jurisdictions (March 31, 2016 – 26). Unconsolidated subsidiaries, that are not wholly owned but controlled, typically include those that were acquired by CPP Investment Board or indirectly acquired through its investment holding companies.

For investment holding companies it established, CPP Investment Board provides financial or other support to fund their day-today operations and investment activities under loan agreements or shareholder's resolutions as needed.

#### 3. DERIVATIVE INSTRUMENTS

#### A. TYPE OF DERIVATIVE INSTRUMENTS

CPP Investment Board uses the following types of derivative instruments:

#### **FUTURES AND FORWARDS**

Futures are standardized contracts transacted on an exchange, whereas forwards are customized over-the-counter contracts negotiated between counterparties. Futures contracts may be cash-settled or require physical delivery of the underlying asset. Examples of futures and forwards are described below:

Equity futures are contractual obligations to purchase or sell a specified quantity of an equity index, a basket of stocks, or a single stock at a predetermined price and date in the future.

Foreign exchange forwards are contractual obligations negotiated between counterparties to either purchase or sell a specified amount of foreign currencies at a predetermined price and date in the future.

Interest rate futures and forwards, including bond futures, are contractual obligations to purchase or sell a specified amount of an interest rate sensitive financial instrument(s) or index at a predetermined price and date in the future.

Commodity futures are contractual obligations to purchase or sell a specified quantity of a commodity, such as precious metals and energy-related products at a predetermined price and date in the future.

#### **SWAPS**

Swaps are over-the counter contracts between two parties to exchange a series of cash flows. Examples of swaps are described below:

Equity-based swaps include equity swaps, volatility swaps and variance swaps. Equity swaps are contracts where one counterparty agrees to pay or receive from the other, cash flows based on changes in the value of an equity index, a basket of stocks, or a single stock in exchange for a return based on a fixed or floating interest rate or the return on another instrument. Volatility and variance swaps are contracts where cash flows are exchanged based on the realized volatility or variance of an equity index, a basket of stocks, or a single stock compared to the fixed strike level specified in the contract, respectively.

Interest rate-related swaps include bond swaps, interest rate swaps and cross-currency interest rate swaps. Bond swaps are contracts in which counterparties exchange the return on a bond, or group of such instruments, for the return on a fixed or floating interest rate or the return on another instrument. Interest rate swaps are contracts where counterparties exchange cash flows based on different interest rates applied to a notional amount in a single currency, with no exchange of a notional amount. Cross-currency interest rate swaps involve the exchange of both interest and notional amounts in two different currencies.

Credit default swaps are contracts that provide credit protection against a specified credit event such as the default or bankruptcy of the underlying financial instrument (referenced asset). The purchaser (buyer) pays a premium to the writer (seller) in return for payment, which is contingent on a credit event affecting the referenced asset. Credit default swaps require the writer to compensate counterparties for the decline in value of the referenced asset as a result of the occurrence of a specified credit event. The notional amount represents the maximum amount payable to these counterparties under these written credit default swap contracts.

#### **OPTIONS AND WARRANTS**

Options are contractual agreements where the seller (writer) gives the purchaser the right, but not the obligation, to buy or sell a specified amount of an equity, currency, interest rate, credit, commodity or other financial instrument at or before a specified future date at a predetermined price. The purchaser pays a premium to the seller for this right. Options can be transacted in standardized amounts on regulated exchanges or customized in over-the-counter markets.

Call or put options may require the writer to sell or purchase the underlying asset at a fixed date or at any time within a fixed future period. Due to the nature of these contracts, CPP Investment Board cannot make a reasonable estimate of the potential maximum amount of future payments.

Warrants are transacted both over-the-counter and through exchanges where the issuer gives the purchaser the right, but not the obligation, to buy a specified quantity of stock of the issuer at or before a specified future date at a predetermined price.

# B. DERIVATIVE-RELATED RISK

The following are primary risks associated with derivatives:

#### MARKET RISK

Derivatives generate positive or negative value, as the value of underlying assets, indices, interest rates, currency exchange rates or other market-based factors change such that the previously contracted terms of the derivative transactions have become more or less favourable than what can be negotiated under current market conditions for contracts with the same terms and remaining period to expiry. The potential for derivatives to increase or decrease in value as a result of the foregoing factors is generally referred to as market risk.

The derivative-related market risk is a component of the total portfolio market risk, which is managed through the Risk/Return Accountability Framework described in note 5.

#### CREDIT RISK

Credit risk is the risk of a financial loss that occurs as a result of the failure of a counterparty to meet its obligations to CPP Investment Board. The maximum exposure to credit risk is represented by the positive fair value of the derivative instrument and is normally a small fraction of the contract's notional amount. Negotiated over-the-counter derivatives generally present greater credit exposure than exchange-traded contracts. Credit risk on exchange-traded contracts is limited because these transactions are executed on regulated exchanges,

each of which is associated with a well-capitalized clearing house that assumes the obligation of the writer of a contract and guarantees their performance.

CPP Investment Board limits credit risk on over-the-counter contracts through a variety of means, including dealing only with authorized counterparties that meet the minimum credit rating and limiting the maximum exposures to any individual counterparty, and the use of master netting agreements and collateral as discussed in note 5b.

# C. FAIR VALUE OF DERIVATIVE CONTRACTS

The fair value of derivative contracts is as follows:

#### FAIR VALUE OF DERIVATIVE CONTRACTS

		As at M	arch 31, 2017		As at M	larch 31, 2016
(CAD millions)	Positiv fair valu	-	Negative fair value	Positive fair value		Negative fair value
Equity contracts Futures Swaps	\$ 92	- \$ 3	- (717)	\$	\$	- (730)
Options:  Exchange-traded – purchased  Over-the-counter – purchased  Over-the-counter – written  Warrants		- - -	- - - -	8 2 - 2		_ _ (2) _
Total equity contracts	92	.4	(717)	1,304		(732)
Foreign exchange contracts Forwards Options Over-the-counter – purchased	35	7	(286)	2,353		(793)
Over-the-counter - written		_	-	_		(6)
Total foreign exchange contracts	35	7	(286)	2,377		(799)
Interest rate contracts Futures Forwards Swaps	14		- (117)	- - 341		(404)
Total interest rate contracts	[4	8	(117)	341		(404)
Credit contracts Purchased credit default swaps Written credit default swaps Options: Over-the-counter – purchased Over-the-counter – written	28	4 5 - -	(277) (4) 	86 454 13		(485) (73) – (16)
Total credit contracts	28	9	(281)	553		(574)
Commodity contracts Futures		_	()	9		(5)
Total commodity contracts		_	-	9		(5)
Subtotal	1,71	8	(1,401)	4.584		(2,514)
Less: Cash collateral received under derivative contracts	(22	.3)	-	(524)		-
Total	\$ 1,49	5 \$	(1,401)	\$ 4,060	\$	(2,514)

### D. NOTIONAL AMOUNT OF DERIVATIVES BY TERMS TO MATURITY

Notional amounts of derivative contracts represent the contractual amounts to which a rate or price is applied for computing the cash flows to be exchanged. The notional amounts are used to determine the gains/losses and fair value of the contracts. They are not recorded as assets or liabilities on the Consolidated Balance Sheet. Notional amounts do not necessarily represent the amount of potential market risk or credit risk arising from derivative contracts.

The terms to maturity of the notional amounts for derivative contracts is as follows:

# NOTIONAL AMOUNT OF DERIVATIVES BY TERMS TO MATURITY

							7	erms to matur	rity
							As at		s at
						M	larch 31, 2017	March 31, 20	016
	Wi	hin	I to 5	6	to 10	Over 10			
(CAD millions)	Ιy	ear	years		years	years	Total	То	otal
Equity contracts									
Futures	\$	- \$		\$	_	\$ -	\$ -	\$ 2,0	)7 I
Swaps	66,	19	24,894		_	_	91,013	83,7	709
Options:									
Exchange-traded – purchased		-	-		_	_	_		48
Exchange-traded – written		_	-		_	_	_		_
Over-the-counter – purchased		_	_		_	_	_	1	135
Over-the-counter – written		_	_		_	_	_		74
Warrants		7	9		32	_	48		77
Total equity contracts	66,	26	24,903		32	_	91,061	86,1	114
Foreign exchange contracts									
Forwards	56,	276	_		_	_	56,276	82,7	768
Options:									
Over-the-counter – purchased		_	_		_	_	_	4	415
Over-the-counter – written		_	_		_	_	_	3	361
Total foreign exchange contracts	56,	276	_		_	_	56,276	83,5	544
Interest rate contracts									
Futures	5,	33	65		_	_	5,398	72,3	364
Forwards	1,	333	_		_	_	1,833	3,5	537
Swaps	10,	39	13,053		1,134	403	24,629	30,0	)87
Total interest rate contracts	17,	205	13,118		1,134	403	31,860	105,9	988
Credit contracts									
Purchased credit default swaps	2,	867	9,500		13	_	11,880	31,8	314
Written credit default swaps	3,	228	9,464		28	_	12,720	31,6	579
Options:									
Over-the-counter – purchased	Ι,	00	_		_	_	1,600	2,1	140
Over-the-counter – written		33	_		_	_	133	1,8	342
Total credit contracts	7,	328	18,964		41	_	26,333	67,4	175
Commodity contracts									
Futures		_	_		_	_	_	2,8	305
Options:									
Exchange-traded – purchased		_	_		_	_	_		4
Exchange-traded – written		_	_		_	_	_		5
Total commodity contracts		-	_		_	_	_	2,8	314
Total	\$ 146,	935 \$	56,985	\$	1,207	\$ 403	\$ 205,530	\$ 345,9	

# 4. FAIR VALUE MEASUREMENT

# A. FAIR VALUE HIERARCHY

The following shows investments and investment liabilities recognized at fair value, analyzed between those whose fair value is based on:

- > Quoted prices in active markets for identical assets or liabilities (Level I);
- > Those involving inputs other than quoted prices included in Level I that are observable for the asset or liability, either directly (as prices) or indirectly (derived from prices) (Level 2); and
- > Those with inputs for the asset or liability that are not based on observable market data (non-observable inputs) (Level 3).

# FAIR VALUE HIERARCHY

As at March 31, 2017

				P	s at I	arch 31, 2017
(CAD millions)	Level I	Level 2		Level 3		Total
INVESTMENTS						
EQUITIES						
Canada						
Public equities	\$ 4,576	\$ _	\$	_	\$	4,576
Private equities		18		4,030		4,048
	4,576	18		4,030		8,624
Foreign developed markets						
Public equities <sup>1</sup>	87,129	6,700		76		93,905
Private equities		1,226		53,766		54,992
	87,129	7,926		53,842		148,897
Emerging markets						
Public equities <sup>1</sup>	17,493	1,562		153		19,208
Private equities	_			5,781		5,781
	17,493	1,562		5,934		24,989
TOTAL EQUITIES	109,198	9,506		63,806		182,510
FIXED INCOME		· · · · · · · · · · · · · · · · · · ·				
Bonds	36,987	24,253		_		61,240
Other debt	_	8,268		11,496		19,764
Money market securities	_	19,408		-		19,408
TOTAL FIXED INCOME	36,987	51,929		11,496		100,412
ABSOLUTE RETURN STRATEGIES <sup>1</sup>	_	17,835		1,536		19,371
REAL ASSETS						
Real estate	_	_		38,732		38,732
Infrastructure	_	-		27,899		27,899
TOTAL REAL ASSETS	_	_		66,631		66,631
INVESTMENT RECEIVABLES						
Securities purchased under reverse repurchase agreements	_	5,207		_		5,207
Accrued interest	_	1,561		_		1,561
Derivative receivables	_	1,494		I		1,495
Dividends receivable		290				290
TOTAL INVESTMENT RECEIVABLES	_	8,552		- 1		8,553
TOTAL INVESTMENTS	\$ 146,185	\$ 87,822	\$	143,470	\$	377,477
INVESTMENT LIABILITIES						
Securities sold under repurchase agreements	_	(14,749)		_		(14,749)
Securities sold short	(24,177)	_		-		(24,177)
Debt financing liabilities	(8,772)	(11,101)		_		(19,873)
Derivative liabilities		(1,401)		_		(1,401)
TOTAL INVESTMENT LIABILITIES	(32,949)	(27,251)				(60,200)
Amounts receivable from pending trades	_	3,234		_		3,234
Amounts payable from pending trades	_	(3,631)		_		(3,631)
NET INVESTMENTS	\$ 113,236	\$ 60,174	\$	143,470	\$	316,880
		 ,	-		-	,

					A	As at M	arch 31, 2016
(CAD millions)	Level I		Level 2		Level 3		Total
INVESTMENTS							
EQUITIES							
Canada							
Public equities \$	4,413	\$	_	\$	_	\$	4,413
Private equities			_		2,687		2,687
	4,413		_		2,687		7,100
Foreign developed markets							
Public equities <sup>1</sup>	57,808		6,653		_		64,461
Private equities	_		_		49,019		49,019
	57,808		6,653		49,019		113,480
Emerging markets							
Public equities <sup>1</sup>	10,683		1,759		170		12,612
Private equities	_		_		5,341		5,341
	10,683		1,759		5,511		17,953
TOTAL EQUITIES	72.904		8.412		57.217		138.533
FIXED INCOME	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,						
Bonds	44,749		28,312		_		73,061
Other debt	-		8.110		18.034		26.144
Money market securities	_		16,732		_		16,732
TOTAL FIXED INCOME	44,749		53,154		18,034		115,937
ABSOLUTE RETURN STRATEGIES <sup>1</sup>	-		15,720		1,314		17,034
REAL ASSETS			-		<u> </u>		
Real estate	_		_		35,857		35,857
Infrastructure	_		_		20,373		20,373
TOTAL REAL ASSETS	-		_		56,230		56,230
INVESTMENT RECEIVABLES							
Securities purchased under reverse repurchase agreements	_		12,199		_		12,199
Accrued interest	_		1,161		_		1,161
Derivative receivables	17		4,041		2		4,060
Dividends receivable	_		165		_		165
TOTAL INVESTMENT RECEIVABLES	17		17,566		2		17,585
TOTAL INVESTMENTS \$	117,670	\$	94,852	\$	132,797	\$	345,319
INVESTMENT LIABILITIES							
Securities sold under repurchase agreements	_		(19,926)		_		(19,926)
Securities sold short	(27,371)	)			_		(27,371)
Debt financing liabilities	(2,148)		(13,420)		_		(15,568)
Derivative liabilities	(4)		(2,510)		_		(2,514)
TOTAL INVESTMENT LIABILITIES	(29,523)		(35,856)		_		(65,379)
Amounts receivable from pending trades			2,627		_		2,627
Amounts payable from pending trades	_		(3,431)		_		(3,431)
NET INVESTMENTS \$	88,147	\$	58,192	\$	132,797	\$	279,136
	* *		•	•		-	, ,

I. Includes investments in funds.

#### B. TRANSFERS BETWEEN LEVEL I AND LEVEL 2

During the year ended March 31, 2017, there were \$2 million of transfers from Level 1 to Level 2 (March 31, 2016 – \$775 million) and \$239 million of transfers from Level 2 to Level I (March 31, 2016 - \$46 million). Transfers between Level I and Level 2 depend on the availability of quoted market prices in active markets and valuations using inputs other than quoted prices that are observable. These transfers are deemed to occur at the end of period values.

# C. LEVEL 3 RECONCILIATION

The following presents the reconciliations for investments included in Level 3 of the fair value hierarchy for the year ended March 31, 2017:

# RECONCILIATION OF CHANGES IN FAIR VALUE FOR LEVEL 3 INVESTMENTS

						For	the year ended $ h$	1arch 31, 2017
								Change in
								unrealized
		Gain (loss)						gains
		included					F	(losses) on
	Fair value	in net investment			Transfers	Transfers	Fair value as at	investments still held at
	as at	income			into	out of	March 31.	March 31,
(CAD millions)	April 1, 2016	(loss)	Purchases	Sale		Level 3 <sup>3</sup>	2017	20171,4
INVESTMENTS								
EQUITIES								
Canada								
Private equities	\$ 2,687	\$ 489	\$ 1,534	\$ (25	1) \$ 164	\$ (593)	\$ 4,030	\$ 379
	2,687	489	1,534	(25	1) 164	(593)	4,030	379
Foreign developed markets								
Public equities	_	(5)	98	(1	7) –		76	(4)
Private equities	49,019	6,489	10,983	(10,55	7) 402	(2,570)	53,766	2,247
	49,019	6,484	11,081	(10,57	4) 402	(2,570)	53,842	2,243
Emerging markets								
Public equities	170	10	_	(2	7) –	_	153	7
Private equities	5,341	791	1,330	(90	5) 7	(783)	5,781	429
	5,511	801	1,330	(93	2) 7	(783)	5,934	436
TOTAL EQUITIES	57,217	7,774	13,945	(11,75	7) 573	(3,946)	63,806	3,058
FIXED INCOME								
Other debt	18,034	14	8,155	(14,33	7) –	(370)	11,496	472
TOTAL FIXED INCOME	18,034	14	8,155	(14,33	7) –	(370)	11,496	472
ABSOLUTE RETURN STRATEGIES	1,314	222	-			_	1,536	222
REAL ASSETS								
Real estate	35,857	2,451	4,267	(3,84	3) –	_	38,732	1,379
Infrastructure	20,373	624	4,554	(46	1) 2,809	_	27,899	1,071
TOTAL REAL ASSETS	56,230	3,075	8,821	(4,30	4) 2,809		66,631	2,450
INVESTMENT RECEIVABLES								
Derivative receivables	2	(1)	_			_	1	_
TOTAL INVESTMENT RECEIVABLES	2	(1)	_			_	1	_
Total	\$ 132,797	\$ 11,084	\$ 30,921	\$ (30,39	8) \$ 3,382	\$ (4,316)	\$ 143,470	\$ 6,202

						For th	e yea	ar ended Ma	rch 3	1,2016
(CAD millions)	Fair value as at ril 1, 2015	Gain (loss) included in net investment income (loss)	Purchases	Sales <sup>2</sup>	Transfers into Level 3³	Transfers out of Level 3 <sup>3</sup>		Fair value as at March 31, 2016	(lo inve st	Change in nrealized gains osses) on estments ill held at March 31, 2016 <sup>1,4</sup>
INVESTMENTS										
EQUITIES Canada										
Private equities	\$ 2,601	\$ (261)	\$ 652	\$ (305)	\$ _	\$ _	\$	2,687	\$	(392)
	2,601	(261)	652	(305)	_	_		2,687		(392)
Foreign developed markets										
Private equities	39,637	3,762	15,753	(10,381)	266	(18)		49,019		(1,569)
	39,637	3,762	15,753	(10,381)	266	(18)		49,019		(1,569)
Emerging markets Public equities	_	_	_	_	170	_		170		_
Private equities	3,267	841	1,934	(701)	-	_		5,341		430
	3,267	841	1,934	(701)	170	_		5,511		430
TOTAL EQUITIES	45,505	4,342	18,339	(11,387)	436	(18)		57,217		(1,531)
FIXED INCOME										
Other debt	13,312	(365)	9,443	(4,479)	123	_		18,034		(176)
TOTAL FIXED INCOME	13,312	(365)	9,443	(4,479)	123	_		18,034		(176)
ABSOLUTE RETURN STRATEGIES	1,198	89	50	(6)		(17)		1,314		89
REAL ASSETS Real estate	29,656	2,964	5,534	(2,297)				35,857		2,446
Infrastructure	15,013	920	5,018	(578)	_	_		20,373		660
TOTAL REAL ASSETS	44,669	3,884	10,552	(2,875)	_	_		56,230		3,106
INVESTMENT RECEIVABLES										
Derivative receivables		(4)	6			_		2		(4)
TOTAL INVESTMENT RECEIVABLES	_	(4)	6	_	_	_		2		(4)
Total	\$ 104,684	\$ 7,946	\$ 38,390	\$ (18,747)	\$ 559	\$ (35)	\$	132,797	\$	1,484

I. Included in investment income.

During the years ended March 31, 2017 and March 31, 2016, transfers into and out of Level 3 were primarily due to changes in the availability of market observable inputs used to determine fair value.

<sup>2.</sup> Includes return of capital.

<sup>3.</sup> Transfers into and out of Level 3 are deemed to occur at the end of year values.

<sup>4.</sup> Includes the entire change in fair value for the year for those investments that were transferred into Level 3 during the year, and excludes the entire change in fair value for the year for those investments that were transferred out of Level 3 during the year.

#### D. LEVEL 3 - SIGNIFICANT UNOBSERVABLE INPUTS

The following presents fair values of the investments categorized within Level 3 of the fair value hierarchy, valuation techniques used to determine their fair values, ranges and weighted averages of unobservable inputs:

# VALUATION TECHNIQUES AND INPUTS USED IN THE FAIR VALUE MEASUREMENT OF LEVEL 3 INVESTMENTS

39

143,470

\$

Net asset value provided by Investment Manager

Option model

Market volatility

30.0%

30.0%

Fund investments<sup>2</sup>

Derivative receivables

Warrants

Total

As at March 31, 2017 Significant Primary valuation unobservable Range of Weighted Fair value techniques used input values<sup>3</sup> (CAD millions) inputs average3 Public equities Net asset value provided Fund investments<sup>2</sup> \$ 229 by Investment Manager Private equities Direct<sup>1,2</sup> 28,721 Earnings multiples of EBITDA multiple 8.0X-15.4X 11.2X comparable companies Discounted cash flow 12.0% 12.0% Discount rate Fund investments<sup>2</sup> 34,856 Net asset value provided by Investment Manager Other debt Direct private debt1 9,485 Discounted cash flow Discount rate 4.8%-19.6% 10.7% Valuation model by Asset-backed securities<sup>2</sup> 10 third-party pricing vendor Fund investments<sup>2</sup> 2,001 Net asset value provided by Investment Manager Absolute return strategies Fund investments<sup>2</sup> 1,536 Net asset value provided by Investment Manager Real estate 21,010 Discounted cash flow Discount rate Direct<sup>1,2</sup> 4.4%-14.3% 6.4% Terminal capitalization rate 3.5%-9.5% 5.3% 14,440 Net asset value provided by Investment Manager Fund investments<sup>2</sup> 3,282 Net asset value provided by Investment Manager Infrastructure Direct<sup>1</sup> 27,860 Discounted cash flow Discount rate 7.4%-15.8% 9.8%

As at March 31, 2016

s <sup>3</sup> average <sup>3</sup>	Range of input values <sup>3</sup> -  6.8X-13.2X	Significant unobservable inputs –	Primary valuation techniques used  Net asset value provided	Fair value	illions)
s <sup>3</sup> average <sup>3</sup>	input values³ —		techniques used	Fair value	
- – – – (	-	-			
	- 6.8X-13.2X	-	Net asset value provided		equities
	6.8X-13.2X		by Investment Manager	170	investments <sup>2</sup> \$
	6.8X-13.2X				equities
11.9%		EBITDA multiple	Earnings multiples of comparable companies	25,162	t <sup>1,2</sup>
	9.5%–23.4%	Discount rate	Discounted cash flows		
	_	-	Net asset value provided by Investment Manager	31,885	investments <sup>2</sup>
					debt
12.1%	6.7%–36.6%	Discount rate	Discounted cash flow	9,062	ct private debt <sup>1</sup>
	-	_	Valuation model by third-party pricing vendor	7,071	t-backed securities²
- –	_	_	Net asset value provided by Investment Manager	1,901	investments <sup>2</sup>
					te return strategies
- –	_	_	Net asset value provided by Investment Manager	1,314	investments <sup>2</sup>
					tate
6.4%	3.6%-14.8%	Discount rate	Discounted cash flow	23,472	ct <sup>1,2</sup>
5.3%	3.5%-9.5%	Terminal capitalization rate			
- –	_	-	Net asset value provided by Investment Manager	8,389	
- –	_	_	Net asset value provided by Investment Manager	3,996	investments <sup>2</sup>
					ucture
5 10.1%	7.5%-15.8%	Discount rate	Discounted cash flow	20,335	ct <sup>1</sup>
		_	Net asset value provided by Investment Manager	38	investments <sup>2</sup>
					ive receivables
30.0%	30.0%	Market volatility	Option model	2	rants
				132,797	\$
_	-	_	by Investment Manager  Net asset value provided by Investment Manager  Discounted cash flow  Net asset value provided by Investment Manager	3,996 20,335 38	ucture  ti  investments <sup>2</sup> ive receivables  rants

<sup>1.</sup> May include certain recently acquired investments held at cost, which approximates fair value.

Significant increases (decreases) in any of the above unobservable inputs would result in a significantly higher or lower fair value measurement. The interrelationship of significant unobservable inputs and fair value measurement for the most significant key inputs identified in the table above are as follows:

- > An increase (decrease) in the EBITDA multiple will result in a higher (lower) fair value.
- > An increase (decrease) in the discount rate and terminal capitalization rate will result in a lower (higher) fair value.

The fair value of these direct investments classified within Level 3 of the fair value hierarchy above are based on accepted industry valuation methods that may include the use of estimates

made by management, appraisers or both where significant judgment is required. By using valuation methods based on reasonable alternative assumptions, different fair values could result. With all other variables held constant the use of reasonable alternative assumptions would result in a decrease of \$2,600 million (March 31, 2016 - \$2,800 million) or increase of \$2,900 million (March 31, 2016 - \$3,000 million) in net assets. This sensitivity analysis excludes investments where fair values are provided by Investment Managers as the underlying assumptions used are not available to CPP Investment Board.

<sup>2.</sup> In certain cases, external valuations are prepared by a third party and hence, valuation information is not available.

<sup>3.</sup> The range of input values represents the highest and lowest inputs used to value the investments in a particular asset class. The weighted average of the input values is calculated based on the relative fair values of the investments within the asset class. The diversity of investments reported within each asset class, such as the geographic location and industry sector of the investments, may result in certain ranges of inputs being wide and unevenly distributed across the range.

#### 5. INVESTMENT RISK MANAGEMENT

CPP Investment Board and its unconsolidated investment holding companies manage the investment portfolio on behalf of the Canada Pension Plan (CPP Investment Portfolio). The CPP Investment Portfolio is exposed to a variety of financial risks. These risks include market risk, credit risk and liquidity risk. CPP Investment Board utilizes a total portfolio approach to risk management which considers all of the investment activities taken together, including those made through its unconsolidated investment holding companies. In the discussion that follows, any references to the investment activities and exposures to risk of CPP Investment Board also include those of its unconsolidated investment holding companies.

CPP Investment Board manages and mitigates financial risks through the Risk/Return Accountability Framework that is contained within the Risk Policy approved by the Board of Directors at least once every fiscal year. This policy contains risk limits and risk management provisions that govern investment decisions. It has been designed to achieve the mandate of CPP Investment Board, which is to invest its assets with a view to achieving a maximum rate of return, without undue risk of loss, having regard to the factors that may affect the funding of the CPP and the ability of the CPP to meet its financial obligations on any given business day.

Upper and Lower Absolute Risk Limits and the Absolute Risk Operating Range are included within the Risk/Return Accountability Framework, and these govern the amount of total investment risk that CPP Investment Board can take in the longterm CPP Investment Portfolio. CPP Investment Board monitors the absolute risk, the possible loss of value expressed in absolute dollar or percentage terms, in the CPP Investment Portfolio daily and reports risk exposures to the Board of Directors on at least a quarterly basis. Financial risk management, as well as the latest Risk/Return Accountability Framework, is discussed in greater detail on page 31 of the 2017 Annual Report.

#### A. MARKET RISK

Market risk is the risk that the fair value or future cash flows of an investment or investment liability will fluctuate because of changes in market prices and rates. As discussed previously, CPP Investment Board manages market risk through the Risk/Return Accountability Framework. This includes investing across a wide spectrum of asset classes and investment strategies to earn a diversified set of risk premiums at the total fund level, based on risk limits established in the risk policies. In addition, derivatives are used, where appropriate, to manage certain risk exposures.

Market risk comprises the following:

#### **EQUITY RISK**

The CPP Investment Portfolio invests in both publicly traded and private equities. Equity risk is the risk that the fair value or future cash flows will fluctuate because of changes in equity prices or volatilities. In terms of relative size, public equity risk is the most significant risk in the investment portfolio.

After taking into account derivative positions and with all other variables held constant, a 1% decrease/increase in the S&P 500 Index inclusive of correlation to other equity markets would result in a loss/profit of \$1,000 million (March 31, 2016 -\$642 million) on public equity investments.

#### **CURRENCY RISK**

The CPP Investment Portfolio is exposed to currency risk through holdings of investments or investment liabilities in various currencies. Fluctuations in the relative value of foreign currencies against the Canadian dollar can result in a positive or negative effect on the fair value or future cash flows of these investments and investment liabilities.

In Canadian dollars, the net currency exposures, after allocating foreign currency derivatives are as follows:

#### **CURRENCY RISK EXPOSURES**

	As at	March 31, 2017	As at	March 31, 2016 <sup>1</sup>
(CAD millions)	Net exposure	% of total	Net exposure	% of total
Currency				
United States dollar	\$ 122,750	39%	\$ 102,128	37%
Euro	34,003	11	30,364	11
Japanese yen	20,788	7	16,007	6
British pound sterling	18,839	6	14,959	5
Australian dollar	10,790	3	8,368	3
Hong Kong dollar	4,423	1	2,704	
Swiss franc	4,381	1	1,305	_
Indian rupee	3,586	1	2,239	
Chinese yuan	3,434	1	3,356	
Brazilian real	3,425	1	1,320	_
South Korean won	2,857	1	1,292	_
Chilean peso	2,387	1	2,370	
Other	8,424	3	8,880	4
Total foreign exposure	240,087	76	195,292	70
Canadian dollar	76,793	24	83,844	30
Total	\$ 316,880	100%	\$ 279,136	100%

I. Certain figures have been updated to conform to current year's financial statement presentation as described in note 14.

With all other variables and underlying values held constant, a 1% appreciation/depreciation of the Canadian dollar against all other currencies would result in a decrease/increase in net investments as follows:

#### CURRENCY RISK SENSITIVITY

	As at		As at
	March 31, 2017	Ma	ırch 31, 2016
	Decrease/		Decrease/
	Increase in		Increase in
(CAD millions)	Net Assets		Net Assets
Currency			
United States dollar	\$ 1,228	\$	1,021
Euro	340		304
Japanese yen	208		160
British pound sterling	188		150
Other	437		318
Total	\$ 2,401	\$	1,953

#### INTEREST RATE RISK

Interest rate risk is the risk that the fair value or future cash flows of an investment or investment-related liability will fluctuate because of changes in market interest rates. The CPP Investment Portfolio is exposed to interest rate risk primarily through holdings of fixed income securities, certain investment liabilities and interest rate derivative instruments.

With all other variables held constant, a I basis point increase/decrease in nominal interest rates would result in a decrease/increase in the value of investments directly impacted by interest rate changes as follows:

#### INTEREST RATE RISK SENSITIVITY

	As at	A	As at
	March 31, 2017	March 31, 2	2016
	Decrease/	Decr	ease/
	Increase in	Increas	se in
(CAD millions)	Net Assets	Net As	ssets
Maturity			
Within I year	\$ I	\$	2
I to 5 years	8		14
6 to 10 years	12		2
Over 10 years	31		28
Total	\$ 52	\$	46

<sup>1.</sup> This sensitivity only applies to small yield curve changes, more substantial (stress) shocks would impact the value of assets such as real estate and infrastructure but for 1 basis point moves their values remain unchanged.

CPPIB's exposure to various country's risk free rates are concentrated in North America with 56% (March 31, 2016 -68%) in Canada and 43% (March 31, 2016 – 32%) in the United States, and minor exposures to Europe, United Kingdom and Japan in both years.

# CREDIT SPREAD RISK

Credit spread is the difference in yield on certain securities compared to a comparable risk-free security (i.e., government issued) with the same maturity date. Credit spread risk is the risk that the fair value of these securities will fluctuate because of changes in credit spread. As at March 31, 2017, 84% (March 31, 2016 – 87%) of credit spread risk is concentrated in A or better rated debt, primarily in Canadian provincial bonds.

With all other variables held constant, a I basis point widening of the credit spreads would result in a decrease in net assets by \$33 million (March 31, 2016 – \$40 million).

#### OTHER PRICE RISK

Other price risk is the risk that the fair value or future cash flows of an investment will fluctuate because of changes in market prices arising from other risk factors such as commodity price risk, basis risk and volatility.

#### B. CREDIT RISK

Credit risk is the risk of financial loss due to a counterparty failing to meet its contractual obligations, or a reduction in the value of the assets due to a decline in the credit quality of the borrower, counterparty, guarantor or the assets (collateral) supporting the credit exposure. The CPP Investment Portfolio's credit risk exposure arises through its investment in debt securities and over-the-counter derivatives. The carrying amounts of these investments as presented in the Consolidated Schedule of Investment Portfolio represent the maximum direct credit risk exposure at the Balance Sheet date.

The fair value of debt securities and over-the-counter derivatives exposed to credit risk, by credit rating category and without taking account of any collateral held or other credit enhancements are as follows:

#### **CREDIT RISK EXPOSURES**

As at March 31, 2017

(CAD millions)	Bonds <sup>1</sup>	Money market securities	Reverse repurchase agreements <sup>1</sup>	counter	Other <sup>1,3</sup>	2	Total	% of total
Credit rating								
AAA	\$ 13,114	\$ 42	\$ -	\$ -	\$ _	\$	13,156	14%
AA	27,491	8,011	1,234	53	2		36,791	37
A	21,136	8,928	1,892	1,396	479		33,831	35
BBB	3	_	2,081	242	1,500		3,826	4
BB	6	_	_	_	3,041		3,047	3
В	_	_	_	_	5,718		5,718	6
CCC/D	_	-	-	-	1,061		1,061	I
Total	\$ 61,750	\$ 16,981	\$ 5,207	\$ 1,691	\$ 11,801	\$	97,430	100%

As at March 31, 2016

		Money market	re	Reverse epurchase	Over-the- counter				% of
(CAD millions)	Bonds	securities1	ag	greements <sup>1</sup>	derivatives	Other <sup>I,</sup>	2	Total	total
Credit rating									
AAA	\$ 14,887	\$ 75	\$	_	\$ _	\$ 4,954	\$	19,916	16%
AA	29,700	3,859		696	325	974		35,554	28
A	26,392	9,951		2,403	3,111	1,418		43,275	35
BBB	1,838	37		9,100	1,145	926		13,046	11
BB	673	_		_	_	3,904		4,577	4
В	94	_		_	_	5,397		5,491	4
CCC/D	_	_		_	_	1,930		1,930	2
Total	\$ 73,584	\$ 13,922	\$	12,199	\$ 4,581	\$ 19,503	\$	123,789	100%

I. Includes accrued interest.

In addition to the above, the CPP Investment Portfolio is indirectly exposed to credit risk on the underlying securities of fund investments.

# FINANCIAL INSTRUMENTS – RIGHTS OF OFFSET

Credit risk exposure is mitigated on certain financial assets and financial liabilities, which have conditional offset rights in the event of default, insolvency or bankruptcy. For securities

purchased under reverse repurchase agreements, securities sold under repurchase agreements and over-the-counter derivatives, collateral is collected from or pledged to counterparties to manage credit exposure (see note 10). In addition, in the event of default, amounts with a specific counterparty are settled on a net basis under master netting or similar arrangements, such as the Global Master Repurchase Agreement and the International Swaps and Derivatives Association Netting Agreements.

<sup>2.</sup> Includes direct investments in private debt and asset-backed securities.

The following presents the effect of conditional master netting and similar arrangements:

# RIGHTS OF OFFSET

As at March 31, 2017

							s: Amounts su etting or simil but no	ar ar			
(CAD millions)	arr	Gross amounts subject to netting angements	С	Less: Amounts offset in onsolidated Financial Statements	C	Net amount presented in the consolidated Schedule of Investment Portfolio	Subject to agreements		Securities and cash collateral	Net	exposure
Securities purchased under reverse repurchase agreements Derivative receivables	\$	5,207 1,718	\$	_ (223)	\$	5,207 1,495	\$ (4,347) (1,124)	\$	(860) (371)	\$	_ _
Total investment receivables	\$	6,925	\$	(223)	\$	6,702	\$ (5,471)	\$	(1,231)	\$	_
Securities sold under repurchase agreements Derivative liabilities	\$	(14,749) (1,401)	\$	- -	\$	(14,749) (1,401)	\$ 4,347 1,124	\$	10,402	\$	– (277)
Total investment payables	\$	(16,150)	\$	_	\$	(16,150)	\$ 5.471	\$	10.402	\$	(277)

As at March 31, 2016

Less: Amounts subject to master

							netting or simi	lar ar	rangements		
							but n	ot pr	esented net		
						Net amount					
				Less:		presented					
		Gross		Amounts		in the					
		amounts		offset in	(	Consolidated					
		subject	C	Consolidated		Schedule of			Securities		
		to netting		Financial		Investment	Subject to		and cash		
(CAD millions)	arr	angements		Statements		Portfolio	agreements		collateral <sup>1</sup>	Net	exposure
Securities purchased under											
reverse repurchase agreements	\$	12,199	\$	_	\$	12,199	\$ (9,391)	\$	(2,808)	\$	_
Derivative receivables		4,584		(524)		4,060	(2,301)		(1,129)		630
Total investment receivables	\$	16,783	\$	(524)	\$	16,259	\$ (11,692)	\$	(3,937)	\$	630
Securities sold under											
repurchase agreements	\$	(19,926)	\$	_	\$	(19,926)	\$ 9,391	\$	10,535	\$	_
Derivative liabilities		(2,514)		_		(2,514)	2,301		50		(163)
Total investment payables	\$	(22,440)	\$	_	\$	(22,440)	\$ 11,692	\$	10,585	\$	(163)

I. Securities and cash collateral exclude over-collateralization and collateral in transit. Refer to note 10 for the total amount of collateral.

#### C. ABSOLUTE RISK

CPP Investment Board primarily uses a Value at Risk (VaR) methodology to measure and monitor the absolute risk of the CPP Investment Portfolio. VaR is a statistical technique that is used to estimate the potential loss in value of an investment as a result of movements in market rates and prices over a specified time period and for a specified confidence level. The Absolute Risk measures encompass both market and credit risk.

VaR is valid under normal market conditions and does not specifically consider losses arising from severe market events. It also assumes that historical market data is a sound basis for estimating potential future losses. If future market conditions and interrelationships of interest rates, foreign exchange rates and other market prices differ significantly from those of the past, then the actual losses could materially differ from those estimated. The VaR measure provides an estimate of a single value in a distribution of potential losses that CPP Investment Portfolio could experience. It is not an estimate of the worstcase scenario.

Market VaR calculated by CPP Investment Board is estimated using a historical simulation method, evaluated at a 90% confidence level and scaled to a one-year holding period.

The significant assumptions used in this method are the incorporation of the most recent 10 years of weekly market returns and the use of public market proxies to represent investment returns on those investments that are valued with inputs based on non-observable market data (e.g. those for private real estate and private equities), both of which assumptions are reasonable for estimating VaR.

Credit VaR is estimated using a Monte Carlo simulation with a sufficient number of scenarios to simulate low probability credit events over a one-year investment horizon. Significant assumptions under this method include using a statistical process to determine asset correlations and using empirically based default and loss rates.

The Risk/Return Accountability Framework governs investment risk using total risk in absolute terms. In order to estimate Total Absolute Risk, both Market and Credit VaR are estimated using a similar confidence level and combined using an appropriate correlation factor approved by the Investment Planning Committee (IPC).

Risk is expressed using annual VaR, at a 90% confidence level, which indicates that one year in 10 the portfolio can be expected to lose at least the following amounts.

### **VALUE AT RISK**

	As a	t March 31, 2017	As	at March 31, 2016
		% of CPP		% of CPP
		Investment		Investment
(CAD millions)	VaR	Portfolio <sup>1</sup>	VaR	Portfolio <sup>1</sup>
CPP Reference Portfolio Total Absolute Risk <sup>2</sup>	\$ 37,394	11.8%	\$ 29,990	10.8%
CPP Investment Portfolio Total Absolute Risk 1,2	\$ 38,474	12.2%	\$ 31,338	11.2%
CPP Investment Portfolio Absolute Market Risk <sup>1</sup>	\$ 37,724	11.9%	\$ 30,610	11.0%
CPP Investment Portfolio Absolute Credit Risk <sup>1</sup>	\$ 1,703	0.5%	\$ 1,756	0.6%

<sup>1.</sup> Excludes certain assets where the market risk exposure is not monitored using VaR, such as the assets of the Cash for Benefits Portfolio, which is a separately managed short-term cash management program designed to facilitate monthly benefit payments by CPP.

#### STRESS TESTING

To complement the VaR measures CPP Investment Board examines the potential impact of exceptional but plausible adverse market events. Stress scenarios are based upon either forward-looking predictive views on events of imminent concern, such as the Brexit, or designed to mimic market moves from periods of historical distress, such as the Global Financial Crisis. A committee with representatives from each investment department meets regularly to identify probable market disruptions and to review underlying assumptions adopted in quantifying the impact of the specific stress scenario. Results are used to detect vulnerabilities in the portfolio and presented to senior management and the Board to affirm overall risk appetite.

# D. LIQUIDITY RISK

Liquidity risk is the risk of being unable to generate sufficient cash or its equivalent in a timely and cost-effective manner to meet investment commitments and investment liabilities as they come due. CPP Investment Board supplements its management of liquidity risk through its ability to raise funds through the issuance of commercial paper and term debt and transacting in securities sold under repurchase agreements.

CPP Investment Board also maintains \$6.2 billion (March 31, 2016 – \$1.5 billion) of unsecured credit facilities to meet potential liquidity requirements. As at March 31, 2017, the total amount drawn on the credit facilities is \$nil (March 31, 2016 – \$nil).

CPP Investment Board also has the ability to readily dispose of certain investments that are traded in an active market. These include a liquid portfolio of publicly traded equities, money market securities and marketable bonds.

CPP Investment Board is also exposed to liquidity risk through its obligations to remit cash to the CPP (see note 7). In order to manage associated liquidity risk certain assets are segregated and managed separately. Liquidity risk is also managed by investing these assets in liquid money market instruments with the primary objective of ensuring that the CPP has the necessary liquidity to meet benefit payment obligations on any business day.

Refer to note 5e below for investment liabilities terms to maturity.

<sup>2.</sup> Market and Credit Risk are combined using an assumed positive correlation under normal market conditions.

#### E. TERMS TO MATURITY

#### **INVESTMENTS**

							Terms	to maturity
					As at Mar	ch 31, 2017	As at Ma	rch 31, 2016
(CAD millions)	Within I year	I to 5 years	6 to 10 years	Over 10 years	Total	Average effective yield	Total	Average effective yield
Non-marketable bonds								
Canadian provincial government	\$ 173	\$ 5,293	\$ 6,518	\$ 11,903	\$ 23,887	2.9%	\$ 24,450	2.7%
Marketable bonds								
Government of Canada	_	3,746	934	1,192	5,872	1.6	6,387	1.4
Canadian provincial government	_	2,449	1,403	3,004	6,856	2.8	5,572	2.6
Canadian government								
corporations	_	701	455	387	1,543	2.4	1,983	2.3
Foreign government	_	10,538	7,842	4,338	22,718	2.3	30,807	1.6
Corporate bonds	8	237	70	49	364	2.6	3,862	2.2
Other debt								
Private debt <sup>1</sup>	39	4,352	3,097	726	8,214	9.7	8,793	10.6
Real estate private debt <sup>1</sup>	208	1,927	1,802	_	3,937	7.2	3,467	6.8
Asset-backed securities	_	2	_	8	10	4.4	7,071	1.7
Securities purchased under								
reverse repurchase agreements	5,207	_	-	_	5,207	0.6	12,199	0.0
Total	\$ 5,635	\$ 29,245	\$ 22,121	\$ 21,607	\$ 78,608	3.1%	\$ 104,591	2.5%

I. Represents direct investments.

# **INVESTMENT LIABILITIES**

												Terms	to maturity
	As at March 3						h 31, 2017		As at Mar	ch 31, 2016			
										Weighted			Weighted
										average			average
		Within		I to 5	6 to 10	Over	10		Fair	interest		Fair	interest
(CAD millions)		l year		years	years	yea	rs	Total	value	rate	Total	value	rate
Securities sold under													
repurchase agreements	\$	14,753	\$	- \$	_	\$	- \$	14,753	\$ 14,749	0.8%	\$ 19,919	\$ 19,926	0.5%
Securities sold short <sup>1,2</sup>		24,177		_	_		_	24,177	24,177	n/a	27,371	27,371	n/a
Debt financing liabilities													
Commercial													
paper payable		11,120		_	_		_	11,120	11,101	0.9	13,425	13,409	0.7
Term debt		_		8,783	_		-	8,783	8,772	1.8	2,149	2,159	1.2
Total	\$	50,050	\$	8,783 \$	_	\$	- \$	58,833	\$ 58,799	n/a	\$62,864	\$ 62,865	n/a

<sup>1.</sup> Considered repayable within one year based on the earliest period in which the counterparty could request payment under certain conditions.

# 6. SHARE CAPITAL

The issued and authorized share capital of CPP Investment Board is \$100 divided into 10 shares with a par value of \$10 each. The shares are owned by Her Majesty the Queen in right of Canada.

# 7. CANADA PENSION PLAN TRANSFERS

Pursuant to Section 108.1 of the Canada Pension Plan, the Act and an administrative agreement between Her Majesty the Queen in right of Canada and CPP Investment Board, amounts not required to meet specified obligations of the CPP are transferred weekly to CPP Investment Board. The funds originate from employer and employee contributions to the CPP.

CPP Investment Board remits cash to the CPP as required, including the periodic return, on at least a monthly basis, of funds required to meet CPP benefits and expenses.

The accumulated transfers from the CPP since inception are as follows:

CANADA PENSION PLAN TRANSFERS		As at	As at
(CAD millions)	Ma	ırch 31, 2017	March 31, 2016
Accumulated transfers from the Canada Pension Plan	\$	455,608	\$ 416,091
Accumulated transfers to the Canada Pension Plan		(317,806)	(282,586)
Accumulated net transfers from the Canada Pension Plan	\$	137,802	\$ 133,505

<sup>2.</sup> Includes equities sold short for which the average interest rate is not applicable.

#### 8. NET INVESTMENT INCOME

Net investment income is reported net of transaction costs and investment management fees, and is grouped based on the Strategic Portfolio asset class categories as discussed on page 28 of the 2017 Annual Report.

#### **NET INVESTMENT INCOME**

For the year ended March 31, 2017 Transaction Net investment Investment Investment income (loss) income (loss) (CAD millions) management fees<sup>2</sup> costs **EQUITIES** Canada \$ 2,275 \$ (9) 2,253 \$ (13)Foreign developed markets 22,138 21,557 (488)(93)3,202 (225)2,969 Emerging markets (8) 27,615 26,779 (726)(110)FIXED INCOME 440 440 Non-marketable bonds (452)Marketable bonds, Cash and Absolute return strategies<sup>3</sup> 386 (108)(174)Credit investments 2,585 2,413 (133)(39)3,411 2,679 (585)(147)**REAL ASSETS** (100)Real estate 3,314 (153)3,061 Infrastructure 1,714 (15)1,699 Other<sup>4</sup> 743 (66)677 5,771 (153)(181)5,437 Debt financing liabilities (524)(533)(9) Total \$ 36,273 \$ (1,464)\$ (447)\$ 34,362

For the year	ended	March	31,	20165
--------------	-------	-------	-----	-------

						141 (11 31, 2010
	Investment	Inve	stment	Transaction	N	et investment
(CAD millions)	income (loss) <sup>1</sup>	manageme	nt fees²	costs		income (loss)
EQUITIES						
Canada	\$ (1,202)	\$	(7)	\$ (33)	\$	(1,242)
Foreign developed markets	2,780		(445)	(195)		2,140
Emerging markets	61		(217)	(9)		(165)
	1,639		(669)	(237)		733
FIXED INCOME						
Non-marketable bonds	(80)		_	_		(80)
Marketable bonds, Cash and Absolute return strategies <sup>3</sup>	3,631		(419)	(71)		3,141
Credit investments	1,219		(110)	(20)		1,089
	4,770		(529)	(91)		4,150
REAL ASSETS						
Real estate	4,123		(131)	(48)		3,944
Infrastructure	1,764		(1)	(46)		1,717
Other <sup>4</sup>	74			(8)		66
	5,961		(132)	(102)		5,727
Debt financing liabilities	(596)		_	(7)		(603)
Total	\$ 11,774	\$	(1,330)	\$ (437)	\$	10,007

I. Includes realized gains and losses from investments, changes in unrealized gains and losses on investments, interest income, dividends, interest expense on the debt financing liabilities and other investment-related income and expenses.

<sup>2.</sup> Includes hedge fund performance fees of \$436 million (March 31, 2016 - \$395 million).

<sup>3,</sup> Absolute return strategies consist of investments in funds and internally managed portfolios.

<sup>4.</sup> Comprises agriculture and natural resources.

<sup>5.</sup> Certain comparative figures have been updated to be consistent with current year presentation.

#### 9. OPERATING EXPENSES

#### A. COMPENSATION OF KEY MANAGEMENT PERSONNEL

Key management personnel are defined as those persons having authority and responsibility for planning, directing and controlling the activities of CPP Investment Board, consisting of the Senior Management Team and the Board of Directors.

Compensation of key management personnel of CPP Investment Board is as follows:

		For	the years ended
(CAD millions)	March 31, 2017		March 31, 2016
Short-term employee compensation and benefits <sup>1</sup>	\$ 20	\$	20
Other long-term compensation and benefits <sup>1</sup>	18		11
Total	\$ 38	\$	31

I. Compensation is discussed in greater detail on page 70 of the 2017 Annual Report.

# B. GENERAL OPERATING EXPENSES

General operating expenses consist of the following:

			For the	e years ended
(CAD millions)	Marc	h 31, 2017	Ma	arch 31, 2016
Operational business services	\$	110	\$	104
Premises		41		39
Amortization of premises and equipment		30		30
Custodial fees		26		26
Travel and accommodation		17		15
Communications		8		5
Directors' remuneration		2		1
Other		10		11
Total	\$	244	\$	231

# C. PROFESSIONAL SERVICES

Professional services consist of the following:

		For	the years ended
(CAD millions)	March 31, 2017		March 31, 2016
Consulting	\$ 41	\$	39
Legal and tax services	10		8
External audit and audit-related services	3		4
Total	\$ 54	\$	51

I. Includes fees paid to the external auditor of CPP Investment Board for audit services of \$2.7 million (March 31, 2016 - \$2.4 million), audit-related services of \$0.3 million (March 31, 2016 - \$0.3 million), and the Special Examination carried out pursuant to the Act of \$nil (March 31, 2016 - \$1.3 million).

#### 10. COLLATERAL

Collateral transactions are conducted to support investment activities under terms and conditions that are common and customary to collateral arrangements. The net fair value of collateral held and pledged are as follows:

# COLLATERAL HELD AND PLEDGED

	As at	As at
(CAD millions)	March 31, 2017	March 31, 2016
Assets held as collateral on:		
Reverse repurchase agreements <sup>1</sup>	\$ 5,196	\$ 10,289
Over-the-counter derivative transactions	493	1,653
Other debt <sup>1</sup>	726	887
Assets pledged as collateral on:		
Repurchase agreements	(14,785)	(18,858)
Securities sold short	(27,575)	(23,508)
Over-the-counter derivative transactions	_	(50)
Private equities	(5,291)	(5,456)
Other debt	(3,957)	(3,670)
Total	\$ (45,193)	\$ (38,713)

<sup>1.</sup> The fair value of the collateral held that may be sold or repledged as at March 31, 2017 is \$6,192 million (March 31, 2016 – \$12,302 million). The fair value of collateral sold or repledged as at March 31, 2017 is \$2,677 million (March 31, 2016 – \$7,900 million).

#### II. COMMITMENTS

CPP Investment Board has entered into commitments related to the funding of investments. These commitments are generally payable on demand based on the funding needs of the investment subject to the terms and conditions of each agreement. As at March 31, 2017, the commitments totalled \$38.9 billion (March 31, 2016 – \$34.7 billion).

As at March 31, 2017, CPP Investment Board made lease and other commitments, which require future annual payments as follows:

#### LEASE AND OTHER COMMITMENTS

	As at		As at
(CAD millions)	March 31, 2017	March 31, 2016	
Within one year	\$ 37	\$	34
After one year but not more than five years	123		115
More than five years	46		67
Total	\$ 206	\$	216

#### 12. RELATED PARTY TRANSACTIONS

Related parties of CPP Investment Board include unconsolidated subsidiaries (see note 1b), joint ventures and associates and all related party investments are measured at fair value. Investments in joint ventures are those arrangements where CPP Investment Board has joint control. An associate is an entity which CPP Investment Board has the ability to exercise significant influence over decision making.

Related party transactions consist of investments and investment income primarily in private equities, debt, real estate and infrastructure and are presented in detail in the Consolidated Schedule of Investment Portfolio. Related party transactions are measured at fair value and will therefore have the same impact on net assets and net investment income as those investment transactions with unrelated parties.

Related party transactions with consolidated subsidiaries are eliminated upon consolidation.

# 13. GUARANTEES

# A. GUARANTEES

As part of certain investment transactions, CPP Investment Board agreed to guarantee, as at March 31, 2017, up to \$3.1 billion (March 31, 2016 – \$2.5 billion) to other counterparties in the event certain investee entities default under the terms of loan and other related agreements.

#### **B. INDEMNIFICATIONS**

CPP Investment Board provides indemnifications to its officers, directors, certain others and, in certain circumstances, to various counterparties and other entities. CPP Investment Board may be required to compensate these indemnified parties for costs incurred as a result of various contingencies such as changes in laws, regulations and litigation claims. The contingent nature of these indemnification agreements prevents CPP Investment Board from making a reasonable estimate of the maximum potential payments CPP Investment Board could be required to make. To date, CPP Investment Board has not received any material claims nor made any material payments pursuant to such indemnifications.

#### 14. COMPARATIVE FIGURES

Effective April 1, 2016, currency exposure relating to foreign exchange forward contracts are reflected based on the gross pay and receive amounts in their respective currencies, to reflect the underlying exposures to each currency (see note 5a). These were previously presented based on the fair value of the contract in its settlement currency.

This change in presentation of the currency exposure has been reflected in the comparative figures. Changes to the comparative figures resulted in an overall decrease in net foreign currency exposure of \$32,978 million as at March 31, 2016, with the main changes in exposures to the United States dollar, Euro, British pound sterling and Japanese yen.

# Ten-Year Review

For the year ended March 31										
(\$ billions)	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
CHANGE IN NET ASSETS <sup>1</sup>										
Net investment income	34.4	10.0	41.4	30.7	16.7	9.9	15.5	16.2	(23.6)	(0.3)
Operating expenses	(0.9)	(0.9)	(0.8)	(0.6)	(0.5)	(0.4)	(0.3)	(0.2)	(0.2)	(0.1)
Net contributions	4.3	5.2	4.9	5.7	5.5	3.9	5.4	6.1	6.6	6.5
Increase in net assets	37.8	14.3	45.5	35.8	21.7	13.4	20.6	22.1	(17.2)	6.1
As at March 31										
(\$ billions)	2017	2016 <sup>2</sup>	2015 <sup>2</sup>	20142	2013 <sup>2</sup>	20122	20112	20102	2009 <sup>2</sup>	2008 <sup>2</sup>
EQUITIES										
Canada	11.7	13.5	19.5	18.6	15.3	14.2	21.0	18.5	15.6	28.9
Foreign developed markets	140.0	112.6	98.0	75.6	64	56.7	50.8	46.2	40.4	47.5
Emerging market	23.7	17.6	15.5	12.6	12.4	10.6	7.6	6.5	4.6	0.7
FIXED INCOME										
Non-marketable bonds	24.0	24.4	25.8	23.4	24.4	23.6	21.8	22.7	23.2	23.8
Marketable bonds	58.2	32.5	34.4	31.0	28.5	21.2	19.7	17.1	9.3	11.1
Cash and Absolute										
Return Strategies <sup>3</sup>	(11.4)	16.8	18.6	17.4	8.6	2.5	2.3	1.7	(0.8)	_
External debt issuance	(19.9)	(15.6)	(9.9)	(9.7)	(9.5)	(2.4)	(1.4)	(1.3)	_	
CREDIT INVESTMENTS	17.5	17.0	17.2	11.4	8.6	8.8	6.1	3.5	1.8	1.1
REAL ASSETS										
Real estate	40.1	36.7	30.3	25.5	19.9	17.1	10.9	7.0	6.9	6.9
Infrastructure	24.3	21.3	15.2	13.3	11.2	9.5	9.5	5.8	4.6	2.8
Other	8.7	2.3		_	_		_	_	_	
INVESTMENT PORTFOLIO	316.9	279.1	264.6	219.1	183.4	161.8	148.3	127.7	105.6	122.8
CASH FOR BENEFITS PORTFOLIO	_	_	0.2	_	0.1	_	_	_	-	
NET INVESTMENTS <sup>4</sup>	316.9	279.1	264.8	219.1	183.5	161.8	148.3	127.7	105.6	122.8
PERFORMANCE OF INVESTMENT PORTFOLIO (%)										
Annual rate of return										
after all CPPIB costs <sup>5</sup>	11.8%	3.4%	18.3%	16.1%	9.8%	6.3%	11.6%	14.7%	(18.8%)	(0.4%)

I. Included in the CPP Fund are certain specified CPP assets which were previously administered by the federal government and transferred to CPP Investment Board over a period that began on May I, 2004 and ended on April I, 2007. Since April I, 1999, the CPP Fund has earned \$194.1 billion in investment income net of operating expenses, comprises \$178.9 billion from CPP Investment Board and \$15.2 billion from assets historically administered by the federal government.

<sup>2.</sup> Certain figures for fiscal 2016 have been updated to be consistent with the current year's presentation and fiscal 2008 to 2015 figures have not been updated.

<sup>3.</sup> Includes amounts receivable/payable from pending trades, dividends receivable and accrued interest.

<sup>4.</sup> Excludes non-investment assets such as premises and equipment and non-investment liabilities, totalling \$(0.2) billion for fiscal 2017. As a result, total assets will differ from the net asset figure of \$316.7 billion.

<sup>5.</sup> The rate of return reflects the performance of the Investment Portfolio, which excludes the Cash for Benefits Portfolio.

# Management Team (as at March 31, 2017)

Mark Machin

President & Chief Executive Officer

Senior Managing Director & Head of International, Head of Europe

Edwin Cass

Senior Managing Director & Chief Investment Strategist

Graeme Eadie

Senior Managing Director & Global Head of Real Assets

Shane Feeney

Senior Managing Director & Global Head of Private Investments

Pierre Lavallée

Senior Managing Director &

Global Head of Investment Partnerships

Senior Managing Director & Global Head of Public Affairs and Communications

Mary Sullivan

Senior Managing Director & Chief Talent Officer

Patrice Walch-Watson

Senior Managing Director,

General Counsel & Corporate Secretary

Benita Warmbold

Senior Managing Director & Chief Financial Officer

Eric Wetlaufer

Senior Managing Director &

Global Head of Public Market Investments

Nick Zelenczuk

Senior Managing Director & Chief Operations Officer

Mona Akiki

Managing Director, Human Resources

Tony Algar

Managing Director, Head of Treasury Services

Lisa Baiton

Managing Director, Head of Public Affairs

Peter Ballon

Managing Director, Global Head of Real Estate Investments

Susan Bellingham

Managing Director, Head of Business Planning & Enterprise Risk Management

Kevin Cunningham

Managing Director, Head of Global Capital Markets

Katie Daniels

Managing Director, Head of Compliance

Andrew Darling

Managing Director, Head of Investment Risk and Finance

Avik Dey

Managing Director, Head of Natural Resources

Andrew Edgell

Managing Director, Principal Credit Investments

Kristina Fanjoy

Managing Director, Head of Tax

Managing Director, Head of Funds, Secondaries & Co-Investments

Managing Director, Real Estate Investments

John Graham

Managing Director, Head of Principal

Credit Investments

Martin Healey

Managing Director, Head of Strategy, Real Assets

Christian Hensley

Managing Director, Relationship Investments

Managing Director, Natural Resources

Managing Director, Head of Infrastructure

Managing Director, Head of Infrastructure Americas

Bill Holland

Managing Director, Head of Investment Systems

James Hughes

Managing Director

Jim Hwang

Managing Director, Head of Portfolio Management

Managing Director, Active Fundamental Equities

Rocky Ieraci

Managing Director, Head of Investment Risk

Kathy lenkins

Managing Director, Head of Corporate Finance

lennifer Kerr

Managing Director, Head of Funds

Managing Director, Head of Investment Operations

Suyi Kim

Managing Director, Head of Asia Pacific

Neil King

Managing Director, Infrastructure

Scott Lawrence

Managing Director, Head of Fundamental Equities

Stephanie Leaist

Managing Director, Head of Sustainable Investing

Julie Levesque

Managing Director, Enterprise Systems

Rosemary Li-Houpt

Managing Director, Head of Talent Acquisition

lames Logush

Managing Director, Global Capital Markets

Alistair McGiven

Managing Director, Head of Strategic Tilting

Managing Director, Direct Private Equity

Derek Miners

Managing Director, Cash & Liquidity Group

Managing Director, Head of Portfolio Value Creation

Managing Director, Head of Information Technology

Managing Director, Head of Private Equity Asia

Andrea Orlandi

Managing Director,

Head of Real Estate Investments Europe

Jimmy Phua

Managing Director,

Head of Real Estate Investments Asia

Chris Pinkney

Managing Director, Global Capital Markets

Kathy Rohacek

Managing Director, Head of

Organizational Development

Chris Roper

Managing Director, Head of Cash & Liquidity Group

Managing Director, Head of Business Management

Karen Rowe

Managing Director, Head of Investment Finance

Barry Rowland

Managing Director, Head of Internal Audit

Geoffrey Rubin

Managing Director, Head of

Portfolio Construction & Research

Sandip Sahota

Managing Director, Head of Data Management

Ryan Selwood

Managing Director, Head of Direct Private Equity

Aleksandar Simic

Managing Director, Infrastructure Systems

**Geoffrey Souter** 

Managing Director, Head of Private Real Estate Debt

Hilary Spann Managing Director, Real Estate Investments

Rodolfo Spielmann

Managing Director, Head of Latin America

Cheryl Swan Managing Director, Head of Treasury,

Performance, Reporting and Tax

Managing Director, External Portfolio Management

Managing Director, Head of Quantitative Equities

Poul Winslow

Managing Director, Head of Thematic Investing & External Portfolio Management

Michael Woolhouse

Managing Director, Head of Secondaries &

Co-Investments



# HEAD OFFICE

#### Toronto

One Queen Street East, Suite 2500
Toronto, Ontario M5C 2W5
Canada
T: +1 416 868 4075
F: +1 416 868 8689
Toll Free: +1 866 557 9510

www.cppib.com

# INTERNATIONAL OFFICES

# Hong Kong

18/ F York House, The Landmark, 15 Queen's Road Central Central Hong Kong T: +852 3973 8788 F: +852 3973 8710

# London

40 Portman Square, 2nd Floor London WIH 6LT United Kingdom T: +44 20 3205 3500 F: +44 20 3205 3420

# Luxembourg

10-12 Boulevard F-D Roosevelt Luxembourg L-2450 T: +352 2747 1400 F: +352 2747 1480

# Mumbai

3 North Avenue, Maker Maxity, 5th Floor, Bandra Kurla Complex, Bandra (East) Mumbai 400051 India T: +91 22 615 14400

# New York

510 Madison Avenue, 15th Floor New York, NY 10022 U.S.A. T: +1 646 564 4900 F: +1 646 564 4980

#### São Paulo

Av. Brigadeiro Faria Lima, 4300 – 14° andar São Paulo – SP, 04538-132, Brasil T: +55 | 1 | 3216 | 5700 F: +55 | 1 | 3216 | 5780

# Sydney

Suite 5, Level 30, Governor Macquarie Tower I Farrer Place Sydney NSW 2000, Australia T: +61 2 8257 7777 F: +61 2 8257 7717

Ce rapport annuel est aussi disponible en français.