

Long-Term Strategic Asset Allocation

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Objective: to provide a stable long-term asset allocation strategy that responds to the individual investor's objectives and risk tolerance – ignoring short-term market gyrations.

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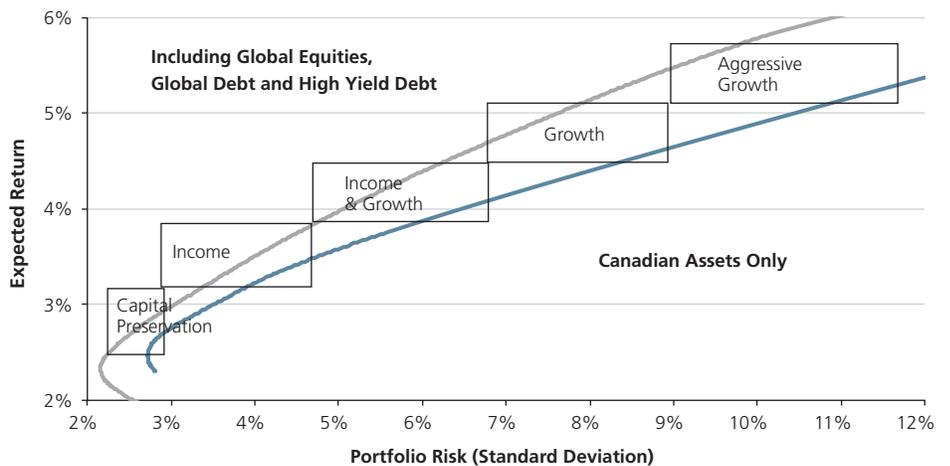
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Efficient Frontier (2017 Forward-looking Estimates)



Source: Bloomberg, CIBC Asset Management Inc.

Highlights

- The Long-Term Strategic Asset Allocation model is updated to incorporate forward-looking equity and debt estimates and our long-term views for the performance of the components of the strategic mix during the next 10-year period. We maintain a broadened asset allocation model that includes global debt and U.S. high-yield debt, multi-sector fixed income, infrastructure and real estate. These asset classes can improve the efficiency of the portfolios for each of the risk profiles.
- The Long-Term Strategic Asset Allocation is complemented with tactical views* provided by the CIBC Asset Management (CAM) Asset Allocation and Currency Management teams. Tactical highlights are as follows:
 - **Fixed Income Versus Equity:** CAM forecasts a neutral to cautiously positive stance on equities. Bonds are expected to underperform as monetary policy and bond yields continue to normalize.
 - **Equity:** Emerging Asian equity markets remain attractively valued and are preferred among global equity regions, especially following the post-U.S. election selloff.
 - **Fixed Income:** CAM projects a moderately bearish environment for bonds, marginally more favourable for Canadian versus U.S. bonds and corporates versus sovereigns.

*For the 12-month period beginning January 1, 2017

continued

- From a strategic asset allocation perspective, bonds remain an important part of a well-diversified portfolio, as they can help offset the risks inherent in equity returns. Investors who are concerned about the impact of rising rates on their bond holdings can increase their allocation to floating-rate debt and multi-sector fixed income alternatives to maintain a shorter duration.
- An allocation to global equities in a Canadian portfolio increases foreign exchange risk over the short run. However,

it has historically enhanced the risk-return tradeoff in the long run by both increasing returns and reducing risk. To account for the risks associated with foreign currency exposure, investors with a very short time horizon should consider global fixed income and equity products hedged to the Canadian dollar (CAD).

- Changing a long-term allocation to cater to short-term volatility or chasing recent winners may prevent investors from reaching their long-term financial goals.

Capital Market Review

Market Recap

Global equity markets as a whole had positive performance in 2016, although the pace of gains diverged across global regions. Many years of slow growth and above-average debt levels in the developed world led to the rise of populism, making political uncertainty a prevalent theme for 2016. The mid-year outcome of the U.K.'s Brexit referendum vote to leave the EU led to uncertainty about its potential impact on growth. Meanwhile, the unexpected outcome of the November U.S. presidential election resulted in a shift toward less risk-averse strategies. Equity performance in the Canadian market and other commodity-driven economies outperformed most developed countries in 2016. However, Canadian mutual fund investors were less bullish on equities, according to the Investment Funds Institute of Canada. They withdrew \$6 billion from equity products while adding \$9 billion to fixed income in 2016.

Despite moderate volatility, equity markets fully recovered by year-end, following expectations of higher inflation and growth in the U.S. This is expected to stem from expected fiscal stimulus under the Trump administration. Slow and steady growth in China has also been a key contributor to balancing the slower growth evident in many developed economies. During 2016, the MSCI World Index returned 8.2% in U.S. dollars (USD) and 4.4% in Canadian dollars (CAD). While performance of developed global equities (MSCI EAFE) was positive (+1.5% USD), the appreciation of the Canadian currency by 3.6% (versus USD)

over the year resulted in a negative return of -2.0% (CAD) for this index. Emerging markets declined -2.1% CAD during Q4 but still rose 7.7% CAD in 2016. This occurred despite rising yields, a stronger U.S. dollar and the potential negative impact on trade resulting from proposed protectionism in the U.S.

U.S. equities and the S&P 500 Index rose for the eighth consecutive year, supported by growth in major indicators, including consumer confidence and wage levels. These developments led the U.S. Federal Reserve (Fed) to raise the federal funds rate by 25 basis points in December, with indications that there could be another rate hike in the near term. The rising interest rate environment has had a negative impact on the performance of interest-sensitive sectors such as utilities, staples and real assets, while it has benefited performance within the financial, information technology and industrial sectors. Notwithstanding this divergence in performance between sectors, U.S. equities returned 12.0% USD and 8.1% CAD during the year.

Following considerable volatility, Japan's Nikkei 225 Index ended the year on an upward trend, returning 1.9% CAD and 2.4% in Japanese yen (JPY) for 2016. Fourth-quarter gains of 16.4% JPY support the view that a weaker yen, along with President Trump's proposed focus on infrastructure, may benefit Japanese transportation equipment and machinery companies. Potential financial deregulation is also expected to bolster profits for the Japanese financial sectors. Furthermore, the anticipated depreciation in the yen, as a result of diverging monetary policies between the two countries, should help earnings growth in Japan.

Equity Market Performance (Canadian Dollars)

Asset Class	Index	2016 (%)	2015 (%)	2014 (%)	2013 (%)	2012 (%)
Canadian Equity	S&P/TSX Composite Index	21.1	-8.3	10.5	13.0	7.2
U.S. Equity	S&P 500 Index	8.1	21.6	23.9	41.2	13.4
Global Equity	MSCI World Index	4.4	19.5	15.0	31.6	14.0
International Equity	MSCI EAFE Index	-2.0	19.5	4.1	35.9	15.3

Source: Bloomberg, CIBC Asset Management Inc.

During 2016, the Bank of Japan (BOJ) continued its aggressive monetary policy and, in February, cut interest rates to -0.1%. Given the impact of negative interest rates on the Japanese financial sector, the BOJ promised to keep ten-year bond yields near zero until inflation reaches its 2% target. The move was applauded by financial markets. The introduction of negative rates was implemented in addition to government bond purchases of 80 trillion JPY (\$664 billion USD) per year, which has been in effect since October 2014. Despite aggressive fiscal and monetary stimulus, the Japanese economy has struggled to gain traction and inflation remains far from the 2% target. The Japanese yen lost -0.4% against the Canadian dollar, detracting slightly from performance for Canadian investors holding Japanese securities.

The eurozone recovery continued at a slow pace in 2016. After three quarters of slow growth between 0.3-0.5%, Q4 saw improvements in employment, consumer confidence and business spending. Increased political uncertainty following the Brexit vote and ahead of upcoming elections in other European countries may continue to weigh on performance. The OECD's forecast growth for the eurozone remains low, at 1.5% for the next two years, while inflation is expected to remain below the European Central Bank (ECB) target of 2%¹. Yields started to turn positive following an April 2016 announcement of slower monetary easing. During 2016, the euro lost -6.3% against the Canadian dollar, further detracting from performance for Canadian investors holding European securities.

Canadian equities returned 21.1% in 2016 and outperformed global and U.S. equities, partly attributable to a recovery in oil and other commodity prices. Oil prices increased in Q4 2016 following OPEC's decision to cut production. The energy sector's recovery during Q3 2016 boosted GDP growth to 0.9%, following a technical recession that was partly attributable to the Fort McMurray wildfires. Energy and materials were the strongest-performing sectors in Canada, returning 41.2% and 35.5% respectively during 2016, followed by financials, which benefited from the prospect of rising yields. The multi-year depreciation in the Canadian dollar against the U.S. dollar boosted exports in November, resulting in the first trade surplus in two years.

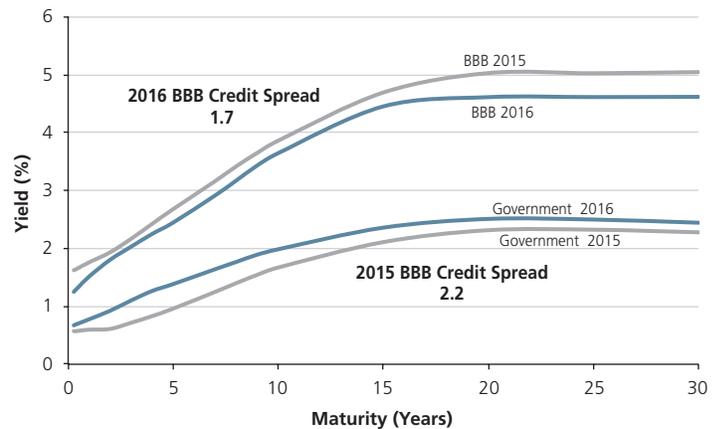
Bond Market Performance (Canadian Dollars)

Asset Class	Index	2016 (%)	2015 (%)	2014 (%)	2013 (%)	2012 (%)
Canadian Bond	FTSE TMX Bond Universe	1.7	3.5	8.8	-1.2	3.6
Canadian Government Bond	FTSE TMX Governments	0.9	3.8	9.3	-2.0	2.7
Canadian Corporate Bond	FTSE TMX Corporate Bond Universe	3.7	2.7	7.6	0.8	6.2
U.S. Bond	Barclays U.S. Aggregate Bond	-0.9	20.6	15.5	4.6	1.9
Global Bond	Citigroup World BIG Bond	-1.6	15.7	9.9	4.6	1.8
Canadian Cash	FTSE TMX 91-Day T-Bill	0.5	0.6	0.9	1.0	1.0

Source: PC Bond, Zephyr Style Advisor, CIBC Asset Management

The Canadian bond market turned negative in Q4 2016, with the FTSE TMX Universe Bond Index falling -3.4%, as rising Q4 yields for all maturities interrupted a long-term bull market for bonds. The 10-year Canadian government yield increased by 32 basis points during 2016. For corporate bonds, rising rates were offset by narrowing spreads caused by the rally in oil prices, which decreased the likelihood of default among commodity-related issuers. Canadian 10-year credit spreads declined from 219 basis points on December 31, 2015 to 166 basis points on December 31, 2016, as BBB-rated corporate spreads fell. As a result of narrowing credit spreads, the FTSE TMX Universe Government Index (+1.7%) underperformed the FTSE TMX Corporate Bond Universe Index (+3.7%) over 2016.

Canadian Government Yield Curve Changes

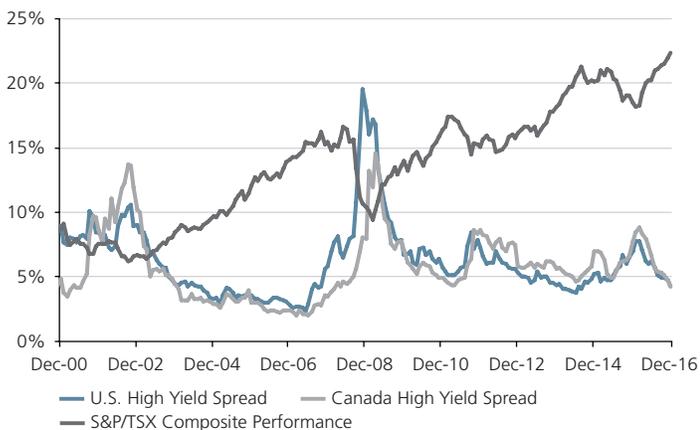


Source: Bloomberg, CIBC Asset Management Inc., as of December 31, 2016

Increased global inflation expectations and rising yields resulted in negative performance for global bonds during Q4 2016, despite overall positive local returns for the year. The Citigroup World Broad Investment Grade Bond Index returned -4.7% CAD (-6.6% USD) for the quarter and -1.6% CAD (1.95% USD) for the year, putting an end to eight years of positive returns in the global bond market.

U.S. bonds, represented by the Barclays U.S. Aggregate Bond Index, returned 2.6% USD (-0.9% CAD) for the year. The U.S. bond universe declined in Q4, with the Barclays U.S. Aggregate Index returning -3.0% in USD. The U.S. high-yield sector acted as a diversifier during Q4, returning 3.8% in USD. This asset class benefited from spreads that narrowed to levels observed prior to the 2008 financial crisis. This occurred as a result of improving performance in commodity-related sectors and positive sentiment for global growth, led by China's economy. U.S. high-yield spreads ended the year at 4.3% after peaking at 7.7% in January. With a positive correlation with U.S. high-yield spreads, the Canadian high-yield credit index spread² declined to 4.2% to end 2016. This is down from 7.7% at the end of 2015.

High-Yield Credit Spreads (Dec. 2000 – Dec. 2016)



Source: Bloomberg, CIBC Asset Management Inc.

Strategic Asset Allocation Methodology and Recommendation

The long-term asset allocation methodology applied in this paper is a two-step process. First, we developed broad models that capture the risk and return allocation for traditional asset classes like equities and debt. We then extended our global model to include global investment-grade debt as well as U.S. high-yield debt. The asset classes that comprise the global model are: Canadian money markets, Canadian equities, global equities, Canadian fixed income, global fixed income and U.S. high-yield debt.³

Secondly, we further extended the asset allocation models to include a broader asset mix, which is expected to help improve risk-adjusted returns. In addition to the components of the global model, we included alternative investments such as infrastructure, real estate and multi-sector fixed income.

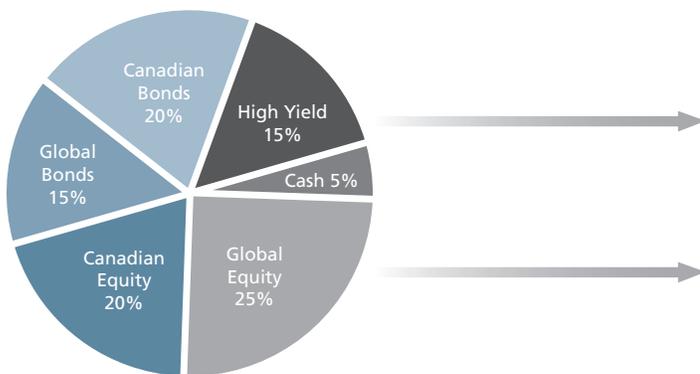
Benefits of Alternative Asset Classes and Multi Sector Fixed Income (MSFI)

We have complemented the broad debt and equity asset classes with a non-investment grade (i.e. high-yield) debt component. As a hybrid asset class with both debt and equity characteristics, high-yield debt provides diversification benefits to a balanced portfolio. It offers excess interest rate spreads versus investment-grade issuers to compensate investors for the additional risk taken on when investing in these securities.

Strategic Asset Allocation Methodology

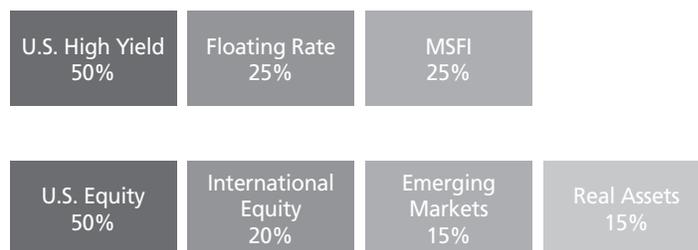
Step 1

Asset allocation based on broad asset classes



Step 2

Asset allocation recommendation for High Yield Debt and Global Equity exposure



High Yield

High-yield credit spreads are a function of the issuer's credit quality and are impacted by the performance of a company's fundamentals. Divergence in credit spreads between high-yield and investment-grade debt reduces the correlation between these two asset classes, but has the opposite effect for high-yield's correlation versus equities. The correlation of high-yield debt to equities is low but still positive, and increases in times of crisis due to the impact of deteriorating issuer fundamentals on both spreads and equities. As such, high-yield debt does not provide the much-needed diversification benefits of bonds in bear markets, and should not be considered a direct replacement for traditional bonds.

In addition to the credit performance, the diversification benefits of high-yield versus investment-grade debt are also attributed to the shorter duration of the asset class compared to non-floating fixed income alternatives. As an example, the average duration for the Citigroup U.S. High Yield Index is 4.3 years, considerably shorter than the 7-year average duration of the Barclays Investment Grade Bond Index. The lower the duration of the asset class, the lower its sensitivity is to interest rate movements; as such, high-yield debt should be less sensitive in a rising-rate environment.

Alternative Assets

Our proposed allocation to alternative asset classes is comprised of infrastructure, real estate and a multi-sector fixed income strategy. Adding these asset classes causes the efficient frontier to shift higher, increasing the long-term expected return with less risk (as measured by standard deviation).

The main reasons for adding infrastructure to the portfolio are: 1) the additional yield it provides versus traditional fixed income securities, and 2) the lower risk it exhibits versus equities. Infrastructure has a low, but positive, correlation to debt and is also positively correlated to equities. Regulated infrastructure provides the benefits of stable cash flows and long-term returns that are highly correlated to economic growth. While the Dow Jones Brookfield Global Infrastructure Index has returned an annualized 10.8% in CAD since 2003, rising interest rates during Q4 2016 resulted in a quarterly loss of -3.3%. This was not unexpected given infrastructure's correlation to debt and its elevated valuation, which may decline in the short term. In the long run, we believe that the performance of infrastructure will be impacted by a number of uncorrelated factors. Slow but steady economic growth will positively impact growth in more cyclical sectors, while longer-dated cash flows will negatively impact regulated sectors in a rising rate environment. For regulated sectors, increasing inflation will partially offset declining valuations due to revenues which are correlated to country-specific inflation. Our 10-year expected returns for this asset class are lower than broad equities, but remain positive.

Investment in real estate also provides the benefits of potential growth and high-dividend income streams. Dividends in real estate typically come in the form of relatively stable rents paid to real estate investment trust (REIT) companies. REITs act as diversifiers to the broad equity markets due to their low correlation with equities. Notwithstanding, we have witnessed that REITs can experience severe downturns such as during the 2008 financial crisis. As such, the volatility of a REIT portfolio is comparable to the volatility of a broader equity index such as the MSCI World Index. The addition of REITs and infrastructure to the portfolio would broaden the asset mix and improve its risk/return profile.

The multi-sector fixed income component focuses on incorporating a wide range of fixed income securities with the goal of minimizing risk, while producing sufficient yield to meet return objectives. A multi-sector portfolio adds value through tactical allocation between a number of fixed income instruments such as global government and agency bonds, money markets, corporate investment-grade and high-yield debt, asset-backed securities, mortgage-backed securities and local and U.S. dollar-denominated emerging market debt. Tactical allocation to multiple fixed income assets has been shown to lower volatility relative to individual asset classes like high-yield or emerging-market debt.⁴

Long-Term Capital Market Assumptions

The strategic allocation methodology is based on forward-looking estimates for 10-year returns. We believe that longer-term, forward-looking estimates best capture the current and potential global economic and financial environment.

Financial markets are filled with extreme historical situations, such as the 2008 financial crisis, that challenge the ability to make predictions based on past events. Empirical evidence in strategic allocation research has shown that forecasts based on extrapolations of past performance have resulted in misleading estimates. A study by the C.D. Howe Institute, using data since 1963, shows that the correlation of historical to realized returns for the S&P/TSX Index is highly negative (-63%), with high volatility (6%) in return differentials. During the same period, forward-looking estimates had a high (55%) correlation to realized returns, with lower volatility (4.2%) in the difference of returns. A similar comparison was done for bond returns, where the ability of forward-looking returns to accurately forecast realized performance was considerably higher, resulting in an 85% correlation between the two.⁵

Equity returns are estimated by adding the forecast's equity return components:



The components are calculated based on the following parameters:

- Dividend yield represents the dividend income return produced by the benchmark index.
- Earnings growth is measured by the sum of the inflation estimate⁶ and the OECD forecast real growth rates for the region/country of the index.
- Valuation premium is the difference between the long-term estimate of the index P/E ratio and the current level of the index P/E ratio for each asset class.⁷

This analysis resulted in reduced long-term estimates for both Canadian and global equities compared with last year's return estimates. Higher yields in Canada at the end of the year also contributed to higher forecast long-term returns for Canadian bonds, thus widening the return gap between Canadian and global bonds.

The yield to maturity for an index is a good indicator of the total return earned by an investor if the bond is held to maturity. We use a 10-year time frame as the basis for forecasting returns for specific bond indices. As investment-grade corporate bond indices have durations of less than 10 years, the credit spread over a comparable duration, zero-coupon government bond is added to the yield of the 10-year maturity treasury to estimate 10-year returns. This results in an addition of approximately 30 basis points (bps) to the index yield. There are two possible explanations for the additional yield: 1) market participant expectations for the country-specific interest rates imply that there is potential for future rate increases, and 2) there is a risk premium to investing in longer-maturity bonds. The first explanation supports the additional yield from the index yield in our long-term forecasted returns.

For fixed income indices with substantial credit risk such as U.S. high-yield and emerging market debt, the average expected loss in cases of default was subtracted from the 10-year yields. The expected loss is a function of the probability of default and the typical expected losses at time of default.

The volatility parameters and their correlations are also essential in determining the optimal portfolio mix that would minimize the level of risk, given the desired client return. Volatility for our asset classes is determined using a three-step methodology. We first decide on an appropriate time period for estimating volatility. This is an important step, based on our belief that recessionary-versus growth-period durations will impact long-term return estimates. These periods of recession and growth are determined using economic data from the NBER (National Bureau of Economic Research).

IMR believes that the number of recession and growth periods over the past 10 years more than cover a full business cycle and, as such, are appropriate for estimating volatility parameters. Data outliers that represent a small number of observations (between one and four months per asset class) were then adjusted to approximate the 0.5 percentile value in their respective return distributions. Volatility estimates were compared with their forecast returns and adjusted in cases where the Sharpe ratio of the two was significantly different from its historical long-term value. We believe that this method will result in more stable volatility and correlation data.

Our forecasts resulted in the following estimates for the long-term expected returns of the base portfolio in Canadian dollars:

	Equities		Bond		Cash Cdn	HY U.S.
	Global	Cdn	Global	Cdn		
Expected Returns (%)	6.4	5.6	1.9	2.5	1.3 ⁸	4.7
Expected Risk (%)	12.2	13.1	3.8	3.6 ⁹	1.2	9.4

Source: CIBC Asset Management Inc.

Asset Allocation Process

Determining Investor Profiles: Objectives

The asset allocation process is founded on the principle that each combination of stocks, bonds and cash will provide a different expected risk and return level. Many variables need to be considered in determining the appropriate mix of stocks, bonds and cash for each type of investor. These include the investor's individual goals and risk tolerance, time horizon, financial situation, income needs, liquidity, tax considerations, unique circumstances and attitude toward global investing. When selecting an appropriate profile, it is also necessary to determine long-term return objectives, as well as risk tolerance. Importantly, risk tolerance should not be based on the last 12 months of performance and volatility, but instead on longer periods that better coincide with the investor's time horizon. Investors need to be comfortable with the volatility of their asset allocation in whatever type of market that awaits.

We use five investor profiles, intended to serve as guidelines for clients, covering a variety of investor groups. From most conservative to the most aggressive, these include: Capital Preservation, Income, Income and Growth, Growth and Aggressive Growth.

2017 Asset Allocation for Canadian Investors (changes from prior year allocation in brackets)

	Equities (%)		Bonds (%)		HY (%) U.S.	Cash (%) Cdn	Expected	
	Global	Cdn	Global	Cdn			Return ¹⁰ (%)	SD (%)
Capital Preservation	5	15	25	30	5	20	2.9	2.8
Income	15(+3)	15(-3)	20(-5)	30(+5)	10	10	3.6	4.1
Income & Growth	25	20	15(-5)	20(+5)	15	5	4.3	5.8
Growth	45	20	15(-5)	5(+5)	15	0	5.1	8.0
Aggressive Growth	65	20	0	0	15	0	6.0	10.4

Source: CIBC Asset Management Inc.

Asset Allocation Process and Recommendation

The next step in portfolio construction was to determine optimal allocations based on our forecast and historical assumptions. Portfolios were generated for every combination of cash, bonds and equities, and rebalanced annually.

After generating every possible portfolio combination, the standard deviation and expected long-term returns were calculated for each portfolio and plotted to create the efficient frontier. The expected long-term returns and volatilities are estimated based on our methodology described earlier. We believe this provides a more realistic return expectation for the different investor profiles. Only portfolios with the highest return for each incremental level of risk are plotted and linked to form the efficient frontier (graph on page 1).

The efficient frontier is then divided into five equal segments, which correspond to our investor profiles. They are ranked from the most risk averse (Capital Preservation) to the least risk averse (Aggressive Growth). The final asset allocations are a blend of the equity/bond/cash weightings in each segment.

The chart at the top illustrates recommended allocations based on the broader asset classes. The number in brackets indicates the change in allocation from the prior year's version of this paper.

In our previous publication of the LTAA paper we recommended the addition of two debt asset class—high yield and global debt—to our portfolios. This resulted in significant reallocations for the existing asset classes. Given the long-term focus of our strategic recommendations, we will only make directional shifts in our allocations based on changes to our forecasts. A key change in our models is the impact of the divergence in monetary policy between the Fed and other developed countries, which has increased the gap between the expected yield from global versus Canadian bonds. As a result, Canadian bonds are expected to outperform global bonds by 60 bps over the next 10 years. This has resulted in a 5% reallocation from global to Canadian bonds.

Considering the long-term nature of the allocations, the shifts are recommended for new investors in the balanced portfolios. Existing investors should consider rebalancing to account for the declining valuations of Canadian fixed income products relative to their global counterparts, given rising domestic interest rates.

In the absence of sharp rises in interest rates, the steady but slow recovery in most developed markets indicates that higher current yields in Canada should provide additional return over global bonds over 10 years. In the unlikely scenario that interest rates increase in Canada at a significantly faster pace than in other economies, performance would be negatively impacted. However, the ability to reinvest the coupon at a higher rate would partially insulate losses in the long run.

Diversification within Asset Classes

In this part of the analysis, we provide guidance on how to apply our asset allocation estimates to each asset class and portfolio construction. When looking at high-yield debt, this allocation could be further diversified by adding a number of debt instruments, including multi-sector fixed income portfolios, floating-rate loans and U.S. high-yield debt. The allocation within high-yield debt could be further broken down into the following recommended mix: 25% multi-sector fixed income; 25% floating rate loans and 50% U.S. high-yield debt.

Recommended Strategic Mix within the High-Yield Asset Class

HY Fixed Income	Weight	Expected	
		Returns ¹¹	Volatility
Multi Sector Fixed Income	25%	3.0%	8.3%
Floating Rate Loans	25%	4.5%	9.5%
U.S. High Yield Debt	50%	4.7%	9.4%

Source: CIBC Asset Management Inc.

Within global equities, a mix of 50% U.S. equities, 20% international equities, 15% emerging market equities and 15% real assets results in the most efficient portfolio. The table below illustrates the proposed mix for the global equities portfolio and the 10-year forecasted returns and risk estimates by asset class:

Recommended Strategic Mix for Global Equities

High Yield Fixed Income	Weight	Expected	
		Returns	Volatility
U.S. Equity	50%	6.3%	12.5%
International Equity	20%	6.8%	13.8%
Emerging Markets	15%	9.3%	19.0%
Real Assets	15%	6.1%	11.9%

Source: CIBC Asset Management Inc.

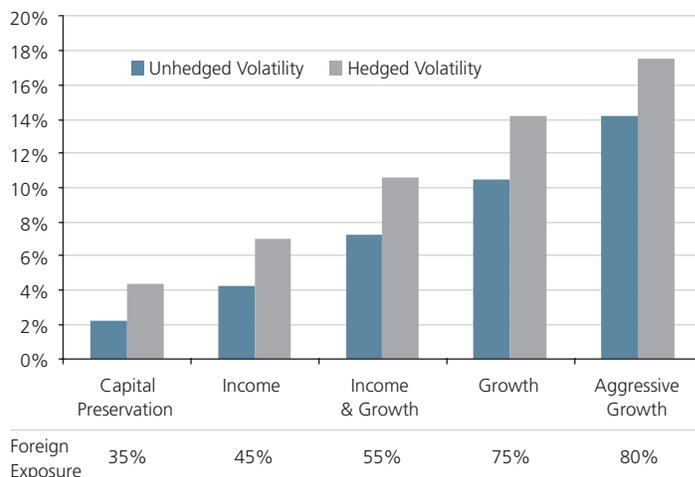
Currency Impact for Canadian Investors

Currency exposure can add foreign exchange fluctuations to the recommended portfolio returns in the short run. However, over a longer time frame, foreign exchange exposure becomes less of a concern, and represents a small risk relative to the benefits of global diversification.

When determining our long-term asset allocation profiles, we factored in the foreign exchange risk with respect to the risk and return objective of each investor profile. Foreign exposure typically increases for riskier profiles, as these investors will typically have a longer time horizon, lower liquidity requirements and a higher risk tolerance. Conversely, an investor with lower risk tolerance will likely have higher short-term liquidity requirements and less short-term foreign exchange volatility tolerance. However, in any given year, foreign equity products hedged to Canadian dollars may be beneficial for low-risk investors with a short-term horizon.

In the long run, the diversification benefits of including additional currencies in the portfolio results in reduced volatility. Historical data shows a positive correlation between Canadian equities and Canadian currency due to both being highly dependent on oil prices. Lower Canadian-based returns for foreign investments (in the case of an appreciation in the Canadian dollar) indicate

Historical Volatility for Unhedged and Hedged Proxy Portfolios (January 2006 – December 2016)

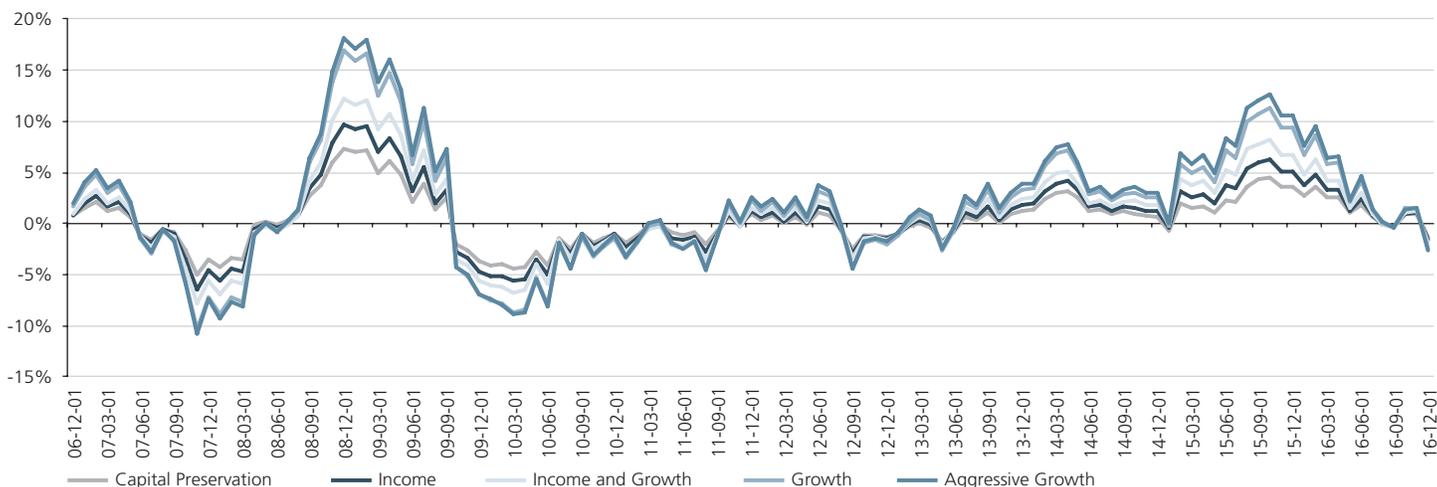


Source: CIBC Asset Management Inc. for model portfolio weights Bloomberg for index returns as proxies for asset class performance.

a negative correlation between both Canadian equities and Canadian currency versus unhedged foreign assets. As shown in the next exhibit, improved diversification and reduced volatility are observed in all of the risk profiles when unhedged foreign investments are added.

The impact of a hedged investment on total returns is also a key consideration when determining the required amount of hedging. The exhibit below shows that returns are higher on average for all unhedged profile portfolios, indicating no long-term benefits of hedging based on historical performance. However, currency fluctuations in any one year could materially impact returns in the short run, indicating potential hedging benefits for the Income portfolio, which has a short-term investment horizon. In years where the excess return of the unhedged versus hedged portfolios is negative, hedging would have enhanced returns. In 2016, for example, the unhedged portfolios underperformed the hedged portfolios by 1.7% for the Capital Preservation profile, and up to 3.6% for the Aggressive Growth profile. As such, we recommend that clients with short-term requirements use hedged products for U.S., global, infrastructure and real estate equities.

Excess Return¹² of Unhedged vs. Hedged Proxy Model Portfolios (December 2006 – December 2016)



Source: CIBC Asset Management Inc. for Model Portfolio Weights, Bloomberg for indexes as proxies for asset class performance.

For clients investing in Canadian asset classes only, with no international exposure, we recommend the following allocation for each investment profile:

Recommended Asset Allocation Using Domestic Only Assets (%)

	Expected Return	Volatility	Canadian Equity	Canadian Bonds	Cash
Capital Preservation	2.7	2.9	15	65	20
Income	3.3	4.4	30	60	10
Income & Growth	4.1	6.7	50	50	0
Growth	4.7	9.2	70	30	0
Aggressive Growth	5.3	11.8	90	10	0

Source: CIBC Asset Management Inc.

Finding the Optimal Profile

The search for an investor's optimal investor profile begins with considering the trade-off between risk and return. Investors should view a portfolio's risk and return characteristics in tandem, as each provides an essential piece of the asset allocation puzzle. The expected return must be sufficient to achieve the investor's long-term goals, while the risk must be tolerable.

Asset Class Returns and Volatility

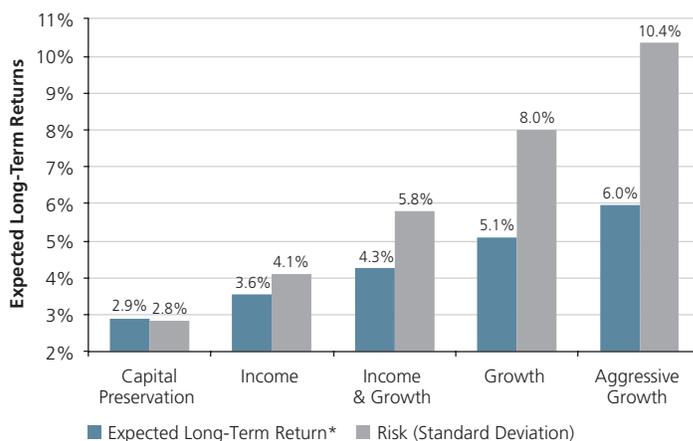
Asset Class	Historical Return (%)	Forecasted*		Annual Returns (%)	
		Long-Term Return (%)	Standard Deviation (%)	Best	Worst
Canadian Equity	10.0	5.6	13.1	86.9	-39.2
Global Equity	11.0	6.4	12.2	69.8	-39.4
Canadian Bonds	6.7	2.5	3.6	40.8	-7.9
Global Bonds	6.2	1.9	3.8	40.1	-14.6
High Yield Bonds	8.8	4.7	9.4	48.6	-33.4
Canadian Cash	5.3	1.3	1.2	19.5	0.3

Source: CIBC Asset Management Inc.

*Forecast returns and standard deviation are estimated based on the methodology described in the Long-Term Capital Market Assumption, while historical returns are based on historical data from 1950–2016, with the exception of the High Yield Bond asset class where data starts January 1986.

The risk measures discussed earlier can help investors decide on the suitability of each profile. It is clear that, over the long-term, equities outperform bonds and bonds outperform cash—but outperformance comes with the cost of higher risk, as measured by volatility (standard deviation). Regardless of the measurement used to quantify risk, higher returns still require the assumption of higher risk. The five investor profiles ranging from Capital Preservation to Aggressive Growth have incrementally higher levels of expected return and volatility. This distinctly highlights the tradeoff between expected profile returns and the assumption of higher risk levels.

Investor Profile Expected Returns and Risk



Source: CIBC Asset Management Inc.

The following tables summarize the historical and expected returns for the five investor risk profiles. The range of performance illustrates the short-term volatility risk and benefits of remaining invested for the long run. The longer the investment horizon, the lower the likelihood of experiencing negative average returns.

Investor Profile Allocations and Returns (%) (1950 – 2016)

	Equities		Bonds		HY U.S.	Cash	Expected		Historical
	Global	Canadian	Global	Canadian			Return ¹³	SD	
Capital Preservation	5	15	25	30	5	20	2.9	2.8	7.4
Income	15	15	20	30	10	10	3.6	4.1	8.2
Income & Growth	25	20	15	20	15	5	4.3	5.8	9.1
Growth	45	20	15	5	15	0	5.1	8.0	10.0
Aggressive Growth	65	20	0	0	15	0	6.0	10.4	10.8

Source: CIBC Asset Management Inc.

Annualized Return Variability 1950 – 2016 (%) (not annualized if less than 1 year)

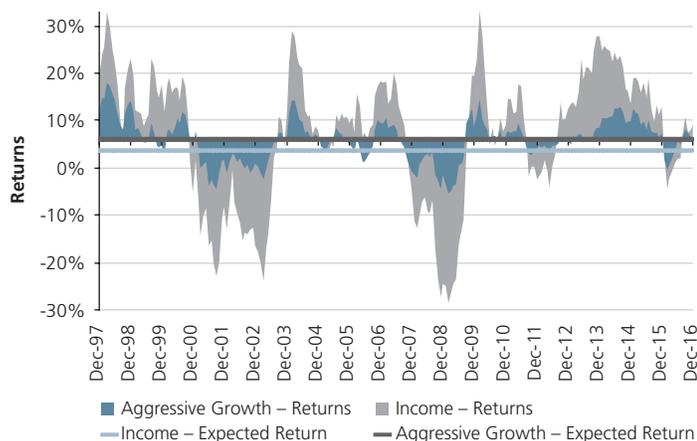
	Monthly		3 months		6 months		1 year		3 years		5 years		10 years		% Negative Months
	Best	Worst	Best	Worst	Best	Worst	Best	Worst	Best	Worst	Best	Worst	Best	Worst	
Capital Preservation	6.6	-3.8	15.2	-5.7	23.8	-8.7	24.0	-1.4	21.7	1.7	19.7	2.9	14.5	3.9	29.9
Income	7.5	-5.4	16.6	-8.1	26.0	-12.4	27.8	-5.0	23.8	-0.3	22.3	1.9	15.9	3.2	31.6
Income & Growth	9.9	-7.5	17.5	-12.6	28.9	-17.7	30.7	-8.9	27.1	-3.5	25.2	0.5	17.8	2.4	32.0
Growth	12.4	-11.1	19.6	-16.8	31.6	-22.5	36.0	-14.5	33.1	-8.4	29.3	-1.6	20.3	0.5	34.7
Aggressive Growth	15.0	-15.6	24.6	-23.2	38.5	-30.5	42.3	-20.8	38.7	-13.4	33.0	-3.6	22.4	-1.3	35.0

Source: CIBC Asset Management Inc.

Risk Analysis of Investor Profiles

Different measurements may be used to quantify risk. There is no preferred method of measuring risk, but combining various risk measurements provides a more comprehensive analysis of the risk characteristics of an investment portfolio. Standard deviation is one of the most commonly used risk measurements in investment theory, as it measures the variability around expected returns. The lower the observed standard deviation, the lower the expected risk.

Variability in Expected Return for the Income and Aggressive Growth Profiles (1998 – 2016)

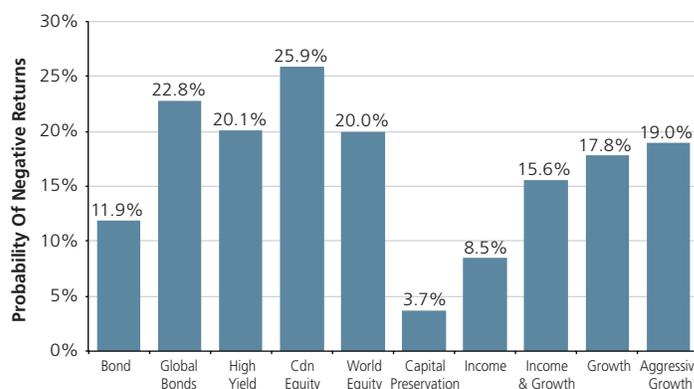


Source: CIBC Asset Management Inc., Bloomberg.

The chart demonstrates the risk (variability) for two profiles. The average standard deviation for the Aggressive Growth portfolio is 10.4%, while the average standard deviation for the Income portfolio is 4.1%. Clearly, the returns are more variable for the Aggressive Growth profile. However, the expected return for the Aggressive Growth portfolio (6.0%) is also materially higher than the expected return for the Income portfolio (3.6%).

Another measurement to quantify risk is the probability of negative returns over a specific period. As shown in the chart below, the Capital Preservation portfolio has only a 3.7% chance of losing money over a one-year period, while the Growth portfolio has a much higher chance, at 17.8%.

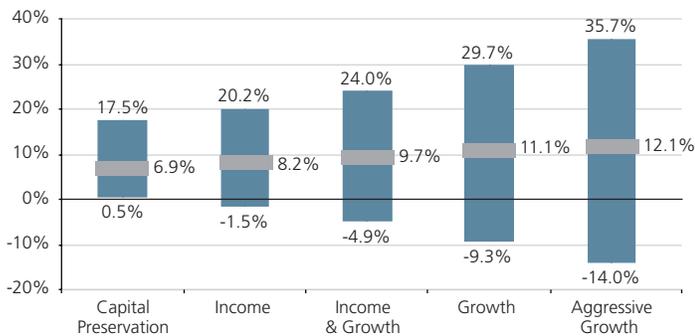
Probability of Negative Annual Returns in a One-Year Period (1950 – 2016)



Source: CIBC Asset Management Inc., Bloomberg.

One problem with the probability of negative returns as a measurement of risk is that it does not address the magnitude of potential loss. A particular investment may have a small chance of experiencing a loss, but if the loss occurs, it may be larger than the investor can tolerate. Return percentile is another risk measurement that combines the probability of loss occurrence with the magnitude of the corresponding return. The 5th percentile shows the lowest 5% for returns. The table below shows the 5th, 50th and 95th annual return percentiles for the profiles from January 1950 through December 2016.

5th, 50th and 95th Annual Return Percentiles (1950 – 2016)



Source: CIBC Asset Management Inc.

Another risk assessment approach is to test how long each profile traverses from peak to trough and back to the original peak again during the prior 66 years. Impressively, the most conservative Capital Preservation profile only required one year to recover twice in the last 66 years. Conversely, the Aggressive Growth profile endured nine periods that required more than a year to recover, four of which took longer than three years to regain their previous peak. Once again, this demonstrates the importance of time horizon when determining an appropriate investor profile.

Frequency of Extended Recovery Periods (1950 – 2016)

	3 or More Years to Recover	2 to 3 Years to Recover	< 2 Years to Recover
Capital Preservation	0	0	2
Income	0	1	5
Income & Growth	1	2	5
Growth	2	1	6
Aggressive Growth	3	1	5

Source: CIBC Asset Management Inc.

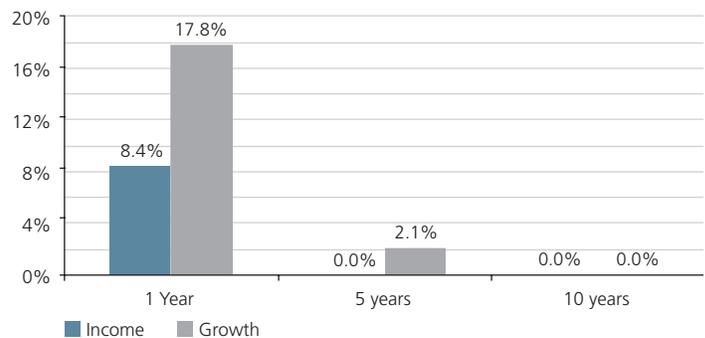
Remain Diversified and Fully Invested

Investors are advised to set their long-term financial goals and to have a disciplined asset allocation approach. This will help them meet their long-term targets in accordance with their risk profiles.

Timing the markets typically prevents investors from achieving their long-term goals.

Risk decreases over a longer time horizon. This should encourage patient investing, as the probability of realizing a loss diminishes over time. Based on the past 65 years, the probability of a negative return for the Income profile and the Growth profile decreases from 8.5% and 17.7% respectively on a one-year basis, to 0.0% and 7.8% on a three-year basis and 0.1% and 0.0% for the profiles over a seven-year period.

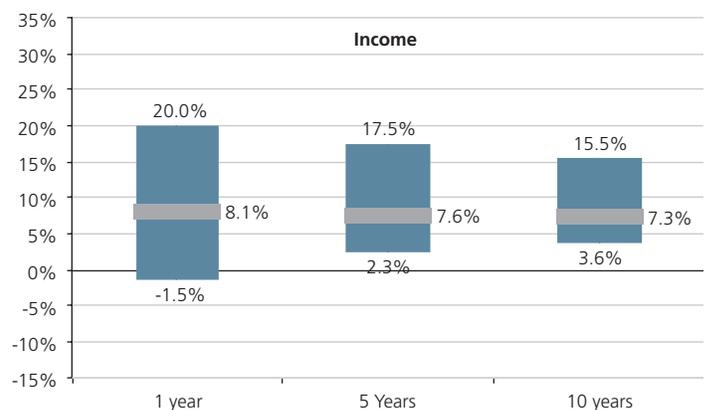
Percentage of Negative Annualized Returns for the Income and Growth Profiles (1950 – 2016)



Source: CIBC Asset Management Inc., Bloomberg

Investing is a long journey and investors should not allow short-term market movements to alter their approach. The next chart shows the return-percentile of the Income and the Growth portfolios from 1950 to 2016, at the 5th, 50th and 95th percentiles. In any short-run period, investors may face higher volatility and potentially negative returns. However, this should not discourage them from investing, as volatility tends to decrease in the long-run and returns tend to revert to a narrower band around their long-term average.

5th, 50th & 95th Annualized Return Percentile Over Time (1950 – 2016)



Source: CIBC Asset Management Inc., Bloomberg

Supported by this data, a link between the time horizon and the investor risk profile should be established. For example, investors with a five-year time horizon may be comfortable investing in the Income portfolio. Based on the past 66 years of historical returns, the Income portfolio, as shown in the chart above, has a 50% chance of achieving an annualized return of 7.6% or better over a five-year period, and only a 5% chance of making an annualized return of less than 2.3%. We can compare that to the current yield on a Canadian 91-Day T-Bill of 0.6% as at December 31, 2016. Investors may be better off investing in the Income portfolio which, over the past 66 years, has not produced a return of less than -1.5%.

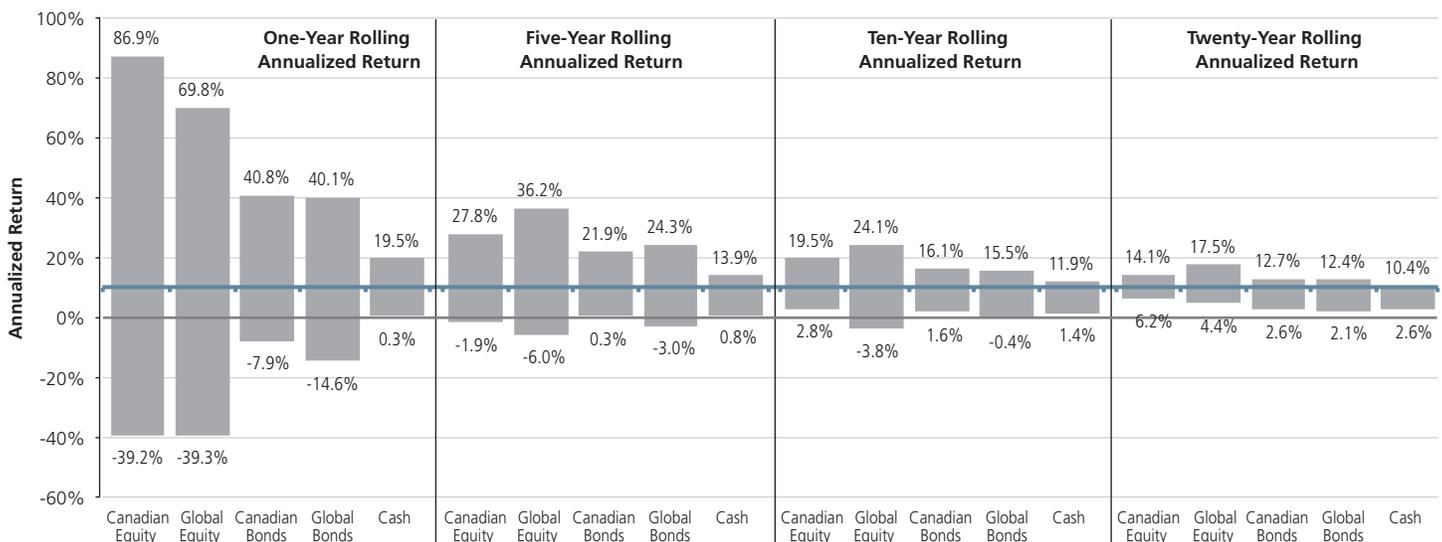
The above statistics should be a wakeup call for risk-averse investors who have their money in saving accounts or cash with a five year time horizon. Many risk-averse investors unwittingly believe that cash is a safer investment than the Income portfolio on a five-year period. This may not be the case. It is very interesting to note that, in the past 66 years, the Income profile never had an annualized return lower than positive 2.3% on a five-year basis, while cash did (for example, 0.5% during 2016). Although the Income profile may have a higher volatility than cash, most of this volatility is upside volatility, which could be viewed as upside return potential. History has taught us that investing in cash as opposed to the Income profile over a five-year time horizon has a high opportunity cost that sacrifices upside return potential with no or little improvement on the downside risk.

Equities are Best Over the Long-Term

In periods of strong equity market returns, investors can be tempted to establish very high allocations to equities in an effort to capture further gains. What they forget, however, is that the higher potential returns of equities come with higher risk. Instead of chasing returns, investors should maintain a disciplined, long-term asset allocation approach, taking into account their time horizon, liquidity needs and risk tolerance. In particular, a well-diversified portfolio should include an allocation to bonds, as they help to mitigate the risk of the portfolio's equity holdings.

The equity markets have been volatile and most investors would agree that, in the short-term, equities are more volatile than bonds and cash. Investors with very short-term goals should, in general, steer clear of equities and focus on guaranteed investments. However, in the long-run, equities continue to prove themselves as the superior asset class for investment growth. Even the worst 20-year period for Canadian equities (annualized return of 6.2%), is only slightly below the average historical performance from the bond market and is higher than the current effective yield on cash and bonds (0.65 and 2.1%, respectively, as at December 31, 2016). History tells us that over the past 66 years, Canadian equities outperformed Canadian bonds in 73.3% of the overall periods on a 10-year rolling basis.

Equities are Best Over the Long-Term: Worse and Best Annualized Returns (1950 – 2016)



Source: CIBC Asset Management Inc., Bloomberg.

Tactical Asset Allocation Opportunities

Luc de la Durantaye, CFA
Global Economic Outlook

“Uncertainty prevails everywhere”

Mario Draghi, President European Central Bank

Policy limits

The theme of our last edition of *Perspectives* reflected our anticipation that monetary policy would need to “pass the baton” to looser fiscal policy to keep the global economic expansion on track. This was a pressing issue in light of the fact that the monetary policies of the world’s main central banks had reached their limits. Interest rates were in negative territory and asset purchase programs (also known as Quantitative Easing) were depleting the stock of government debt available for purchase. There were signs that these policies were reaching their limits, as negative feedback loops in the financial sector, insurance companies and pension plans were becoming apparent.

Over the last few months, this transition has evolved faster than we were expecting. The most significant event was in the U.S., with the surprise election of Mr. Trump and a Republican majority in Congress. Republicans based their election campaign platform on tax reform and infrastructure spending, in a bid to “make America great again”. Unfortunately for market participants, many details are still missing with regards to Trump’s proposed fiscal policy shift.

Still, the prospect of fiscal stimulus amid accommodative monetary conditions in the U.S. has dramatically changed the global financial dynamics. Bond yields have risen, along with inflation expectations, while rising stocks prices are anticipating only a positive impact from the expected policy boost. Other aspects of a new Trump administration, such as trade protectionism and the potential imposition of tariffs on trading partners, have so far been treated with benign neglect by financial markets. This may come to haunt them in the first 100 days of the new administration. For example, renewed strength in the mighty U.S. dollar is likely to negatively impact manufacturing employment prospects, the very base of Trump’s election supporters. Continued strength in the greenback makes it more likely that the new administration will make good on implementing trade restrictions. This development is the one that is most likely to unnerve financial markets and trigger retaliation from trading partners impacted by the new measures.

The Federal Reserve also remarked that fiscal spending, when the U.S. economy is at full employment, will likely trigger a faster tightening of monetary policy, given the rising wage inflation risk. The Fed has already delivered two hikes this past December—one official hike via the fed funds rate increase and another hike in the form of an increase in the number of “dots” published in the so-called *dot plots**.

Elsewhere in the world, fiscal stimulus has also gradually appeared on government agendas. The European Commission recently wrote a note titled “Towards a positive fiscal stance for the euro area”. In it, recommendations are made to European governments to support, where possible, economic activity via a loosening of fiscal stance. However, Europe has limited scope to expand fiscal spending. Germany may be the exception, as it benefits from a budget surplus and may use some of it ahead of its fall election. However, this is not expected to be a game changer for eurozone growth as a whole, given the remaining demographic and debt headwinds. In short, Europe shows no sign of interest in a revival of Keynesian economics. Britain’s economic growth risks are tilted to the downside as well, given the uncertainty faced by economic agents, consumers and businesses once Brexit negotiations start in earnest (first quarter of 2017). This is likely to keep the ECB pursuing its Asset Purchase Program at least until year-end 2017. It may even prolong purchases into 2018, perhaps at a slower pace, to insure against sharp spikes in peripheral yields. Fiscal room is also limited in Japan, given the high debt level, while China can use some fiscal levers. However, given the large fiscal stimulus of the past year, the growth impact will be just enough to maintain government growth targets, but not exceed them.

As a whole, our main scenario of **“Policy Limits”** remains valid, given little monetary and fiscal room to maneuver at the global level. While the economic expansion is expected to continue in 2017, growth is not expected to accelerate. Uncertainty around this forecast is unusually large, given many policy unknowns as we enter 2017.

**Dot plots represent the consensus outlook of the FOMC Committee for the number of hikes expected for next year.*

Fixed Income Versus Equity

Known Political Unknowns

The last quarter of the year was marked by many political events. First and foremost, the election of Donald Trump as President of the United States took the world by surprise. The markets’ reaction to this unlikely event was also a surprise. On the night of the election, markets initially reacted with panic, as expected. Gold and bonds rallied, while equities saw sharp declines. However, these moves quickly reversed and paved the way for a sharp correction in gold and bonds, and a rally in U.S. equities. A less significant, yet still important, political event was the Italian referendum on constitutional reforms in December. Italians rejected the proposed reforms, leading to the resignation of the Prime Minister. Although less significant than Brexit, it is another event in Europe that highlights popular discontent following years of economic stagnation.

From an investment point of view, the main outcome of these events is increased uncertainty around policy outlook. We know what Trump discussed during the election, but doubts remain about what he will actually do. And we know even less about what he will be able to get passed through Congress.

One thing is certain—Trump will need to moderate his policies. Congress is not only unlikely to allow these measures to pass in their existing (proposed) form, but his advisors, as well as lobbyists, may push him in a more pragmatic direction. It is an understatement to acknowledge that Donald Trump is unpredictable. But it will take time before his policy agenda starts to take shape. It will take even more time before the policies are implemented and have an actual impact on the economy.

Any attempt to assess how Trump's policies will affect financial markets is pure speculation, at least at this point. Generally speaking, we can expect his policies to take aim at creating jobs and favouring stronger growth. The adverse side effect could be upward pressure on inflation. The implications for the bond market should be higher yields, and this is what markets have been rapidly pricing in.

The impact on equities is less obvious. Given stronger economic growth, investors might be willing to pay a higher price for equities. That said, inflation typically leads to lower P/E ratios. In order to assess the net impact of stronger growth and higher inflation, we used a regression model. With this model, we can measure the marginal impact of each variable on the P/E ratio. As shown in the table below, inflation and inflation uncertainty are the most significant drivers of P/E ratios. A tight labour market that generates higher wage growth and higher import prices from trade tariffs would be bad news for equities. However, if fiscal policy succeeds in boosting growth, some of the negative impact could be offset. The caveat is that it would not be sufficient to only deliver faster economic growth. Investors are willing to pay a higher price for equities not just if the economy is stronger, but only if companies are more profitable. In fact, a moderate increase in inflation would require a large improvement in profitability in order to maintain the P/E at the same level.

Typically, we formulate our main economic scenarios and then assess the implications for financial markets. However, the 2017 economic outlook is more dependent than usual on the performance of the bond market and the U.S. dollar. These unusual conditions make it especially difficult to develop investment strategies. One consequence is that it should accentuate trends—markets may overreact on the upside and the downside—as investors will be unsure how to interpret new information.

The global economy has good momentum. Monetary conditions (i.e. interest rates and currencies) and fiscal stimulus always take some time before their impact is felt on the real economy. As such, the current economic momentum is the result of monetary conditions that loosened in the U.S. earlier in 2016, as well as previous stimulus measures implemented in China. Those effects should carry over into the first and second quarter of 2017. After that, the recent rise in interest rates and the appreciation in the U.S. dollar will start to bite, while the expected U.S. fiscal stimulus will not yet be deployed. For now, a neutral to cautiously positive stance on equities is warranted. Bonds should underperform, as monetary policy and bond yields continue to normalize.

What Determines P/E Ratios?

For a 1% Increase in:	The Marginal Change in P/E is:
Volatility of inflation	-9.9%
Inflation	-9.1%
Return on equity (ROE)	4.5%
Real interest rate	-1.6%
Real GDP growth	0.1%

Based on a multiple regression of the S&P 500 P/E ratio against these 5 variables
Source: CIBC Asset Management Inc.

Equity Market Outlook

More on U.S. vs. Emerging Equities

The attractiveness of emerging markets relative to U.S. equities has been at the core of our equity strategy for some time. In the context of the outcome from the U.S. election, we take another look.

Our arguments against U.S. equities have relied on the following: 1) U.S. equity valuation is high, both compared to its own history and compared to other markets; and 2) profit margins are historically high, at a time when the labour market is tight and wages are picking up. Are these arguments still valid? Profit margins were high because both the cost of labour (as a % of GDP) and interest rates were historically low. These conditions were beneficial for companies, but are unlikely to persist. In fact, margins have already started to decline as wages have picked up. The impact of Trump's fiscal policy on valuation will depend on its impact on growth versus how much inflation it generates. Let's assume U.S. CPI, which now stands at 1.6%, rises to the 2% targeted by the Fed. This is a conservative assumption, since the Fed has indicated they would tolerate an overshoot for inflation. Also assume inflation volatility, now at 2.2%, returns to its historical average of 3.4%. In this scenario, a minimum increase of 2% in Return on Equity (ROE) would be required to keep the P/E ratio stable (based on the sensitivities shown in the previous section). That would raise ROE from 15.2% currently (which, coincidentally, is in line with the historical average) to 17.2%. This is not impossible, but it would be a significant increase. To put this in perspective, ROE has historically peaked around 18%. Only during the boom years of the late 90s has it been higher. A higher ROE would most likely not come from higher profit margins—higher leverage or higher asset turnover would be needed to raise ROE. The bottom line is the policies favoured by Donald Trump are likely to be more positive for Main Street than for Wall Street.

If U.S. equities have performed well in the aftermath of the elections, investors have not been as kind to emerging markets. Both equities and currencies in emerging countries have underperformed, leading to even more attractive valuations. The main question is: why are emerging markets cheaper? We look at a number of factors that could explain this gap.

The valuation of emerging markets (EM), relative to the U.S., and more generally to all developed markets (DM), has loosely followed the relative economic growth of the two regions. In recent years, while growth in EM has remained higher than in DM, the difference between the two has narrowed. This relative slowdown in EM economic growth has also spilled over to weaker profitability. Return on equity in EM has declined and is now close to the level of the developed world. If we break down ROE, we see that profit margins have declined while corporate leverage has increased, not the most desirable combination. However, we also note that the interest coverage ratio, a measure of how much cash companies generate to pay debt, has remained healthy. Most of the increase in leverage has come from China. Other emerging countries continue to show less leverage than in the developed world. In China, the increase in leverage has come from industrial and basic materials companies. These are the old economy sectors struggling with over-capacity. Furthermore, our measure of economic vulnerability shows that the economic health of EM improved until late 2015. Since 2015, the improvement has stalled, but only a few countries have actually deteriorated. Russia and Brazil have felt the pain from weak commodity prices. While there are a few pockets of concern (i.e. the old economy in China and commodity producers), the overall corporate and economic health of emerging markets has improved since the Great Financial Crisis and, more recently, has remained stable. As such, we believe the large valuation discount in emerging markets is not justified—in other words, emerging markets are currently undervalued.

Fixed Income Outlook

Navigating a Policy Transition

- In light of recent developments on the policy front, we are now working with a 12-month target of 3.00% for U.S. 10-year treasuries and 2.00% for the Canadian equivalent.

Although bond yields reached new cyclical lows last summer, the final months of 2016 resembled the famous “taper tantrum” of 2013. The year-end pullback in the Canadian bond market was triggered by shifting market expectations about the inflationary nature of potential policy changes from a new U.S. administration.

Moving into the new year, the pullback in bond markets is expected to continue, but the upside for bond yields (downside for bond prices) should be limited. U.S. and Canadian 10-year sovereign bond yields are projected to peak around 3.00% and 2.00%, respectively, in 2017. This forecast is somewhat below consensus.

There are multiple forces pushing yields higher in 2017. First, the U.S. Federal Reserve is expected to stay in renormalization mode and gradually and prudently hike interest rates. While this is, for the most part, already priced into the bond markets, it should provide a floor for bond yields. Second, other major central banks, such as the Bank of Japan (BOJ) and the ECB, will likely experiment further with the “QE with yield curve control” policies already implemented. The implicit objective here is to gradually re-steepen yield curves in an orderly fashion, as conditions allow. The efforts deployed to control the shift in term structures in Japan and the eurozone should indirectly limit the size and speed at which yields can rise in North American markets. Finally, our

forecast accounts for the inflation risk associated with potential developments on the fiscal and trade fronts in the United States. The policy changes envisaged have the potential to significantly alter the U.S. inflation backdrop. As a result, the inflation premium embodied in bond yields is likely to rise. Altogether, we see these factors as moderately bearish for bond prices, marginally favourable to Canadian bonds vs. U.S. and still supportive of an outperformance of corporates relative to sovereigns.

The risk to this baseline scenario is for a pullback in bond markets that turns too violent. If this happens, the damage on the economic front could be serious enough to force U.S. monetary authorities to move to the sidelines.

Conclusion

In our view, finding an appropriate asset allocation is essential for investors attempting to attain their long-term financial goals. The trade-off between return and risk must be considered in order to achieve financial objectives while ensuring investors are comfortable with the level of risk/volatility.

Our research suggests that a portfolio risk/return profile can be improved by the addition of a number of new asset classes including: global debt, high-yield debt, global real assets and a multi-sector fixed income instrument. The main risk that investors will face by adding foreign investment to their mix is currency risk. To mitigate this risk, hedged portfolio products provide the benefits of added exposure to global growth, with limited currency risk.

Long-term strategic asset allocation is established and intended to be adhered to despite market fluctuations. Any tactical deviations should only be incorporated to add incremental return without threatening longer-term return and risk objectives. Tactical calls by the CAM Asset Allocation and Currency team recommend maintaining a small equity overweight versus fixed income due to the additional stability that fixed income is expected to provide at a time of increased market volatility. Regionally, investors are advised to favour international and emerging market equities and remain neutral on U.S. and Canadian equities.

Market volatility has a powerful impact on investor sentiment. All too often, investors will want to increase equity weightings at or near market peaks, and conversely want to reduce or eliminate equities near a market trough. Long-term experience has taught us that discipline is paramount under such trying environments.

Bonds remain an important part of a well-diversified portfolio, as they can help offset the risks inherent in equity returns. Investors who are concerned about the impact of rising rates on their bond holdings can take advantage of shorter-duration debt instruments such as floating rate, high-yield and multi-asset fixed income strategies and maintain a shorter overall duration in their bond holdings. Shorter durations result in lower sensitivity to movements in interest rates. Higher yielding corporate bond holdings also generally offer less interest rate sensitivity, as changes in credit spreads are often negatively correlated with changes in T-bill yields.

All returns are total returns and are stated in Canadian dollar terms unless otherwise specified. Total returns include all sources of return (any capital gain or loss, dividend, coupon interest) over some time horizon.

¹<http://www.oecd.org/eco/outlook/euro-area-economic-forecast-summary.htm> Volume 2016 Issue 2

²Canadian High Yield credit spread is the difference between the yield of the Bank of America Merrill Lynch Canada High Yield Index and that of the Bank of America Merrill Lynch Canadian Government Index.

³Proxy indices for these asset classes are: FTSE TMX Canada 91 Day T-Bills Index for cash; FTSE TMX Bond Universe Index for Canadian bonds; Barclay's Global Aggregate Bond Index for global bonds; and Merrill Lynch U.S. High Yield Master II Index for U.S. high-yield bonds since inception (1986). Prior to 1986, high-yield asset class returns were approximated with a 20/80 blend of the S&P 500 Index with either U.S. government bonds (1950 to 1975) or the Barclays Global Aggregate Debt Index (1975 to 1986). Stock returns are represented by data from the Montreal Exchange and Toronto Stock Exchange Market Review(1950 to 1955), followed by the S&P/TSX Composite Index(1956 to 2015).

⁴Data referenced from IMR's April 2016 paper "Is Your Portfolio Yield-Starved? Take a Bite of Multi-Sector Fixed Income".

⁵C.D. Howe Institute Commentary NO. 395, Long-Term Returns: A Reality Check for Pension Funds and Retirement Savings, Richard Guay and Laurence Allaire Jean, December 2013.

⁶Inflation is estimated as the yield difference from a 10-year government strip versus 10-year government inflation-protected bonds.

⁷Long-term expected P/E ratio is the average of historical P/E ratios using data from 1980 through 2016.

⁸The Canadian cash rate is forecasted using the Vasicek interest rate model, assuming a slow upward-moving interest rate curve and yields of 0.64% as of December 31, 2016.

⁹The volatility of the global bond index is adjusted downward from its historical average to account for higher historical Sharpe ratio of the asset class.

¹⁰Expected returns and expected standard deviations for the component asset classes are based on 10-year forecast returns as explained in the previous section of the paper.

¹¹The multi-sector fixed income product returns were approximated through a blend of the Barclay's Aggregate Bond Index (50%), BoA Merrill Lynch U.S. High Yield Index (25%) and the J.P. Morgan Emerging Markets Bond Index (25%). Floating rate loans are approximated by the Credit Swiss Leveraged Loan Index and U.S. high-yield debt by the BoA Merrill Lynch U.S. High Yield Index.

¹²Excess return is measured as the difference in performance between the rolling one-year returns for the CAD portfolio and the hedged-to-CAD portfolios, 2006-2016.

¹³Expected Returns and Expected Standard Deviations for the component asset classes are based on 10 year forecasted returns as explained in the next section of the paper. While historical performances for the risk profile is based on historical returns for the component asset classes based on appropriate proxy indices, for the period of 1950 – 2016.

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