

Long-Term Strategic Asset Allocation

Helping Investors Navigate Financial Markets and Remain Optimally Allocated

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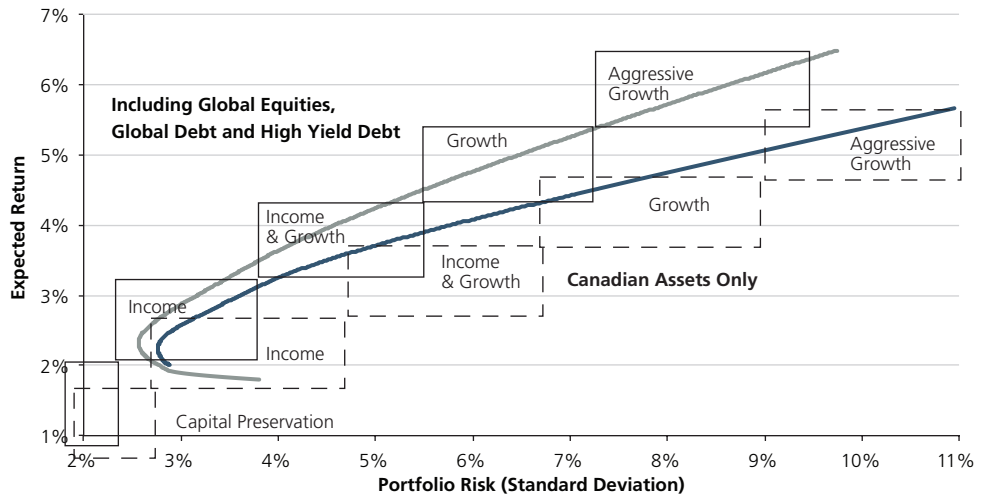
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Objective: to provide a stable long-term asset allocation strategy that responds to the individual investor's objectives and risk tolerance – discounting short-term market gyrations.

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Efficient Frontier (2016 Forward-looking Estimates)



Source: CIBC Asset Management

Highlights

- The Long-term Strategic Allocation Model is updated to incorporate forward-looking equity and debt estimates, which consider our long-term views for the performance of the components of the strategic mix during the next 10-year period. In this edition, we have broadened our model to include a number of new asset classes: global debt, U.S. high yield, multi-sector fixed income, infrastructure and real estate. The addition of these asset classes will improve the efficiency of the portfolios for all of the risk profiles.
- The long-term strategic allocation is complemented with tactical views for the next 12 to 18 months provided by the CIBC Asset Management (CAM) Asset Allocation and Currency Management teams.
 - **Fixed Income Versus Equity:** CAM forecasts mid-single-digit returns for equities and debt over the coming year, with equities mildly more attractive than fixed income.
 - **Equity:** The underperformance from current headwinds has left valuations for emerging markets very attractive. In contrast, U.S. stocks are the most overvalued and offer the least attractive prospects. International equity markets fall between the two groups in terms of attractiveness over the coming year. The view for the Canadian equity market is neutral for 2016.

Highlights (continued)

- **Fixed Income:** Given the deflationary impact of the negative oil shock and low yields elsewhere in the world, CAM projects only marginally higher yields in the U.S. and virtually unchanged yields in Canada. Fixed income securities should provide low single-digit returns and protection against expected equity market volatility.
- 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 fixed income 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 over the long run. To account for the risks associated with foreign currency exposure in the short run, consider global fixed income and equity products hedged to the Canadian dollar (CAD). As part of this year's review, we have presented strategic asset allocation recommendations for currency-hedged global investment products.
- 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.
- An investment portfolio's risk/return profile can be improved by annual reviews and asset class rebalancing.

Capital Markets Review

Market Recap

During 2015, global equity markets experienced the first dip in performance after three straight years of positive returns. The Canadian economy and other commodity-driven economies lagged developed countries in growth and stock market performance. According to the Investment Funds Institute of Canada, Canadian mutual fund investors pulled \$0.4 billion from money market products and added \$2.8 billion and \$5.3 billion to fixed income and equity markets, respectively. Canadian equities underperformed global equities and Canadian bonds during 2015. This illustrates the benefits of adhering to a long-term and globally diversified strategic asset allocation.

The year was marked by increased volatility in global markets, primarily led by the downturn in the Chinese economy, as well as uncertainty regarding the U.S. Federal Reserve (Fed) monetary policy. While slower growth was expected in the Chinese economy, as it shifted its economic focus away from manufacturing, the impact to investor confidence led to volatility and a general risk-off trend. Oil-dominated economies experienced the biggest declines in both emerging and developed markets. Recessionary pressures in some emerging markets such as China and Brazil were deeper than expected. While performance of global equities was negative (-0.32% in USD), the depreciation of the Canadian currency by -16.6% versus the U.S. dollar over the year resulted in a positive performance of 19.5% in CAD.

The downtrend in oil prices has continued to support growth in the U.S. and other non-commodity driven countries. Despite oil prices spurring consumer spending, global growth continues to look fragile. The U.S. economy continues to show solid growth in most indicators including job growth, wages

and housing starts. These developments led the Fed to raise rates in December to 0.5% from 0.25%, with indications that there could be another rate hike in the near term. Despite considerable volatility, U.S. equities generated positive returns of 1.4% in USD and 21.6% in CAD during 2015, making investments in U.S. markets very favourable for Canadian investors.

Equity Market Performance (Canadian Dollars)

Asset Class	Index	2015 (%)	2014 (%)	2013 (%)	2012 (%)	2011 (%)
Canadian Equity	S&P/TSX Composite Index	-8.3	10.5	13.0	7.2	-8.7
U.S. Equity	S&P 500 Index	21.6	23.9	41.2	13.4	4.6
Global Equity	MSCI World Index	19.5	15.0	35.9	14.0	-2.7
Int'l Equity	MSCI EAFE Index	19.5	4.1	31.6	15.3	-9.6

Source: Bloomberg, CIBC Asset Management, as of December 31, 2015

In Japan, the Nikkei 225 Index rose 30.5% in 2015 (11.0% in Japanese yen). As one of China's key trading partners, Japan was also negatively affected by the Chinese economy's downturn. The Japanese economy struggled to gain traction, despite the efforts of Prime Minister Shinzo Abe to bring Japan out of chronic deflation through aggressive fiscal stimulus and monetary programs. November indicators showed a drop in household spending and a minor uptick of 0.1% in inflation from a year earlier, far from the 2% target by the Bank of Japan (BOJ). The BOJ is expected to continue its aggressive monetary stimulus policy program and is currently buying Japanese government bonds at a pace of ¥80 trillion (\$664 billion USD) per year. The Japanese yen gained 16.3% against the Canadian dollar, providing additional value for Canadian investors holding Japanese equities.

The eurozone's recovery continued, although at a disappointing pace. Growth reached its highest level for the first quarter of 2015 at 0.5% and continued on a positive trend, but at lower levels of 0.4% in the second quarter and 0.3% in the third quarter. The pace was slower than expected given the boost in consumer spending from the collapse in oil prices and aggressive quantitative easing by the European Central Bank (ECB) starting in March 2015. As part of its stimulus package, the ECB will inject at least €1.1 trillion into the eurozone economy. During 2015, the euro gained 4.3% against the Canadian dollar and -12.2% against the U.S. dollar.

Canadian equities underperformed global and U.S. equities as a result of continued sharp declines in oil prices, generating returns of -8.3%. Canadian growth rates went from +2.5% at the end of 2014 to recession territory during the first half of 2015, before recovering again to 2.3% in the third quarter. The two worst-performing sectors were energy and metals and mining, declining by -22.9% and -21.0% respectively in 2015. Sectors that are less directly correlated to oil prices, such as manufacturing and construction, also appear to have softened. Depreciation in the Canadian dollar against the U.S. dollar was expected to increase demand and drive profitability in non-energy sectors; however, the impact has failed to materialize. While economic growth is estimated to be lower than expected at 1.7% and 2.1% in 2016 and 2017 respectively, based on IMF estimates, sustained oil prices at current low levels of \$30/barrel (USD) would further reduce these growth forecasts. To address the negative economic impact of lower oil prices, the Bank of Canada (BoC) lowered its overnight rate from 0.75% to 0.5% in July and decided to maintain this rate on January 18, 2016.

In the Canadian bond market, the yield curve continued to shift downwards in 2015, with 10-year government yields declining by 39 basis points (bps) over the year. Declining yields contributed to the positive performance of bonds, with the FTSE TMX Universe Bond Index gaining 3.5% on a 1-year basis. The FTSE TMX Universe Government Index (+3.8%) outperformed the FTSE TMX Corporate Bond Universe Index (+2.7%) over the same period as a result of widening credit spreads.

In the foreign bond market, U.S. bonds, represented by the Barclays U.S. Aggregate Bond Index, returned 0.55% in USD (+20.6% in CAD) for the year. The U.S. high-yield sector was the biggest underperformer, impacted by weakness in commodity-related issuers. The Citigroup World BIG Bond Index returned 15.7% in CAD (-3.9% in USD). Global corporates and other spread sectors underperformed government bonds due to increased volatility and uncertainty in the market. That being said, global bond indices performed well in Canadian dollars, largely due to the currency depreciation of Canadian dollar (-16.6%).

Bond Markets Performance (Canadian Dollars)

Asset Class	Index	2015 (%)
Canadian Bond	FTSE TMX Bond Universe	3.5
Canadian Government Bond	FTSE TMX Governments	3.8
Canadian Corporate Bond	FTSE TMX Corporate Bond Universe	2.7
U.S. Bond	Barclays Intermediate Aggregate Bond	22.2
Global Bond	Citigroup World BIG Bond	15.7
Canadian Cash	FTSE TMX 91-Day T-Bill	0.6

Source: PC Bond, Zephyr Style Advisor, CIBC Asset Management, as of December 31, 2015

Bonds are an Important Part of a Well-diversified Portfolio

Despite the first Fed rate hike in 10 years and expectations for continued hikes in 2016, bonds remain an important part of a well-diversified portfolio.

Asset Class Returns (Annualized Returns)

	50s	60s	70s	80s	90s	00s	2007-2015
Canadian Equities	13.2	10.0	10.4	12.2	10.6	5.6	3.0
Global Equities	18.6	8.3	7.9	19.9	14.5	-3.0	6.1
Canadian Bonds	1.6	3.6	6.6	13.2	10.1	6.7	5.1
Canadian Cash	2.1	4.5	7.3	11.9	6.4	3.3	1.5
Average Inflation	2.4	2.5	7.4	6.5	2.2	2.1	1.3

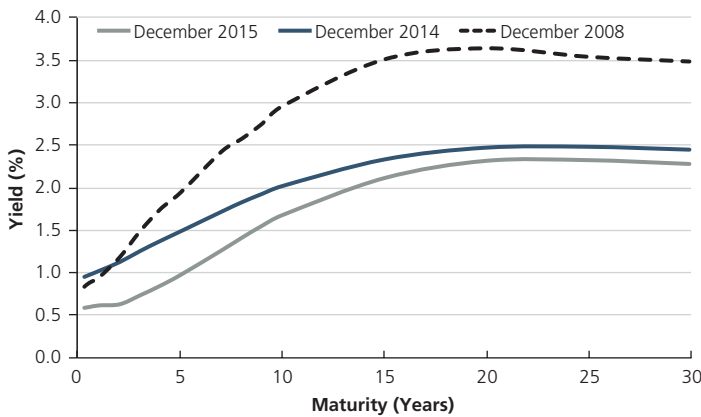
Source: Bloomberg, CIBC Asset Management, as of December 31, 2015

The table above demonstrates the importance of diversification, and the risks involved in avoiding particular asset classes. Bonds dampen the volatility of a portfolio, helping to deliver a return pattern that is consistent.

Yield Spreads

The Canadian government bond yield curve continued its decline in 2015, with yields falling across all maturity levels. The Canadian 10-year government yield spread (the spread between the 10-year and Canadian 91-day T-bill rates) remained at 1.10 at the end of 2015. As we entered January, the yield on five-year Government of Canada bonds fell below the overnight rate (0.75%) after the BoC's decision to keep rates unchanged. This reaction resulted in an inverted yield curve at the short end, reflecting market expectations that the BoC will lower interest rates again in response to deteriorating economic conditions.

Canadian Government Yield Curve Changes

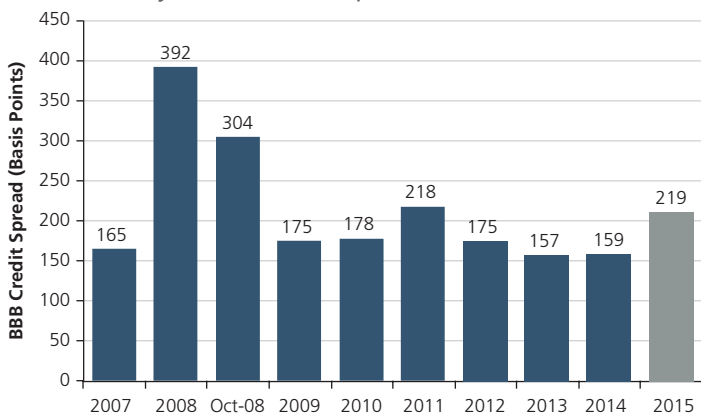


Source: CIBC Asset Management, Bloomberg, as of December 31, 2015

Credit Spreads

Canadian 10-year BBB credit spreads widened, from 159 bps on December 31, 2014 to 219 bps on December 31, 2015, as spreads on BBB-rated corporate bonds increased. The widening spreads were in large part caused by default fears in distressed commodity-linked sectors such as energy and materials.

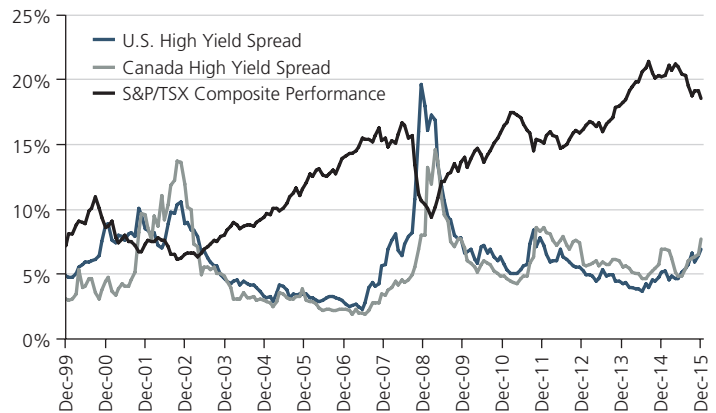
Canadian 10-year BBB Credit Spread (2006 – 2015)



Source: Bloomberg, CIBC Asset Management, as of December 31, 2015

The high-yield market was dominated by weakness in the energy sector, as well as commodity-linked sectors such as metals and mining. The sustained collapse in commodity prices created divergence within high-yield credit spreads, with commodity sub-sectors priced at distressed levels, while the remainder of the high-yield sector priced near long-term averages. Emerging market volatility and uncertainties surrounding Greece's debt restructuring brought about increased global volatility throughout the year. After a 5-year downward trend from the peak of 20%, the U.S. high-yield credit index spread (the difference between the yield of the Bank of America Merrill Lynch U.S. High Yield Master II Index and that of the Bank of America Merrill Lynch U.S. Treasury Master Index) rose to 7% as of December 31, 2015. The Canadian high-yield credit index spread (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) has historically closely followed U.S. high-yield spread trends, and as of December 31, 2015, reached 7.8%.

High-yield Credit Spreads vs. S&P/TSX Composite Index (1999-2015)



Source: Bloomberg, CIBC Asset Management, as of December 31, 2015

Tactical Asset Allocation Opportunities Global Economic Outlook

A **sluggish global economic expansion** remains our central scenario, with expected global growth around 3.1% versus consensus expectations closer to 3.4% at the start of 2016. The continuing recovery in developed markets should offset an expected slowdown in some emerging economies, particularly China and Brazil. The U.S. consumer should remain the strongest-growing segment of the global economy, while the manufacturing and industrial segments of the Chinese economy will continue their necessary deleveraging. The uncertainty resides in the degree to which the manufacturing weakness can spill over to the service side of the global economy and produce a weaker outcome. So far, the service segment of the global economy is holding up relatively well, supporting our forecast for global growth. We account for some of this spillover risk in our below-consensus global growth view as well as our benign outlook for the Fed's monetary policy renormalization process. On a positive note, for the first time in quite a while, fiscal policies should support global growth – this represents an interesting change in the policy mix. Fiscal policies will ease across the major economic areas. The fiscal expansion in the U.S. and Japan could be in the neighborhood of 0.2% of GDP. A larger 0.3-0.4% fiscal boost in the euro area is also possible, while China's fiscal initiatives could also support growth, according to various estimates. While not extravagant, this additional economic stimulus should help at a time when monetary policy may become less effective.

On the inflation front, the negative impact of the oil price drop should dissipate from headline inflation numbers, as the energy decline should moderate over the coming months. Indeed, the oil market may be approaching an inflection point. The sharp oil price decline should force adjustments such as cutbacks in investment, as well as actual oil production, both of which should help reduce supply relative to demand. This scenario would help energy prices stabilize and experience a mild price recovery. Core inflation should increase as the global economy's sluggish expansion continues to remove excess capacity.

In particular, wage growth should continue to improve modestly in the U.S. and Japan, supporting long-term inflationary pressures from a low base. Meanwhile, high unemployment in Europe should keep wage pressure dormant for a while longer. Global inflation is expected to pose no obstacle to continued easy monetary policy over the next 12 months in most regions, with the possible exception of the United States. We are maintaining our sluggish economic expansion as our primary economic scenario for 2016.

Our main risk scenario for 2016 focuses on the possibility that major central banks may be reaching the limits of unconventional monetary policies. Our concern in this scenario is that some central banks – first and foremost the BOJ, the Swiss National Bank (SNB) and, to a lesser extent, the ECB – may reach institutional and/or political boundaries. These could limit the use of unconventional policies like asset purchase programs, which have been instrumental in supporting the economic recovery and asset markets. A growing body of research shows that there are limits to the use of unconventional policies and that these limits could be approaching. For example, the BOJ could see its ability to buy Japanese Government bonds diminish rapidly over the coming one to two years. The SNB foreign currency intervention already represents a sizable portion of its GDP, running the risk of large fiscal deficits. The ECB could reach the limits of acceptable negative interest rates, estimated to be around -0.75%. Large negative interest rates could motivate investors to pull money out of the financial system, creating a liquidity run on the banking system and a loss of monetary policy effectiveness.

At the heart of this scenario is the inability of central banks to address an economic relapse – no additional tools would be available to stimulate growth. The sudden loss of effectiveness of these unconventional policies may create financial market volatility as investors disengage from markets due to declining central bank credibility.

Fixed Income versus Equities

Less Central Bank Support = Flatter Returns?

It was an unusually active and divergent year for central bank policymaking in 2015. The tone was set at the start of the year with the introduction of negative rates and quantitative easing by the ECB, helping to push European equities to new highs and European interest rates even further into negative territory. In the U.S., the year finished with the Fed officially ending its own zero-interest-rate policy. Facing these divergent policies as well as declining commodity prices, equity markets experienced increased volatility in the fourth quarter and produced uninspiring returns. Looking forward, we see the Fed embarking on a renormalization of monetary policy, and other central banks arguably approaching unconventional monetary policy limits. The tailwind behind financial markets previously provided by universally accommodative monetary policies could be fading, resulting in flatter and more volatile financial market returns.

With near-zero policy rates in Canada and the U.S. and little further downside in long-term yields (see fixed income section), expected returns on fixed income assets should remain in the low single digits. Meanwhile, a cross section of valuation ratios towards the end of 2015 indicates that global equities are trading around fair valuation. However, this represents an average, and masks a wide distribution around this average valuation. For example, equity markets and sectors experiencing strong and stable earnings growth come at a hefty valuation premium. In contrast, markets and sectors with poor earnings momentum are very cheap, leaving investors with very difficult choices. With less central bank policy support, equities are unlikely to gain from expanding valuations, leaving earnings as the only growth engine for equity market returns. Given that our forecasts for global economic activity point towards sluggish, but positive, earnings growth, we forecast mid-single digit returns for equity markets over 2016 – with equities mildly more attractive than fixed income. However, with increasing uncertainty around monetary policy and continued downside risk in emerging markets, equity outperformance is likely to come with higher volatility.

Equity Market Outlook

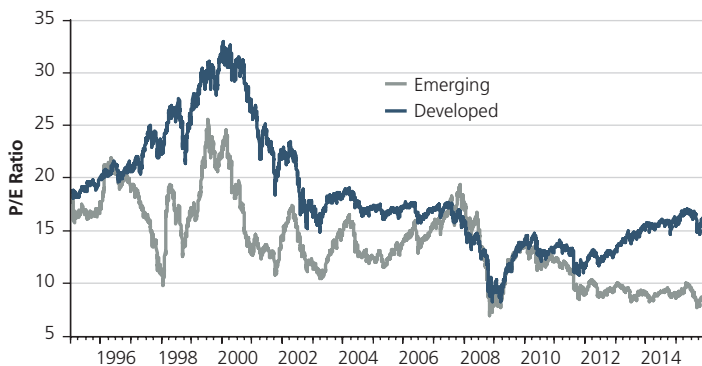
Not Yet Time to be a Contrarian

The commodity boom-bust cycle continues to wreak havoc on global markets. The wide valuation dispersion in equities is in large part due to resource versus non-resource sectors. The resource sectors (energy, materials, minerals, etc.) are cheap, with depressed earnings; non-resource sectors, particularly the consumer sectors, are expensive, with peaking earnings. With commodity prices still falling, it will be difficult to pinpoint the maximum divergence between these main sectors. Given our central scenario of sluggish growth, valuation dispersion might get wider before we see the gap between these sectors reversing. At some point these market dislocations will trigger a response that could mark the beginning of a period of strong performance from the beaten-down sectors. Given our view that commodity prices could reach lower levels before recovering, we remain neutral on the Canadian equity market for the moment.

Emerging market (EM) equities have faced headwinds from slower growth in China, weak commodity prices and expectations of rising U.S. interest rates. The recent EM equity underperformance has resulted in very attractive valuations. Based on our long-term return forecasts, emerging markets represent one of the most attractive asset classes. As their currencies depreciate, EM companies grow more competitive and earnings should improve. Meanwhile, EM real rates have declined just as they start to rise in the developed world. Relative to other regions, emerging countries have seen a significant improvement in their monetary conditions. At this point, we need the growth outlook to stabilize, especially in China, to see an improvement in the relative performance of EM equities. But patient investors following a valuation discipline should be rewarded over the medium-to-long term and should remain overweight.

In many respects, the U.S. equity market faces a different set of circumstances than EMs. U.S. stocks are among the most overvalued. From a cyclical perspective, U.S. companies must cope with a strengthening U.S. dollar and a Fed that is expected to continue to raise interest rates, pushing financing costs higher. We continue to expect the U.S. market will offer the least attractive prospects over the coming year, and it remains our least-favoured market. Meanwhile, international equity markets fall between the previous two groups. On one hand, they are neither cheap nor expensive, but they continue to benefit from a very accommodative monetary policy stance. They are also seeing profit growth improve at the margin, which leaves them overweight in our regional strategy. The following graph illustrates the relative increased valuation levels of developed versus EM equities.

Emerging Versus Developed Markets P/E Ratios*



Source: Thomson Reuters Datastream, CIBC Asset Management, as of December 31, 2015
 *The denominator "E" in the P/E ratio is based on Robert Shiller's cyclically-adjusted earnings (10-year average of real earnings). The series is adjusted further by CAM Asset Allocation and Currency team, utilizing a smoothing methodology which results in more dynamic earnings estimates.

Fixed Income Outlook

Growing Divergence

- In light of the contrasting outlook between the U.S. and Canadian economies, we are now penciling in a **12-month target of 2.50% for U.S. 10-year Treasuries and 1.50% for Canadian 10-year Treasuries.**
- **We expect the Fed will remain the only central bank in developed countries with a tightening bias.** This will contribute to the challenge for the U.S. to renormalize monetary policy.

Over the past year, our more constructive view on fixed income versus market consensus proved to be justified. The U.S. renormalization process was delayed by developments abroad, while ongoing weakness in oil prices continued to be a drag on the Canadian economy. The Fed has now officially marked the beginning of its journey towards normal monetary policy by implementing its first rate hike in more than nine years. Should we expect this to be the beginning of a prolonged bear market for bonds?

Our assessment of the world economy over the next 12 months suggests only marginally higher yields in the U.S. and virtually unchanged yields in Canada. In Canada, we see persistent domestic weakness and a slower normalization

process than is currently priced in by market consensus, despite ongoing improvements south of the border. Here are some of the factors contributing to our view:

The quantitative easing of both the BOJ and the ECB should, at a minimum, provide a ceiling to rising yields in these economies. These two major central banks are well advanced in the use of non-conventional monetary policies. However, the Bank of China is far from the zero-interest-rate boundary and has more leeway to ease monetary policy and keep interest rates low. China's actions should also create a ripple effect for other Asian countries as they try to remain competitive vis-à-vis the region's powerhouse.

Lower energy and commodity prices should also help to keep yield increases in check. While the impact will be obvious in Canada, it could also indirectly force the Fed to be patient to avoid triggering a crisis led by commodity-driven emerging countries.

Another consideration in assessing the direction of bond yields in the next year is the implicit tightening that has already occurred through the rise of corporate yield premiums over government securities. Corporations at the lower end of the credit quality spectrum have seen their financing conditions deteriorate substantially. Further action by the Fed could be a tipping point unless improvements are made on the business side.

Under these circumstances, we believe that fixed income securities, whether government, agency or higher-quality corporate, should provide a decent level of return and protection through this challenging period.

Strategic Asset Allocation

ABCs of Asset Allocation

Asset allocation – or the distribution of an investor's assets among stocks, bonds and cash (and potentially other areas) – is the key ingredient in creating and maintaining a solid investment plan. Studies have shown that over the long term, the most important determinant of a portfolio's return potential is its asset allocation¹.

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. The key to the investment process is to find an asset mix that meets the objectives of the individual investor. There are two approaches to asset allocation: strategic and tactical. Strategic asset allocation is more focused on the risk level and lifestyle objectives of the investor (i.e., capital preservation, income or growth). Strategic allocation operates best within a longer time frame, such as five or more years. In contrast, tactical asset allocation tends to focus on maximizing an investor's return over the near term or the next 12-18 months. Tactical asset allocation introduces a market timing approach to asset allocation, and is typically more suited for trading oriented investors, looking to add incremental return potential to their portfolio. This section focuses on the portfolio, or strategic approach, to asset allocation.

¹ Source: Financial Analysts Journal May/June 1991, Determinants of Portfolio Performance II: An Update by Gary Brinson, Brian Singer and Gilbert Beebower.

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

Objectives and Constraints

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. For this reason, we recommend investors maintain an updated Investment Policy Statement, which clearly describes these objectives and constraints, and provides a solid foundation for the investment plan. The table at the bottom of the page demonstrates a generic guideline of the main objectives and constraints for each investor profile. CIBC Wood Gundy has developed the Money Compass™ as a tool to help investors find their appropriate investor profile to create an Investment Policy Statement.

CIBC Wood Gundy Money Compass™ Questionnaire

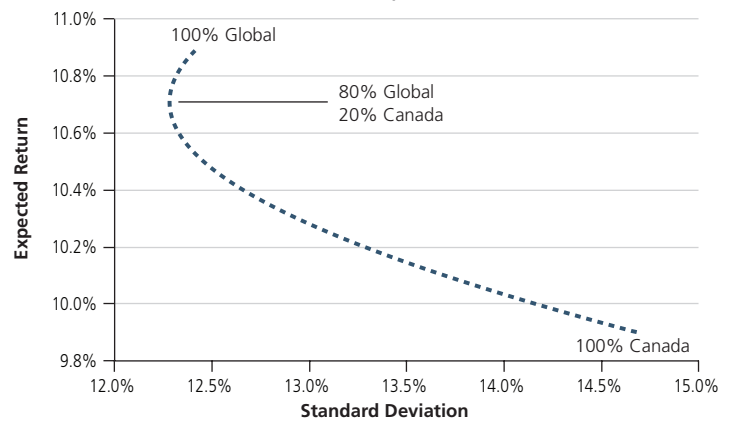
Determining the optimal investor profile is one of the most important steps in the long-term strategic asset allocation process. When selecting an appropriate profile, it is necessary for an investor to determine long-term return objectives, as well as risk tolerance. Importantly, one's tolerance for risk 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. To help with this process, we encourage investors to work together with their advisors using tools such as the CIBC Wood Gundy Money Compass™ Questionnaire. This tool is educational and can help individuals better understand their risk tolerance level.

Advantages of Adding Global Equity, Global Debt and High-yield Debt to the Model

In this year's edition of the strategic allocation paper we have replaced the Canadian-only model with a global model to reflect a growing demand from the Canadian investors for international investments.

Over the past 65 years, global equities have exhibited lower risk and better return characteristics than Canadian equities. Consequently, adding global equities to a Canadian portfolio has increased its return and lowered its risk (volatility). In fact, the optimal (risk-minimized) pure equity allocation (no bonds, no cash and no global constraints) over the past 65 years is 21% Canadian equities and 79% global equities.

Historical Risk/Return Relationship (1950-2015)



Source: CIBC Asset Management, as of December 31, 2015

Similarly, investment-grade global bonds provide diversified exposure to the economies and currencies of various countries globally. They are considered a low-risk investment within the fixed income universe as they are issued by investment-grade issuers and governments of developed countries with minimal probability of defaults. As such, they provide the necessary downside risk protection in a fixed income portfolio. Country-specific systematic risks such as inflation, macroeconomic policy and other geopolitical risks can be diversified away and minimized by investing in a basket of developed countries' debt opportunities. Moreover, expanding the opportunity set into new global markets provides opportunities for additional yield in times when domestic yields are low.

In addition to global equity and debt, we have added a high-yield component to our model. As a hybrid asset class with both debt and equity characteristics, high-yield debt provides diversification benefits to a balanced portfolio. This asset class also offers greater interest rate spreads versus investment-grade issuers mainly to compensate investors for the additional risk taken when investing in these securities.

Credit spreads are a function of the issuer's credit quality and financial performance. Divergences in credit spreads between investment-grade and high-yield debt reduces the return correlation between these two asset classes. Conversely, the return correlation of high yield debt and equities is low (but still positive), and increases in times of crisis as issuer fundamentals impact both spreads and equity performance. 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.

The diversification benefits of high yield versus debt are also attributed to the shorter duration of the asset class in comparison to non-floating fixed income alternatives. For 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.

In the analysis that follows, we used a global equity benchmark to represent global equities, an aggregate bond index benchmark to represent global debt and a U.S. high-yield index to represent high-yield debt. 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). It also decreases the geographic risks and offers lower correlation with other Canadian asset classes.

Asset Allocation Based on Long-term Capital Market Assumptions

In this year's release of this paper, we have updated our historical asset allocation models with a forward-looking methodology for estimating return parameters. The methodology is based on long-term estimated returns for the next decade. Financial markets have encountered numerous extreme situations such as the 2008 financial crisis or the current EM volatility, making predictions based on past events more difficult. We believe that forward-looking, long-term estimates of expected returns best capture the current realities of the global economic and financial environment.

Empirical research on strategic asset allocation has shown that forecasts based on extrapolations of past performance have resulted in misleading estimates. A study by the C.D. Howe Institute shows that using data since 1963, the correlation of historical to realized returns for the S&P/TSX Composite Index is highly negative (-63%), with high volatility (6.0%) 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.²

The 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. As part of this analysis, we extended our global model to include global investment-grade debt as well as U.S. high-yield debt.

The asset classes comprising the global model are: Canadian money markets, Canadian equities, global equities, Canadian fixed income, global fixed income and U.S. high-yield debt. Proxy 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 BoA 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).

Secondly, we extended the asset allocation models to include a broader asset mix, which is expected to help improve returns. In addition to the components of the global model, we would also include alternative investments such as infrastructure and real estate, as well as a multi-sector fixed income asset class. The main reasons for adding infrastructure to the portfolio are the additional yields it provides versus traditional fixed income securities and 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 potential for equity-like growth from economic or population growth and other value-add capital projects.

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 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 model would broaden the asset mix and improve its risk/return profile.

The multi-sector fixed income component focuses on managing a wide range of fixed income products 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 domestic and U.S. dollar-denominated EM debt. Tactical allocation based on the multi-asset fixed income portfolio will have lower volatility than a single mandate like high-yield or EM debt. A multi sector-fixed income portfolio will generally excel in a risk-off environment.

When forecasting returns, we ensured that the appropriate long-term risk premiums were positively correlated to the riskiness of the asset class. 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 some bond indices have durations of less than 10 years, it is necessary to add a term premium to adjust for the shorter duration. This term premium would capture the additional compensation that investors should receive for the purchase of longer maturity bonds. To calculate the term premium, we simply subtract the yield to maturity of a zero-coupon government bond that matches the modified duration of the bond index, from the yield to maturity of a 10-year, zero-coupon bond.

² Source: C.D. Howe Institute Commentary NO. 395, Long-Term Returns: A Reality Check for Pension Funds and Retirement Savings, Richard Guay and Laurence Allaire Jean)

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

Equity returns are estimated by adding an average premium of 4% over government bond returns for Canadian and global equities. The risk premium was determined as the risk premium of U.S. stocks over government bond returns using historical data dating back to the 1950s.

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 decided on an appropriate time period for estimating volatility. This is an important step, based on our belief that the relative number of months the economy is in recession versus the growth period will impact long-term return estimates. These periods of recession and growth are determined using economic data from the National Bureau of Economic Research (NBER).

Based on the past 10 years, the number of recession and growth periods more than cover a full business cycle and as such are appropriate for estimating volatility parameters. As a second step, we analysed 10 years of data to reduce the impact of outliers such as the returns seen during the 2008 financial crisis. The outliers, a small number of observations between 1 and 4 months per asset class, were adjusted to approximate the 0.5 percentile value in their respective return distributions. Finally, volatility estimates were compared with their forecasted 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 will result in more stable volatility and correlation statistics and will improve the representation of future performance.

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

Estimated 10-Year Risk and Returns

	Equities (%)		Bond (%)		Cash (%)	HY Debt
	Global	Cdn	Global	Cdn	Cdn	U.S.
Expected Returns	7.0%	6.5%	2.1%	2.4%	1.3%	5.2%
Expected Risk	11.6%	13.7%	5.0%	3.6%	1.1%	9.7%

Source: CIBC Asset Management

The next step in portfolio construction was to determine optimal allocations based on our forecasted and historical assumptions. Portfolios were generated for every combination of cash, bonds and equities, and rebalanced annually, with a 20% maximum cash weighting. Constraint decisions are not taken lightly – they tend to significantly alter the final outcome of the model. We believe the excessively high returns of cash in the 1970s and 1980s are unlikely to occur in the foreseeable future. Amazingly, the best 12-month return for cash was 19.5% in the early 1980s, a far cry from today's 0.5% annual yield.

After generating every possible portfolio combination, the standard deviation and expected long-term returns were calculated for each portfolio. The expected long-term returns and volatility are estimated based on our methodology described above. 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 equity/bond/cash weightings in each segment.

The following chart illustrates recommended allocations based on the broader asset classes. The numbers in brackets indicate the change in allocation from the prior year's version of this paper.

The addition of high-yield and global debt has resulted in significant reallocations for the existing asset classes. In particular for the low risk profiles, a combination of global bonds and Canadian equities reduces the volatility, due to the low correlation between these two asset classes. In addition, the resulting increase in the allocation to Canadian equities for the low risk profiles can help to offset the increase in foreign exposure with the addition of the two international asset classes.

Recommended Asset Allocation for Canadian Investors

	Equities (%)		Bond (%)		HY Debt	
	Global	Cdn	Global	Cdn	U.S.	Cash
Capital Preservation	5(-5)	15(+10)	25(+25)	30(-35)	5(+5)	20
Income	12(-8)	18(+3)	25(+25)	25(-25)	10(+10)	10
Income and Growth	25(-5)	20(-5)	20(+20)	15(-15)	15(+15)	5
Growth	45	20(-10)	20(+20)	0(-15)	15(+15)	0
Aggressive Growth	65(+5)	20(-10)	0	0(-10)	15(+15)	0

Source: CIBC Asset Management

Standard equity-based mutual funds and independently managed portfolios represent only one equity/bond product alternative. Investors should also be aware of other types of managed products when implementing and reviewing their asset allocation strategy. In this part of the analysis, we provide guidance on how to apply our asset allocation estimates to the components of each broader asset class. The allocation to high-yield debt could be further diversified by adding a number of debt instruments, including multi-asset fixed income portfolios, floating-rate notes and U.S. high-yield debt. The allocation within high-yield debt could be further broken down into the following recommended mix: 15% multi-asset fixed income; 35% floating-rate notes and 50% U.S. high-yield debt.

Objective and Constraints of Each Investor Profile

	Long-term Objective		5-Year Annualized Return		(Liquidity) Income Needs	Recommended Time Horizon*
	Return (%)	SD (%)	Best (%)	Worst (%)		
Capital Preservation	3.1	3.1	19.7	2.9	Very High	1 to 3 Years
Income	3.8	4.2	22.0	2.1	High	3 to 5 Years
Income and Growth	4.7	5.9	25.2	0.4	Moderate	5 to 7 Years
Growth	5.7	7.9	29.3	-1.6	Low	7 to 10 Years
Aggressive Growth	6.6	10.2	33.0	-3.6	Very Low	> 10 years

*The recommended time horizon is established using a minimum return of approximately 2 percent per annum, which is the inflation target set by the Bank of Canada
Source: CIBC Asset Management, as of December 31, 2015

Recommended Strategic Mix within the High-yield Asset Class

HY Fixed Income	Weight	Expected Returns	Volatility
Multi-asset Fixed Income	15%	4.0%	8.2%
Floating-rate Notes	35%	5.2%	10.0%
U.S. High-yield Debt	50%	5.2%	9.7%

Source: CIBC Asset Management

The multi-asset 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%). The floating-rate notes are approximated by the BoA Merrill Lynch U.S. Floating Rate Asset Backed Securities Index and U.S. high yield debt by the BoA Merrill Lynch U.S. High Yield Index.

Within global equities, we have included all of the asset classes for which CAM has internal products. An optimal mix of 50% U.S. equities, 20% international equities, 10% EM equities and 20% 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

Equities	Weight	Expected Returns	Volatility
U.S. Equity	50%	6.9%	13.3%
International Equity	20%	7.15%	13.7%
Emerging Markets	10%	8.9%	19.0%
Real Assets	20%	6.6%	13.8%

Source: CIBC Asset Management

Adding Global Equity and Alternatives – Catering to Canadian Investors

Currency exposure from foreign content does add foreign-exchange fluctuations to the portfolio returns in the short run. This is the price of global diversification. However, over a longer time frame, foreign-exchange risk becomes less of a concern. The following table quantifies the volatility of the U.S. dollar against the Canadian dollar over different time frames.

Volatility of the U.S. Dollar Against the Canadian Dollar

	(January 1960 – December 2015)		
	Annualized Standard Deviation (%)	Maximum Annualized Return	Minimum Annualized Return
1-Year Rolling	6.2	29.2	-19.5
5-Years Rolling	2.9	6.8	-9.5
10-Years Rolling	2.0	3.7	-4.8
20-Years Rolling	0.9	1.8	-1.6

Source: CIBC Asset Management and Morningstar Inc., as of December 31, 2015

The range of the annualized foreign-exchange returns narrows with a longer time horizon. It is interesting to note that the annualized return of the U.S. dollar against the Canadian dollar from January 1960 to December 2015 was only 0.7%. The annualized risk, as measured with the standard deviation, decreases from 6.2% on a 1-year time horizon to 0.9% on a 20-year time horizon.

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. On an unhedged basis, foreign exposure 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 a lower risk tolerance will most likely have higher liquidity requirements with (implicit and explicit) liabilities due soon. These investors will have difficulty withstanding the short-term foreign-exchange volatility. Foreign equity products hedged to Canadian dollars provide investors access to the global opportunity set, while minimizing the exposure to foreign-exchange risk.

Starting at the lower end of the risk spectrum, the Capital Preservation profile, we allocate more to fixed income, with some exposure to hedged global equities and infrastructure. We recommend zero allocation to Canadian equities, given that on a hedged basis, global equities have superior return/risk characteristics. In addition, there is already an allocation to Canadian fixed income. Investors with flexibility and higher risk tolerance can position their portfolios further out the risk curve into real estate and a higher allocation to global equities. Aggressive, longer-term investors willing to move out and to the right of the risk curve should expect to be better compensated for increased risk.

The following investor profiles combine Canadian and hedged global allocations:

Recommended Asset Allocation Including Hedged Global Equities

	Equities (%)		Global Infra-structure (%)	Global Real Estate (%)	Bonds (%)	Cash (%)
	EAFE	U.S.				
Capital Preservation	5	10	10	0	55	20
Income	15	20	5	0	50	10
Income and Growth	20	30	5	5	35	5
Growth	25	40	0	10	25	0
Aggressive Growth	35	50	0	15	0	0

Source: CIBC Asset Management

For clients looking into 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

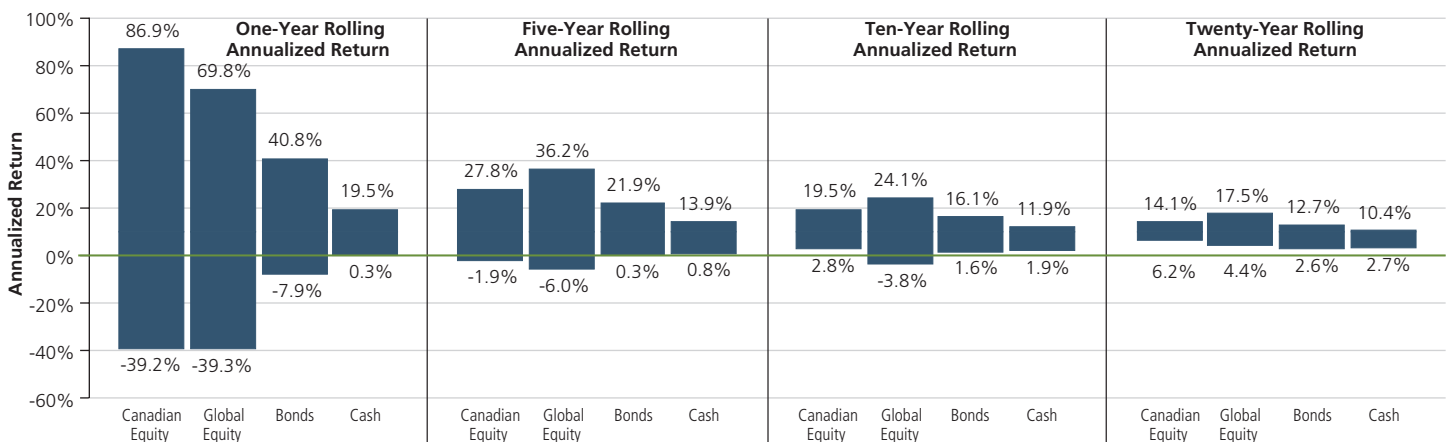
	Expected Return	Volatility	Cdn Equity	Cdn Bonds	Cash
Capital Preservation	2.8	3.0	15	65	20
Income	3.5	4.5	30	60	10
Income and Growth	4.4	7.0	50	50	0
Growth	5.3	9.6	70	30	0
Aggressive Growth	6.1	12.3	90	10	0

Source: CIBC Asset Management

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 come with higher risk.

Equities are Best over the Long Term: Worst and Best Annualized Returns (1950-2015)



Source: CIBC Asset Management, Bloomberg, as of December 31, 2015

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 a portfolio's equity holdings.

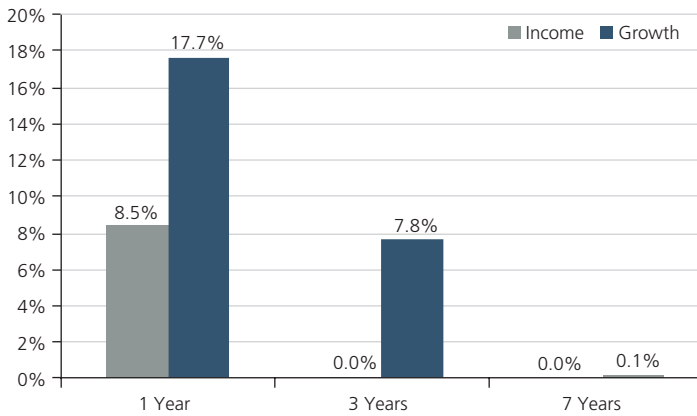
The equity markets have been volatile and most investors would agree that, in the short-term, equities are more volatile than bonds and cash. Investors with very short-term goals should, in general, steer clear of equities and focus on guaranteed investments. However, in the long run, equities continue 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 (0.5% and 2.0%, respectively, as at December 31, 2015). Over the past 65 years, Canadian equities outperformed Canadian bonds in 73.8% of 10-year rolling periods.

Remain Diversified and Fully Invested

It is the length of time in the market that contributes to success, not timing it. 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 also 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 1-year basis, to 0.0% and 7.8% on a 3-year basis and 0.0% and 0.1% for the profiles over a 7-year period.

Percentage of Negative Annualized Returns for the Income and Growth Profiles (1950–2015)

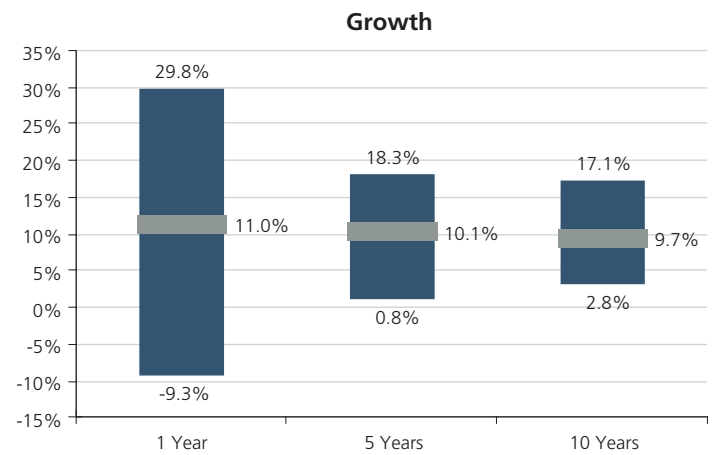
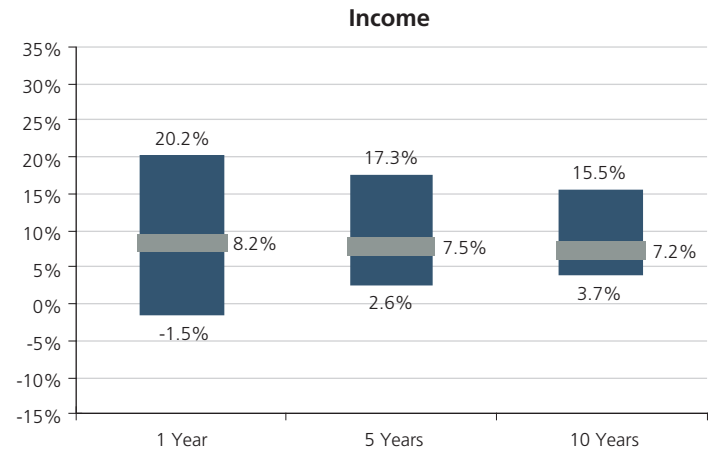


Source: CIBC Asset Management, Bloomberg, as of December 31, 2015

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 profiles from 1950 to 2015, 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. For example, based on the past 65 years, a negative 1-year return of -7.2% or lower for the Growth profile occurred 5% of the time. This compares to a negative 1-year return of -0.2% or lower for the Income profile with the same observed frequency. The lowest 5th percentile return improves significantly with a longer-time horizon. Over a 10-year period, there has been a 5% chance that investors would earn an annualized return of less than 3.4% for the Growth profile, compared to an annualized return of less than 3.9% for the Income portfolio. However, the more volatile Growth profile has greater return potential than the Income profile, as evidenced by its higher average annualized returns across all time periods.

Supported by this data, a link between the time horizon and the investor risk profile should be established. For example, investors with a 5-year time horizon may be comfortable investing in the Income profile. Based on the past 65 years of returns, the Income profile, as shown in the chart above, has a 50% chance of achieving an annualized return of 7.5% or better over a 5-year period, and only a 5% chance of an annualized return of less than 2.6%. We can compare that to the current yield on a Canadian 91-Day T-Bill of 0.5% as at December 31, 2015. Investors may be better off investing in the Income profile which, over the past 65 years, has not produced a return of less than -1.5%.

5th, 50th & 95th Annualized Return Percentiles (1950 – 2015)



Source: CIBC Asset Management, Bloomberg, as of December 31, 2015

The above statistics should be a wakeup call for risk-averse investors who have their money in saving accounts or cash with a 5-year time horizon. Many risk-averse investors unwittingly believe that cash is a safer investment than the Income profile over a 5-year period. This may not be the case. It is very interesting to note that, in the past 65 years, the Income profile never had an annualized return lower than 2.6% on a 5-year basis, while cash did (for example, 0.9% in 2015). Although the Income profile may have higher volatility than cash, most of this 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 5-year time horizon has a high opportunity cost that sacrifices return potential with no or little improvement to downside risk.

We invest to grow our assets, to either fund future expenses or simply increase our net worth. This raises the question: What rate of return do investors require from their portfolios?

Higher Return Expectations Require Riskier Profiles

	Based on a 5-Year Holding Period – Chance of Matching or Exceeding a Targeted Annual Portfolio Return of:				
	2%	4%	6%	8%	10%
Capital Preservation	100	94	52	37	26
Income	100	92	65	40	31
Income & Growth	98	87	71	54	38
Growth	90	82	71	59	51
Aggressive Growth	86	79	71	63	53

Source: CIBC Asset Management, as of December 31, 2015

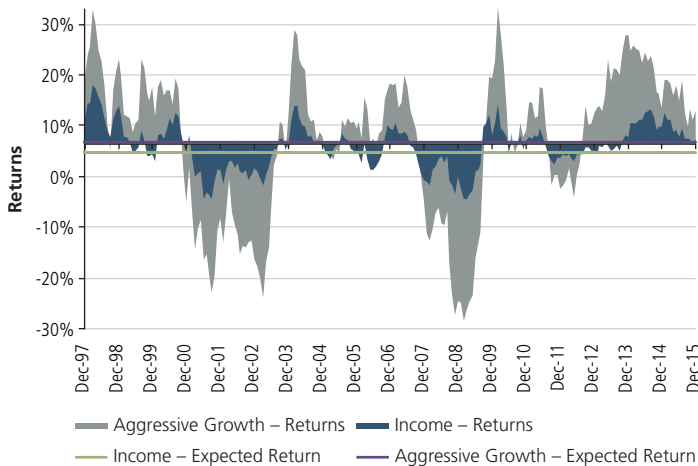
The table above examines the chance of matching or exceeding certain targeted returns over a 5-year period for each of the investor profiles based on return data for the past 65 years. For investors who want their investment portfolio to increase with the target inflation rate of 2% annually, the two most conservative investor profiles have never missed this target return over a 5-year period. But, if expectations are for a 10% annual return, the Capital Preservation profile has only managed this 26% of the time, compared to 53% for the Aggressive Growth profile.

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 an investment portfolio's risk characteristics.

Standard deviation is one of the most commonly used risk measurements in investment theory. Standard deviation measures the variability around the expected return. The lower the standard deviation, the lower the risk.

Variability in Expected Return for the Income Profile vs. Aggressive Growth Profile

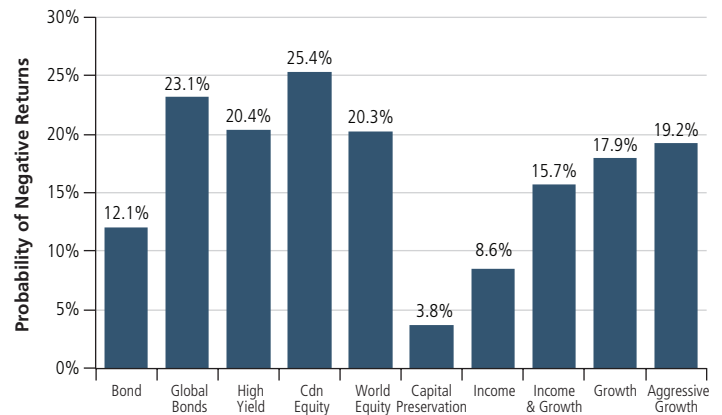


Source: CIBC Asset Management, as of December 31, 2015

The chart demonstrates the risk (variability) for two profiles. The average standard deviation for the Aggressive Growth profile is 10.2%, while the average standard deviation for the Income profile is 5.9%. Clearly, the returns are more variable for the Aggressive Growth profile. However, the expected return for the Aggressive Growth profile (6.6%) is also materially higher than the expected return for the Income profile (4.7%).

Another measurement to quantify risk is the probability of negative returns over a specific period. As shown in the chart below, the Capital Preservation profile has only a 3.8% chance of losing money over a 1-year period, while the Growth profile has a much higher chance, at 17.9%.

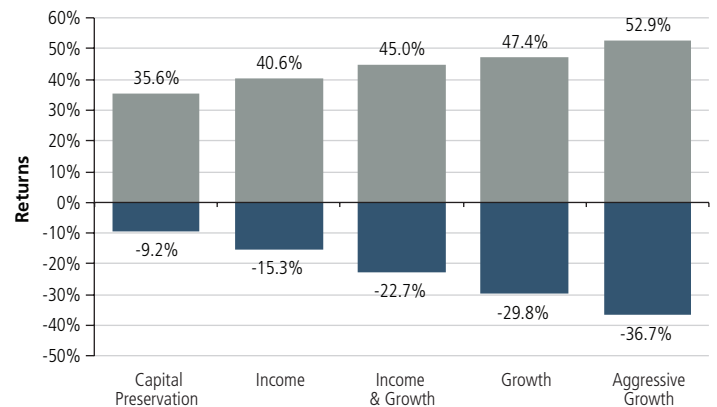
Probability of Negative Annual Returns in a 1-Year Period (1950 – 2015)



Source: CIBC Asset Management, as of December 31, 2015

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 slim chance of experiencing a loss, but if the loss occurs, it may be larger than the investor can tolerate. The worst annual return is a complementary risk measurement that captures the historical magnitude of the downside.

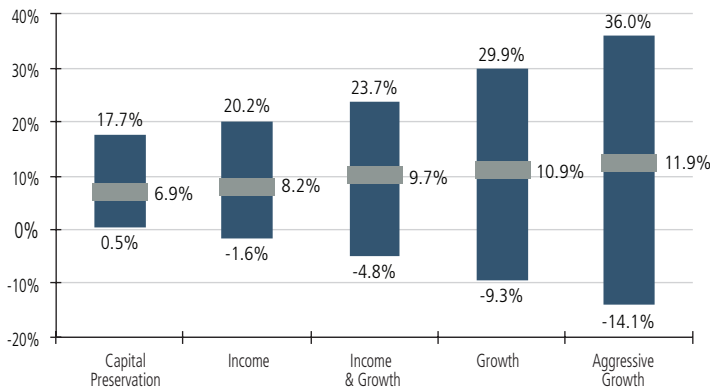
Worst and Best Annual Returns (1950–2015)



Source: CIBC Asset Management, as of December 31, 2015

These extreme returns may have occurred under exceptional circumstances that could be unlikely to happen again in the normal course of events. In light of this, return percentile is a risk measurement that combines the return probability with the magnitude of the 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 to December 2015.

5th, 50th & 95th Annual Return Percentiles (1950 – 2015)



Source: CIBC Asset Management, as of December 31, 2015

Another risk assessment approach is to test how much time an investment required to regain previous highs after a bear market. In other words, how long did it take to regain the previous peak?

Worst Loss (1950 – 2015)

Profile	Maximum Loss (%)	Time Period
Capital Preservation	-9.5	Nov '73 – Dec '74
Income	-17.3	Sept '00 – Aug '03
Income & Growth	-22.2	Sept '00 – Jan '04
Growth	-29.0	March '73 – Sept '74
Aggressive Growth	-37.8	Sept '00 – Feb '06

Source: CIBC Asset Management, as of December 31, 2015

We can also measure how frequently (for one, two or three years) each profile traverses peak to trough and back to the original peak again during the prior 65 years. Impressively, the most conservative Capital Preservation profile only required a year to recover twice in the last 65 years. On the other hand, the Aggressive Growth profile suffered nine periods that required more than a year to recover, three of which took longer than three years to regain the previous peak.

Frequency of Extended Recovery Periods (1950 – 2015)

Profile	3-yrs or More to Recover	2- to 3-yrs to Recover	< 2-yrs 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, as of December 31, 2015

Once again, this demonstrates the importance of time horizons when determining an appropriate investor profile.

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

	Historical Return (%)	Forecasted Long-term Return (%)*	Standard Deviation (%)	Annual Return	
				Best (%)	Worst (%)
Canadian Equity	9.8	6.5	13.7	86.9	-39.2
Global Equity	11.1	7.0	11.6	69.8	-39.4
Canadian Bonds	6.7	2.4	3.6	40.8	-7.9
Global Bonds	6.3	2.1	5.0	40.1	-14.6
High-yield Bonds	8.6	5.2	9.7	48.6	-33.4
Canadian Cash	5.4	1.3	1.1	19.5	0.3

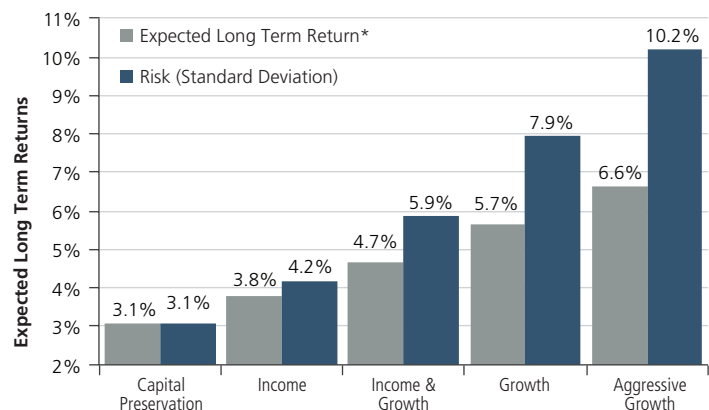
Source: CIBC Asset Management, as of December 31, 2015

*Forecasted returns and standard deviation are estimated based on the methodology described in the previous section while historical returns are based on historical data from 1950–2015 with the exception of the High-yield asset class, which has data from January 1986.

The risk measures discussed earlier 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 this outperformance comes at 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 trade-off between expected profile returns and the assumption of higher risk levels.

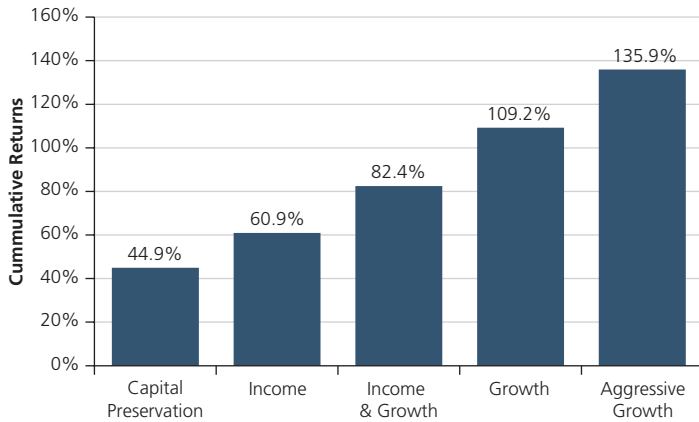
Investor Profiles - Expected Returns and Risk



Source: CIBC Asset Management

To further help illustrate how different asset allocations can alter risk/return parameters, we look at the performance of the different investor profiles in two very different investment environments. The first period is the bull market between April 1, 2009 and December 31, 2015. As the following graph illustrates, the most conservative profile, Capital Preservation, had the lowest cumulative rate of return, at 44.9% in the six and a half year period. As expected, the Aggressive Growth profile recorded the highest rate of cumulative return at 135.9%.

Investor Profile Cumulative Returns (Bull Market)
(April 1, 2009 – December 31, 2015)

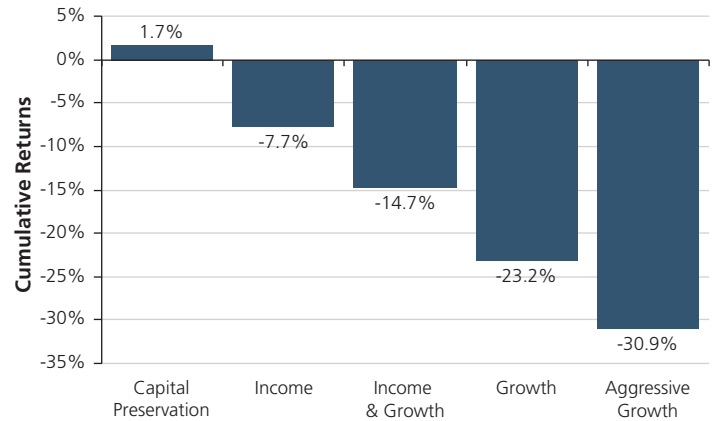


Source: CIBC Asset Management

During bear markets, it has been possible to help protect an investor's capital using strategic asset allocation

The graph to the left illustrates the performance of each investor profile from October 1, 2007 to March 31, 2009. A deep bear market environment still fresh in our memory. Capital Preservation had the highest rate of return at 1.7%. As a vivid example of risk and return in action, investors who had accepted a higher degree of portfolio volatility felt a greater impact. The Aggressive Growth portfolio posted the lowest rate of return at negative 30.9%. In contrast, Global and Canadian equities declined by 34.9% and 35.2% during this period, demonstrating that even a modest 10% weighting in bonds can provide some downside protection.

Investor Profile Cumulative Returns (Bear Market)
(October 1, 2007 – March 31, 2009)



Source: CIBC Asset Management

What Investor Profiles Delivered Over The Past 65 Years

	Equity		Bonds		HY US	Cash	Expected Return* (%)	Expected SD (%)	Monthly Return		Historical Return (%)
	Global	Cdn	Global	Cdn					Best	Worst	
Capital Preservation	5	15	25	30	5	20	3.1	3.1	6.6	-3.8	7.7
Income	12	18	25	25	10	10	3.8	4.2	7.4	-5.4	8.4
Income and Growth	25	20	20	15	15	5	4.7	5.9	9.8	-7.4	9.5
Growth	45	20	20	0	15	0	5.7	7.9	12.2	-11.1	10.6
Aggressive Growth	65	20	0	0	15	0	6.6	10.2	15.0	-15.6	11.7

Source: CIBC Asset Management

Annualized Returns (not annualized if less than 1 year)

	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	
Capital Preservation	15.2	-5.7	23.8	-8.7	35.6	-9.2	21.7	1.7	19.7	2.9	14.5	3.9	29.8
Income	16.6	-8.3	25.9	-12.1	40.6	-15.3	23.7	0.1	22.0	2.1	16.0	3.3	31.3
Income and Growth	17.0	-12.1	28.3	-17.3	45.0	-22.7	27.2	-3.4	25.2	0.4	17.9	2.3	32.2
Growth	19.5	-16.1	31.9	-22.1	47.4	-29.8	33.2	-8.3	29.2	-1.6	20.4	0.4	35.0
Aggressive Growth	24.6	-23.2	38.5	-30.5	52.9	-36.7	38.7	-13.4	33.0	-3.6	22.4	-1.3	35.0

Source: CIBC Asset Management

* Expected Returns and Expected Standard Deviations for the component asset classes are based on 10 year forecasted returns as explained in the previous sections 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 – 2015.

Portfolio Rebalancing

An important consideration is rebalancing a portfolio back to its targeted long-term asset mix. Markets are volatile and on any given day, one asset class will outperform another, thus altering the portfolio asset allocation. Left unchecked, a portfolio may drift away from its long-term asset allocation, leading to added volatility and risk. However, rebalancing back to its targeted asset allocation too frequently may result in greater transaction costs and tax consequences. To test the effects of different rebalancing strategies on returns, volatility and turnover, we used the Growth profile of 20% Canadian equity, 45% global equity, 20% global bonds and 15% high-yield. “Turnover Caused by Asset Class Rebalancing” is the turnover resulting from a portfolio rebalancing from one asset class to another, such as selling equities to buy bonds. This does not include turnover within any asset class, such as buying one equity and selling another.

The Impact of Rebalancing (1950–2015)

Rebalancing Strategy	Historical Annualized Return (%)	Standard Deviation (%)	Turnover Caused by Asset Class Rebalancing (%)
No Rebalancing	10.3	11.2	0.0
Periodic: Annual	10.0	9.2	10.5
Periodic: Semi-annual	10.0	9.2	16.2
Periodic: Quarterly	10.0	9.2	10.5
10% Off Target	10.1	9.2	6.8
15% Off Target	10.1	9.2	5.4
20% Off Target	10.1	9.2	4.1

Source: CIBC Asset Management, as of December 31, 2015

In addition to testing rebalancing strategies periodically, such as annually or quarterly, we included strategies that are triggered if the portfolio deviates from the original targeted asset allocation by a certain percentage. For example, a “15% off target” strategy would be rebalanced if any of the asset class weighting were 15% or more away from the original weighting. “No rebalancing” produces the highest return over the long-term. This return, unfortunately, comes with the price of higher volatility (higher standard deviation). As time progresses, the relative portfolio weight of higher-performing asset classes increases (in this case, equities).

This portfolio drift comes with costs. First, the volatility of the portfolio is significantly higher compared to a portfolio that is rebalanced on a regular basis. Secondly, as the portfolio drifts to a higher weighting in an outperforming asset class, it may no longer match the client’s objectives and comfort level of risk. If not rebalanced, the asset allocation could change dramatically over time from the original allocation. In this case, the original asset allocation of 70% equity (Canadian and global) and 30% bonds and cash drifted to 96.3% equity and 3.7% bonds and cash. This new allocation is more in line with a very aggressive investor compared to the original allocation.

With the “no rebalancing” option ruled out, the question remains “how often to rebalance?” Our research found that rebalancing annually provides optimal results. Semi-annual and quarterly rebalancing resulted in slightly lower volatility and returns, with significantly higher asset class turnover.

Rebalancing when an asset class is 20% off its targeted weighting also produced good results, in line with annual rebalancing but with lower turnover. There are some additional risks with targeted rebalancing strategies. When markets are very volatile, there may be multiple rebalances in one year. This may have an unsettling effect on investors at a time when the markets are disturbing enough on their own. This may also lead to second guessing. Once the 15% off target is breached, there may be a desire to wait for 20%. Since we prefer a disciplined approach for long-term asset allocation; this second guessing would not be optimal. Based on these risks, we continue to advocate a regular calendar year rebalancing.

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 multi-asset fixed income instruments. 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 allocations are 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 return equities should provide despite the increased stability that fixed income offers at a time of increased market volatility.

Regionally, investors are advised to favour international and EM 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. 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.

This research report is prepared by CIBC Asset Management Inc. for and on behalf of CIBC Wood Gundy.

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