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CANADIAN ETF Watch

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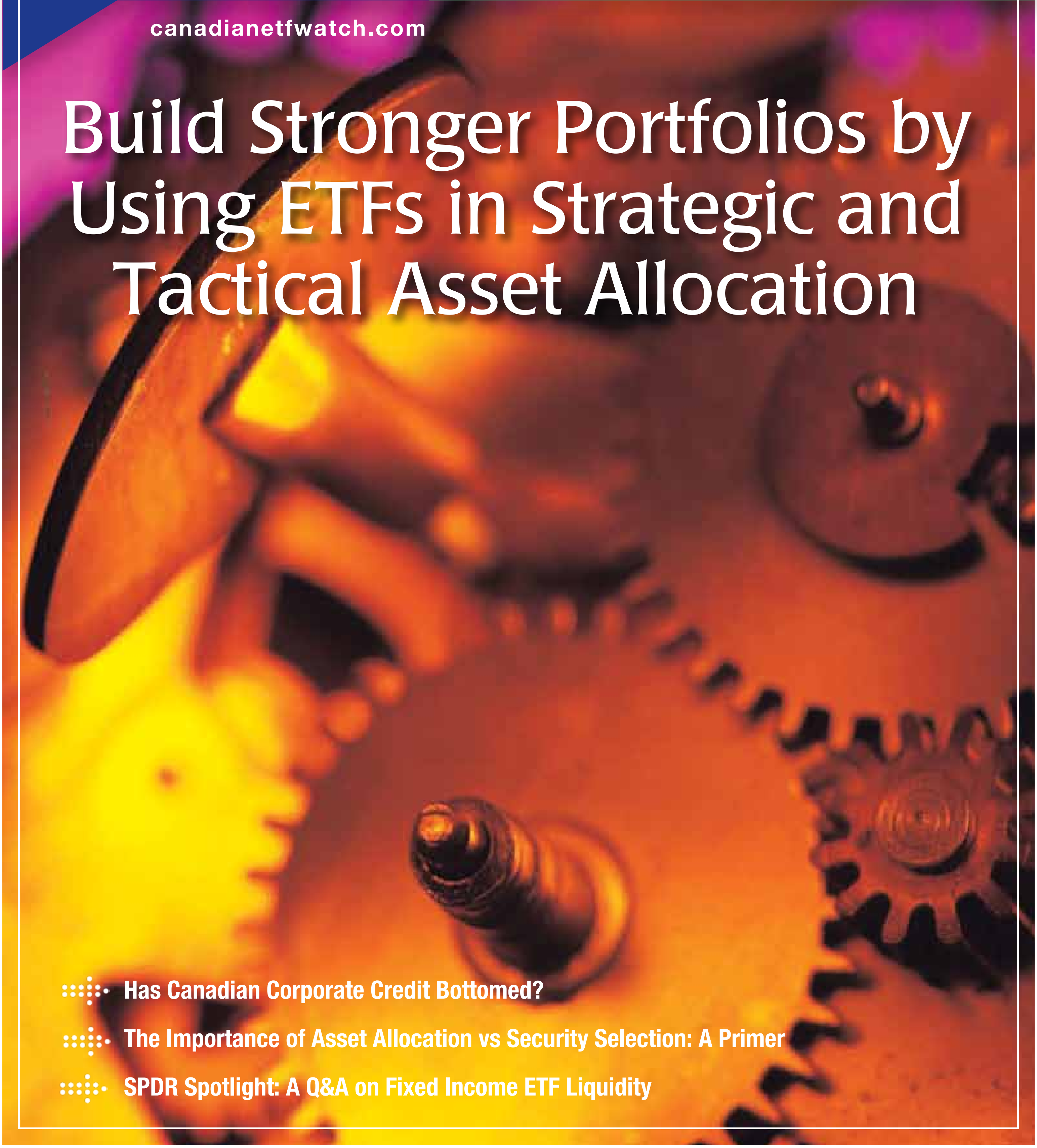

Build Stronger Portfolios by Using ETFs in Strategic and Tactical Asset Allocation

- Has Canadian Corporate Credit Bottomed?
- The Importance of Asset Allocation vs Security Selection: A Primer
- SPDR Spotlight: A Q&A on Fixed Income ETF Liquidity

2016 CALENDAR OF EVENTS

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Exchange Traded Forum (ETF) 7th Annual

Tuesday, April 19 & Wednesday, April 20 ~ Toronto

Canada's leading event dedicated to **Exchange Traded Products**. Hear from leading financial industry professionals and industry experts who will provide valuable insights into the issues and trends that matter most to Canada's financial professionals. Join us for presentations, advisor/client-focused sessions, roundtable discussions, networking events and knowledge sharing critical issues facing the financial industry. This is an opportunity for IIROC based financial advisors and also Portfolio Managers to gather together in a great location to network, learn from each other, and participate in the numerous educational opportunities that fill the agenda.

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VANCOUVER

Niagara Institutional Dialogue (NID) 7th Annual

Mon., June 20 to Wed., June 22 ~ Niagara-on-the-Lake

Niagara Institutional Dialogue is Canada's premier institutional event with an academic angle and a focus on education & open dialogue. NID is an invitation-only symposium creating a forum for open dialogue and debate issues facing Canada's foremost institutional investors. The distinguished speaking faculty assembled each year includes academics, authors, policymakers, journalists, consultants and select practitioners. A selected group of senior representatives from Canadian pensions and family offices will participate in three days of informative discussions, education and networking. This confidential closed-door event is reserved for select industry participants.

Niagara Institutional Dialogue

InstitutionalDialogue.com

World Alternative Investment Summit (WAIS Canada)

Wed., Sept. 7 to Fri., Sept. 9 ~ Niagara Falls 15th Annual

WAIS Canada is in its 15th year and is Canada's largest gathering of **alternative and exempt market investment professionals** and service providers. Featuring panel discussions with top-level Canadian and international speakers, fund managers and leading service providers, WAIS Canada brings together over 300 delegates to explore every side of **alternative** investments. WAIS Canada is a popular annual event that is not to be missed.

WAIS CANADA

waisc.com

World Alternative Investment Summit (WAIS Bermuda)

Wed., Sept. 28 to Fri., Sept. 30 ~ Bermuda 1st Annual

WAIS Bermuda is in its 1st year and is a large gathering of of **alternative** investment professionals and service providers. Featuring panel discussions with top-level Canadian and international speakers, fund managers and leading service providers, WAIS Bermuda brings together over 300 delegates to explore every side of **alternative** investments. WAIS Bermuda is a popular annual event that is not to be missed.

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Montebello Institutional Dialogue 1st Annual

Mon., Oct. 17 to Wed., Oct. 19 ~ Montebello, Quebec

The **Dialogue Institutionnel Montebello** is produced by Radius and modeled after the immensely successful Niagara Institutional Dialogue (NID) held annually at Queen's Landing, Niagara-on-the-Lake, Ontario, now in its seventh consecutive year. Fairmont Le Chateau Montebello in Montebello, Quebec, was historically founded as a private club in 1930, the resort is the world's largest log cabin, nestled in the heart of the scenic Montebello Village, and has hosted many political figures and royalty. This is an inspiring event at a unique venue, where plan sponsors can gather, discuss, debate and learn from industry experts, authors and their peers.

Montebello Institutional Dialogue

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Assets invested in ETFs/ETPs listed globally reached a new record high US$3.137 trillion at the end of April 2016, according to preliminary data from ETFGI's April 2016 global ETF and ETP industry insights report.

Record levels of assets were also reached at the end of April for ETFs/ETPs listed in the United States at US$2.217 trillion, in Canada US$77.42 billion, in Europe US$533.34 billion, in Japan US$145.93 billion and in Asia Pacific ex-Japan which reached US$125.21 billion.

At the end of April 2016, the Global ETF/ETP industry had 6,297 ETFs/ETPs, with 12,126 listings, assets of US$3.137 trillion, from 283 providers listed on 65 exchanges in 51 countries.

"Following a strong market performance in March the S+P 500 index was up just 0.39% in April. Developed markets ex-US were up 3.20%, while emerging markets ended up 1.05%. The S+P GSCI commodity index was up 10.14% in April. There is still a significant amount of uncertainty in the markets due to the upcoming Brexit vote, the US election, the efficacy and future of QE programs around the world." according to Deborah Fuhr, managing partner at ETFGI.

In April 2016, ETFs/ETPs listed globally gathered net inflows of US$10.13 Bn this marks the 27th consecutive month of net inflows. Fixed income ETFs/ETPs gathered the largest net inflows with US$7.73 Bn, followed by equity ETFs/ETPs with US$2.39 Bn, while commodity ETFs/ETPs experienced net outflows with US$136 Mn.

YTD through end of April 2016, ETFs/ETPs have seen net inflows of US$79.402 Bn. YTD record level of net new assets have been gathered by fixed income ETFs/ETPs with US$48.66 Bn, Commodity ETFs/ETPs with US$14.425 Bn, leveraged inverse ETFs/ETPs with US$4.67 Bn and Inverse ETFs/ETPs with US$2.39 Bn.

Source: ETFGI.com

Deborah Fuhr
Managing Partner
ETFGI

Tony Sanfelice, *President & CEO*

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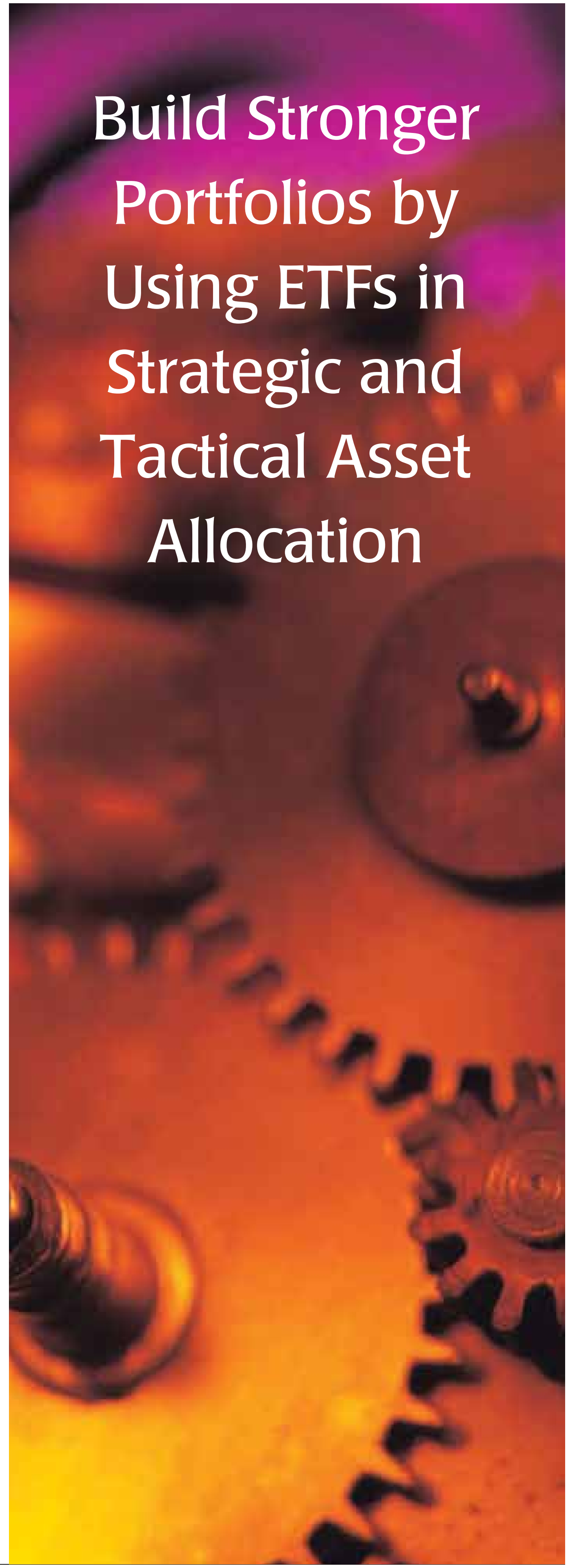

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Build stronger portfolios by using ETFs in strategic and tactical asset allocation.

PAUL TAYLOR

Senior Vice President and Chief Investment Officer, Asset Allocation at BMO Asset Management Inc.

It has been almost 10 years

since the first waves of the housing bubble began rippling through the markets, eventually cresting into a global financial crisis. An important lesson that investors learned from those difficult circumstances was the need to capitalize on tactical opportunities while maintaining long-term strategic goals. Of the different approaches to portfolio construction, one that is gaining in popularity is the integration of exchange-traded funds (ETFs) into strategic and tactical asset allocation approaches to create well-diversified, cost-effective portfolios.

A strategic asset allocation approach is the long-term (i.e., a time horizon of more than one year) asset mix that can provide specific ranges to help investors reach their financial goals, given their personal objectives and constraints. Tactical asset allocation, on the other hand, consists of shorter-term adjustments that aim to add value by exploiting changing markets.

“One way to explain the difference between strategic and tactical asset allocation is with a driving-related analogy,” says Paul Taylor, Senior Vice President and Chief Investment Officer, Asset Allocation at BMO Asset Management Inc. “Think of strategic asset allocation as the road that takes you from the start of your journey to where you want to end up, while tactical asset allocation is everything that happens ‘between the guard rails’ on this road, from manoeuvering through traffic to adapting to changing weather conditions.”

To see how this manoeuvering can work in a portfolio, consider the example of the significantly disparate returns among equity markets in 2015. As at December 31, 2015, the one-year returns (in Canadian-dollars) for the S&P/TSX Composite Index, the S&P 500 Index and the MSCI EAFE Index were -8.32%, +21.59% and +19.46%, respectively.[1] If a portfolio’s strategic asset allocation was set at 30% each for Canadian, U.S. and EAFE equities, then an astute asset allocator could have added value tactically by temporarily decreasing the portfolio’s Canadian equity exposure to 25%, and adding 2.5% each to the portfolio’s U.S. and EAFE equity exposures.

How to achieve “true” diversification

True diversification is key to effective portfolio management, so it’s crucial to implement a sound approach. Taylor suggests a five-step portfolio diversification process. First, start by allocating assets between equities and bonds, which is the “risk-on/risk-off” step of the process. Second, within equities, choose between developed markets and emerging markets. Third, within developed markets, make regional allocation calls (e.g., Canada, U.S., Europe, Asia). Fourth, focus on bonds and allocate among credit, duration and regional exposures. Fifth, make currency decisions, which is an increasingly important consideration in today’s markets.

The role of ETFs in asset allocation

One growing trend in portfolio strategies is the use of ETFs. Given their flexibility and fluidity, ETFs can allow for greater precision compared to broad-focused mutual funds. For example, not only can ETFs instantly offer diversified exposure to U.S. equities, but you can also move easily between hedged or unhedged positions based on your view of currency exchange rates. Similarly, a professional asset allocator may want eurozone exposure without the need to undertake detailed securities analysis or hire a specialized team to manage a European sleeve. With ETFs, you simply apply a basic screen, make your selection and gain the desired eurozone exposure in one easy trade.

ETFs can also serve as useful tools within other asset allocation strategies. They can be used for the “core and explore” component of a portfolio, where broad-based ETFs or mutual funds act as the core of a portfolio’s allocation, while highly focused ETFs can act as satellites that explore smaller markets or niche sectors. If you believe the market is undervaluing financials, for example, you can tactically allocate assets into a financials sector ETF, while maintaining your broad market exposure. Capital markets are generally efficient, but any slight deviations offer the opportunity to make short-term tactical adjustments in a portfolio.

ETFs can also form part of a tax-loss strategy. An investor in a capital gains position can sell a security – perhaps the stock of an oil producer – at a loss, and then purchase an energy sector ETF. In doing so, the investor offsets some or all of their capital gains with the loss, while maintaining energy sector exposure and preserving the established strategic asset allocation.

Furthermore, ETFs can be used as a portfolio completion strategy. If an investor owns banks stocks and other large-capitalization Canadian equities, for instance, they can round out their Canadian equities exposure with a Canadian small-cap ETF.

Whether investors choose ETFs or ETF-based mutual funds, they will have the building blocks required for effective strategic and tactical asset allocation, helping create strong, risk-adjusted portfolios.

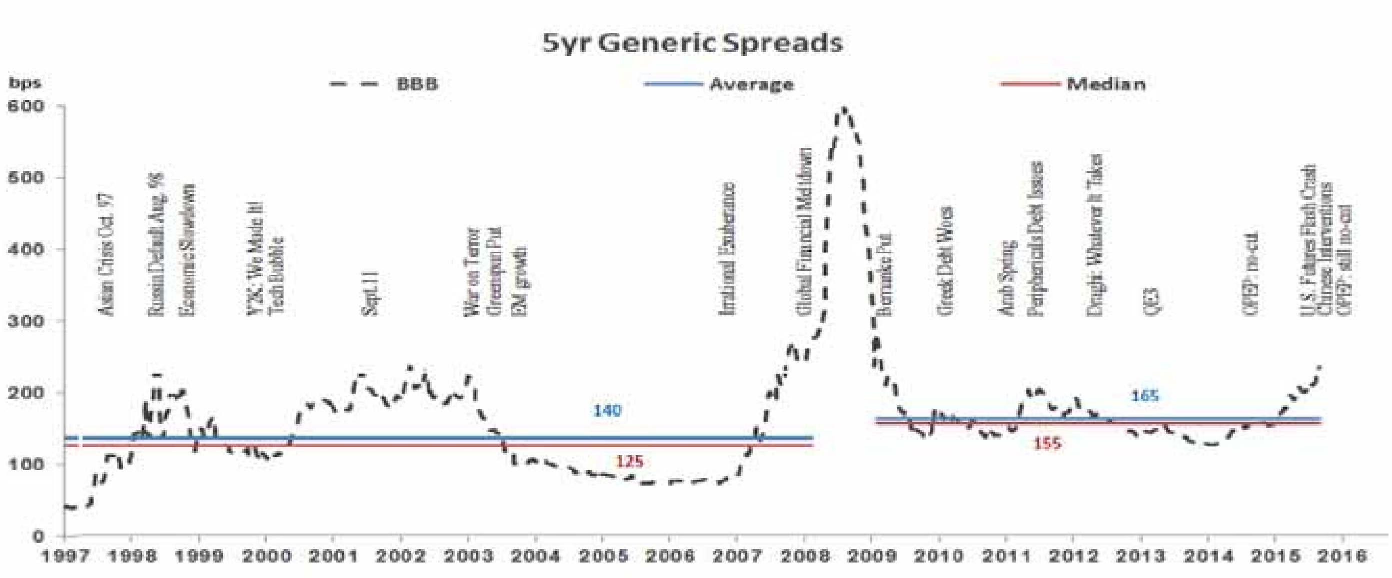
1. Source. Bloomberg as of December 31st , 2015.

Has Canadian Corporate Credit Bottomed?

Now could be the ideal time for Canadian investors to take advantage of compelling valuations in Canadian corporate bonds, according to Fiera Capital Corp. ("Fiera").

Canadian corporate credit spreads — the difference between yields earned on corporate bonds and government of Canada bonds — are well above their 20-year average. Spread widening is usually an indication of financial or economic stress. While current conditions in Canada have been impacted by a slowdown in corporate growth, lower commodity prices, a lower dollar, and a slow-down in corporate growth, they are not expected to deteriorate to the levels experienced during the global financial crisis. This makes Canadian Corporate investment grade bonds a potentially attractive opportunity for investors, particularly as an alternative to government bonds.

The following historical 20 year table shows the five-year, BBB Canadian corporate bond spreads over five-year, Government of Canada bond.

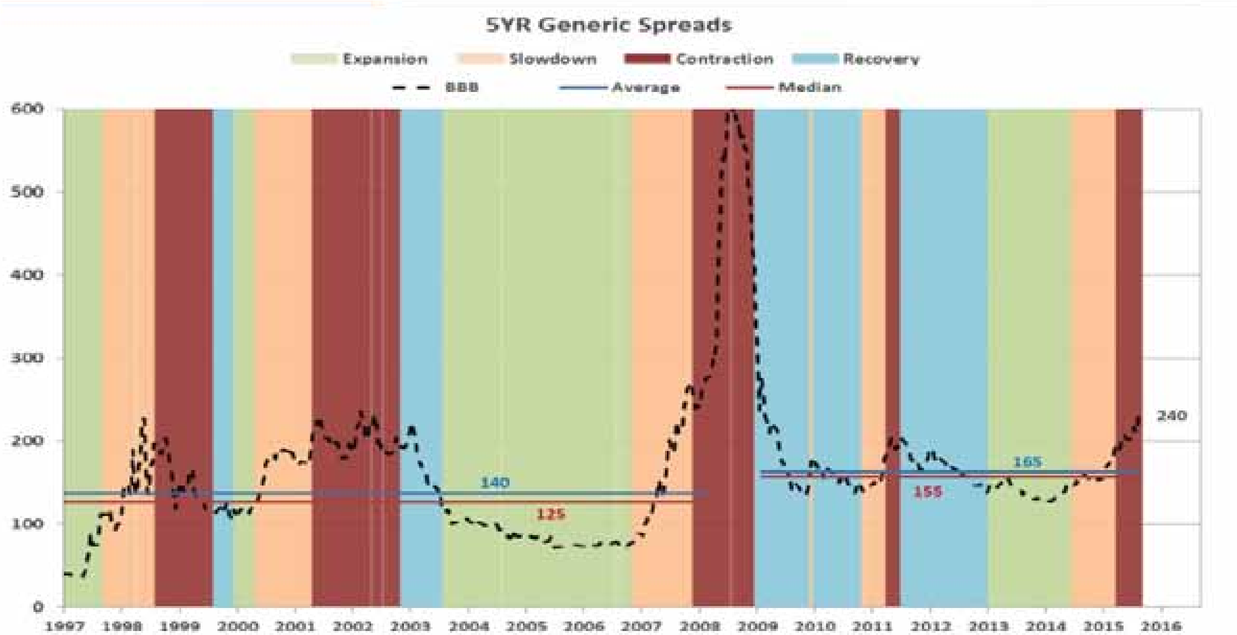


Source: BMO Capital Markets and Fiera Capital as at January 31, 2016

As the chart shows, spreads are at their highest level since the financial crisis of 2008/2009, and around the levels seen during the Russian default crisis of 1998 and September 11, 2001. According to Fiera, both of those periods were historically good mid-term entry points into corporate bonds which, after the resolution of the crises, saw spreads tighten to help generate attractive total returns for corporate bond holders.

Has Canadian Corporate Credit Bottomed?

There are four phases to the credit cycle, according to Fiera — **Recovery, Expansion, Slowdown and Contraction**. Fiera states that Canada entered a Slowdown phase in late November 2014 and a Contraction phase in August 2015. During these periods in the cycle, credit spreads widened beyond their historical average, leading to pressure on corporate bond prices.



Source: BMO Capital Markets, Fiera as at January 31, 2016.

Historically, the Contraction phase lasts, on average, about 57 weeks. According to Fiera, we've been in this phase for about 40 weeks going into February. This suggests we're nearing the tail-end and have potentially hit bottom in Canadian corporate valuations, or have at least seen spreads hit their widest margin.

Credit Cycle (phase)	Nb. of weeks		Average BBB Corp Spreads			Nb. of phases since '97	Avg Length (weeks)	Avg Spread variation (bps)
	Total	2008 crisis	Total	2008 crisis	ex-2008 crisis			
Recovery	222	7	170	320	170	5	44	-50
Expansion	303	0	100	-	100	4	76	10
Slowdown	230	0	160	-	160	6	38	60
Contraction	231	43	250	480	190	4	58	-10
Total (weeks)	986	50					216	
Total (years)	19	1.0					4.2	

Source: Fiera Capital as at January 31, 2016

Fiera contends that the current problems in the corporate bond space are very similar to the 1998 Russian default crisis, where spreads widened despite the fact that economic conditions were relatively sound. Fiera sees the spreads about 50% wider than they would typically expect for the current economic environment and do not believe that conditions are similar to those of 2008/2009.

Has Canadian Corporate Credit Bottomed?

The Appeal of Short-Term Investment Grade Corporate Credit

The widening of spreads makes short-term corporate credit more attractive, from a risk-adjusted perspective, than short-term government bonds or money market strategies. Spreads on the bonds held in the Horizons Active Floating Rate Bond ETF ("HFR") have widened by about 45 bps, which means investors should be generating an excess yield of 45 bps in that strategy. When you compare this to the average rate earned on a money market fund, we see that the HFR portfolio is yielding 2.59% (before management fees and applicable sales taxes) compared to the risk-free rate of 0.53% for a one-year Canadian Treasury bill, as at March 11, 2016.

Fiera doesn't currently expect interest rates in Canada to decline further, unless there is further erosion in energy prices. With corporate bond spreads being quite wide, Fiera puts a higher probability on spreads contracting in 2016 rather than widening further. From a relative yield perspective, versus the risk-free rate of one-year treasury bills, this is an attractive yield spread for an investment grade bond product with a duration of less than six months.

HFR can be a powerful barbell complement to an existing investment grade credit strategy, such as the Horizons Active Corporate Bond ETF ("HAB") or the Horizons Active CDN Bond ETF ("HAD").

Investing in corporate bonds is not an all-or-nothing proposition; investors can combine HAB with HFR, for example, to create their own optimal duration and yield strategy. Currently, HAB has a duration of about six years, while HFR has a duration of 0.13. A hypothetical 50/50 split between HAB/HFR for example would result in an approximately 2.65% current yield and a duration of around three years. (Figures are after management fees and applicable-sales tax, as at February 29, 2016).

ETF Name	Ticker	1 Month	3 Months	6 Months	YTD	1 Year	3 Year	5 Year	Since Inception	Inception Date
Horizons Active Floating Rate Bond ETF	HFR	-0.31%	-0.80%	-0.82%	-0.93%	-1.17%	1.00%	1.81%	2.01%	12/10/2010
Horizons Active Corporate Bond ETF	HAB	-0.35%	-0.12%	-0.30%	-0.59%	-1.88%	2.61%	4.51%	4.63%	7/15/2010

Source: Bloomberg, as at Feb 29, 2016

The indicated rates of return are the historical annual compounded total returns including changes in per unit value and reinvestment of all dividends or distributions and do not take into account sales, redemption, distribution or optional charges or income taxes payable by any security holder that would have reduced returns. The rates of return shown in the table are not intended to reflect future values of the ETF or returns on investment in the ETF.

To learn more, please visit **www.HorizonsETFs.com**

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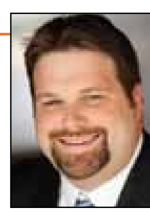

Mark Noble
Vice President & Head of Sales Strategy, Horizons ETFs Management (Canada) Inc.

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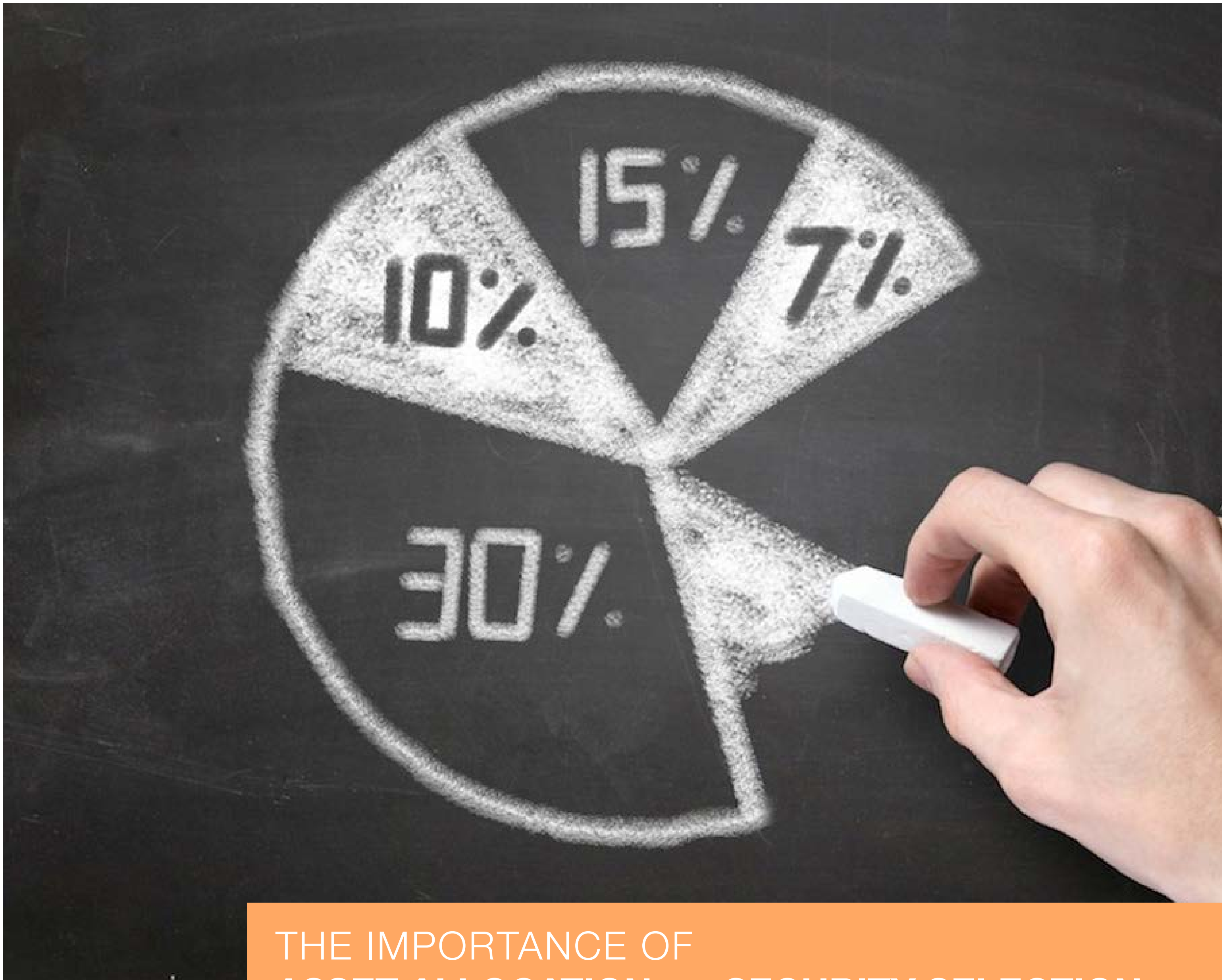


THE IMPORTANCE OF **ASSET ALLOCATION vs. SECURITY SELECTION: A PRIMER**

Highlights:

- Investment results depend mostly on the market you choose, not the selection of securities within that market.

- For mutual funds and pensions, market returns and asset allocation explain 90% of quarterly fund returns on average. In other words, institutions tend not to deviate materially from their strategic asset allocation.

- Asset allocation explains over 100% of long-term performance for institutions, so the value of active management could not overcome costs and fees. As the research shows institutions don't engage in material tactical bets, it seems most of the performance drag comes from poor manager selection or security bets, along with fees and costs.

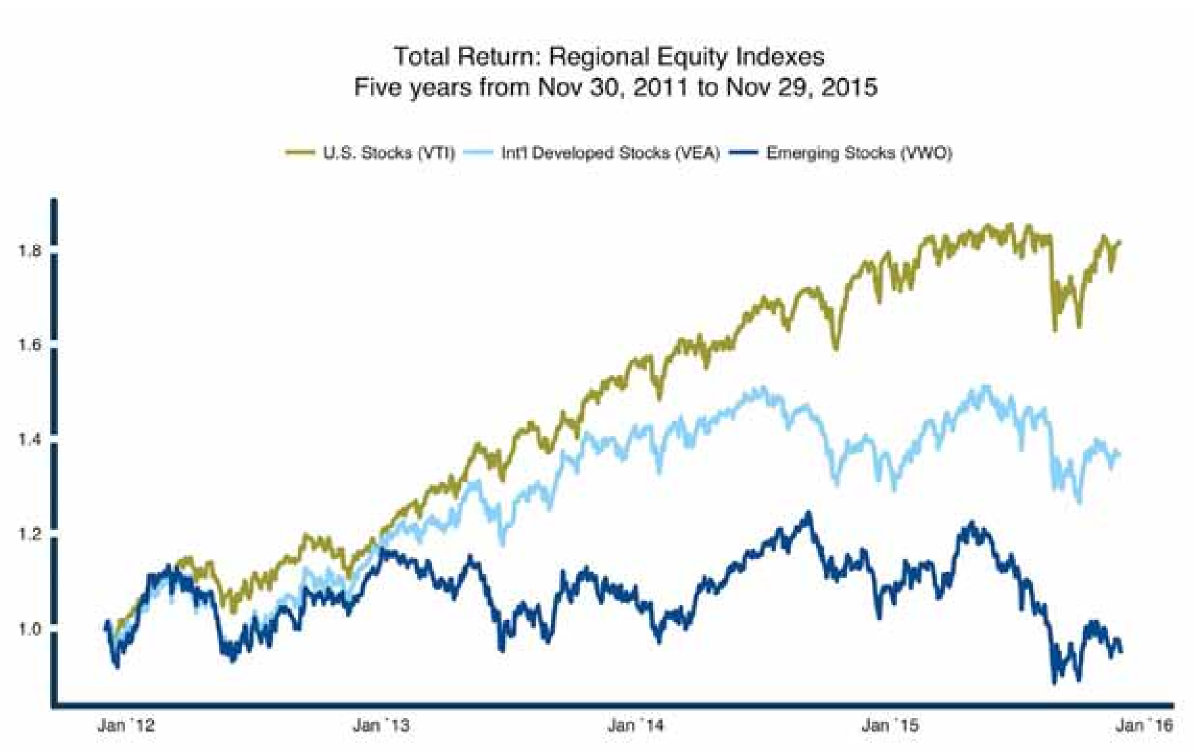
The forest and the trees

By far the greatest source of personal consternation as a professional in markets is investors' obsession with finding the best stocks, or the best stock pickers. The fact that investors pursue this objective at all undermines all meaningful arguments about efficient markets. After all, why on earth would the well informed, rational actors that constitute efficient markets spend all their time on the component of the investment process that is likely to make the least amount of difference to their long-term wealth?

You see, the ability to pick the best securities (for example, individual stocks and bonds) in a chosen market is much less important than one's choice of market itself. Does it matter how well one can choose stocks from a market if that market is dramatically underperforming?

Consider the example of emerging market equities, which underperformed U.S. equities by more than 55% over the 5 years through November 2015. And one need not go so far afield as emerging markets to find other examples with similarly large dispersion. Developed international markets also lagged U.S. stocks by a substantial margin. The Vanguard FTSE Developed Markets (ex-US) ETF (VEA) generated just 20% total return, or 3.7% per year, lagging US stocks by 8.4% annualized (Data source: CSI). Now, consider that the Vanguard US Total Stock Market ETF produced over 14% per year over the past 5 years. What is the likelihood that an investor – even a great investor – who chose stocks from non-US markets over the past five years was able to outperform even a poorly skilled manager selecting from U.S. stocks?

Figure 1. Performance over 5 years ending November 29, 2015



Data source: CSI

To get a sense for the impact of stock picking in the individual markets, let's examine the range of mutual fund outcomes for funds focused on each region. According to Reuters' fund screener, the 95th percentile U.S. equity fund delivered 15.5% annualized over the period, while a 5th percentile fund produced about 8.8%. Meanwhile, active international equity mutual funds' performance ranged from 5.7% to -1.7%. Incredibly, a 95th percentile manager in the emerging markets equity space delivered just 1.7% annualized over the past 5 years, while a 5th percentile fund lost over 7% per year.

Table 1. Performance range of active mutual funds over 5 years ending December 31, 2015

Market	95th %ile	Index	5th %ile
U.S. stocks	15.5%	14.4%	8.8%
Int'l developed stocks	5.7%	3.7%	-1.7%
Emerging stocks	1.7%	-2.7%	-7%

Data source: Reuters

The point is, while most investors, institutions, consultants and advisors spend all their time trying to pick the best stocks, or the best stock-pickers, these decisions mean very little compared to decisions about asset allocation. At the best of times for stock-pickers asset allocation and stock-picking have about the same influence on portfolio outcomes; at the worst of times, asset allocation almost completely determines success or failure. And yet, most investors embrace policy portfolios which explicitly limit deviations from strategic, long-term asset allocation targets. These same institutions then turn around and take large and regular active bets within each asset allocation sleeve by trading stocks, bonds, and managers. To our eye, these investors approach the problem exactly backwards.

The Policy Portfolio Paradigm

It has long been considered prudent investment policy to separate the asset allocation decision from the active investments in portfolios. Typically, asset allocation is expressed as a semi-permanent policy or reference portfolio guided by an advisor, a board, and/or an investment committee. In many cases, this policy allocation is loosely based on intermediate or long-term estimates of excess returns, risks, and correlations across the eligible asset universe. Once the policy strategic asset allocation is struck, the investment staff set about selecting managers within each of the asset class silos with the goal of harvesting alpha from security selection.

This process is motivated by the perception that the opportunity to generate incremental excess returns is much higher in the security selection space than the asset allocation space. After all, Grinold showed how investment fortune favours market breadth, and there are vastly more securities (i.e. stocks and bonds) than there are asset classes (i.e. stock and bond market indexes, commodities, REITs, etc.) to choose from. This (mis)perception informs the relative priority placed on the pursuit of alpha from active security selection relative to active shifts in asset allocation.

Market inefficiencies exist for a variety of reasons, such as asymmetric information, tax frictions, and emotional biases. Perhaps the most economically significant inefficiencies stem from structural constraints imposed on a large segment of investors. We view the structural bias in favour of security selection versus tactical asset allocation among institutional and private investors as an important example of this type of inefficiency.

As such, so long as tactical asset allocation is largely ignored by most investors, active asset allocation represents one of the most economically important sources of excess returns available to investors in public markets.

Shoulders of Giants

Most previous studies on the impact of asset allocation relative to security selection have been performed on pension funds and mutual funds, and explore the degree to which total portfolio variance is explained by deviations from institutions' long-term policy portfolios. The studies we reviewed are structured are structured as attribution analyses, where portfolio returns are disaggregated into returns due to the policy portfolio and active returns, which in most studies are defined as the residual not accounted for by the policy portfolio.

Brinson et al. (1986, 1991) regressed monthly portfolio total returns for pension funds against the monthly returns to each fund's policy portfolio, and determined that the policy portfolio explains approximately 90% of the monthly variance in total returns. Many citations of Brinson's original publications in this field falsely suggest that their analysis makes conclusions about long-term performance attribution. However, Brinson's seminal studies mainly proved that once institutions set a strategic asset allocation, they tend to stick to it with minimal deviation through time.

Ibbotson & Kaplan (2000) recognized the universal misperception around Brinson's analyses and set out to correct it. In their paper, "Does asset allocation explain 40,90, or 100 percent of Performance?" IK address the confusion by attempting to answer these three questions:

1. How much of the variability of returns across time is explained by policy (the question Brinson et. al. asked)? In other words, how much of a fund's ups and downs do its policy benchmarks explain?
2. How much of the variation in returns across funds is explained by differences in policy? In other words, how much of the difference between two funds' performance is a result of their policy differences (with the balance obviously due to active bets, either tactical or security-specific).
3. What portion of the return level is explained by policy return? In other words, what is the ratio of the policy benchmark return to the fund's actual return?

IK analyzed mutual fund data over 10 years through March 31, 1998, and pension data over the 5 years from 1993-97.

How much of the variability of returns across time is explained by policy and the market itself?

To answer question 1) they repeated the analysis from Brinson et al. and confirmed their results showing that policy weights explain 88% of fund returns. IK also provided intercept values from time series regressions corresponding to annualized excess returns to the funds over the policy portfolios. On average, excess returns were negative, but not significantly so.

Table 2. Comparison of Time-Series Regression Studies (extending Brinson et. al.)

Measure R^2	Brinson 1986	Brinson 1991	Mutual Funds	Pension Funds
Mean	93.6%	91.5%	81.4%	88.0%
Median	NA	NA	87.6	90.7
Active Return[α]	Brinson 1986	Brinson 1991	Mutual Funds	Pension Funds
Mean	-1.10	-0.08	-0.27	-0.44
Median	NA	NA	0.00	0.18

NA = not available | a = Active return is expressed as a percentage per year.

Source: Ibbotson & Kaplan (2000)

Importantly, IK made the point that fund returns are mostly attributable to investing in capital markets in general, not from the specific asset allocation policies of each fund. Regressions on the 'market', represented by the average policy portfolio, almost completely subsumed regressions on individual policy portfolios, explaining up to 79% of the 81% of returns explained by individual policy portfolios themselves. In fact, 75% of fund returns were explained by U.S. equity returns alone. (Note, IK only analyzed balanced funds for some reason, not pension funds). As a result, IK concluded "…the results of the Brinson et al. studies and our own results …are a case of a rising tide lifting all boats."

Table 3. Explaining Mutual Funds' Time-Series of Returns Using Different 'Market' Portfolios

R^2	S&P500	Average Policy	Fund's Policy
Mean	75.2%	78.8%	81.4%
Median	81.9	85.2	87.6

Source: Ibbotson & Kaplan (2000)

If you accept that market returns are a common variable, and should thus be removed from the attribution analysis, then one is left to wonder what portion of residual returns are explained by differences in policy weights vs. active management. This question is answered, at least for U.S. mutual funds, in "The Equal Importance of Asset Allocation and Active Management" by James X. Xiong, CFA, Roger G. Ibbotson,. Thomas M. Idzorek, CFA, and Peng Chen, CFA (2010) (henceforth XIIC).

Table 4. Decomposition of Time-Series Total Return Variations in Terms of Average R2s, May 1999 – April 2009

Average R^2	U.S. Equity Funds	Balanced Funds	International Funds
Market movement	83%	88%	74%
Asset Allocation policy	18	20	19
Active Management	15	10	26
Interaction Effect	-16	-18	-19
Total	100%	100%	100%

Source: "The Equal Importance of Asset Allocation and Active Management" by James X. Xiong, CFA, Roger G. Ibbotson,. Thomas M. Idzorek, CFA, and Peng Chen, CFA (2010)

From Table 4. we see that, once common market movement is removed, asset allocation policy and active management explain approximately the same amount of total returns, about 20% each, across the different fund categories. However the asset allocation policy for balanced funds, which mix bonds and stocks, explains about twice as much variance as active management. This is intuitive as differences in strategic exposures to stocks vs. bonds should have a larger impact than differences in exposures across different segments of equity markets. Interestingly, active management was more influential for international funds, probably reflecting time-varying exposures to various non-U.S. equity markets. Of course, these time-varying exposures would reflect asset class bets, i.e. tactical bets across regional equity markets, as well as idiosyncratic stock bets.

How much of the variation in returns across funds is explained by differences in policy?

So far, we have addressed how different variables – market returns, asset allocation policy, and active management – explain quarterly total returns for each fund independently through time. On average across funds, market exposures and asset allocation policy explain about 90% of total returns, while active management explains just 10%. However, this does not really answer the questions that are probably on most investors' minds. Most investors are probably interested in the answers to the other two questions posed by IK. That is 2) what accounts for the differences in returns across funds, and; 3) what accounts for the difference in long-term performance?

While IK seek to answer 2) in their paper, their results are confounded because they did not control for the impact of the market factor when performing their analysis. XIIC correct for this in their paper, by performing both time-series and cross-sectional regressions on <u>excess</u> returns, which remove the impact of market returns.

Table 5. Decomposition of Time-Series Excess Market Return Variations in Terms of R^2 Average ,
May 1999–April 2009

Average R^2	U.S. Equity Funds	Balanced Funds	International Funds
Asset Allocation	48%	36%	49%
Active Management	41	39	45
Interaction Effect	11	25	6
Total	100%	100%	100%

Source: "The Equal Importance of Asset Allocation and Active Management" by James X. Xiong, CFA, Roger G. Ibbotson,. Thomas M. Idzorek, CFA, and Peng Chen, CFA (2010)

From Table 5. it's clear that, within quite reasonable error bounds, the asset allocation policy and active management are equally important in explaining the variation in returns across funds. Again, the active management portion includes both time-varying (tactical) exposures to market variables as well as individual security bets, so some portion of the active variable is also attributable to asset allocation. I have not seen similar research conducted on pensions, but it is likely that results would be similar.

What portion of the *return level* is explained by policy return?

Lastly, IK set out to capture the percentage of total returns to institutions that is explained by asset allocation policy vs. active management. Refreshingly, the math required for this step is simple: it is the ratio of compound annual return experienced by the passive policy portfolio divided by the compound annual return experienced by the fund itself. Obviously, the difference between policy returns and fund returns is driven by tactical asset allocation, manager selection, security selection, fees and expenses. The results in Table 6. suggest that a simple passive investment in the policy portfolio would have delivered equal or better results on average than engaging in active management.

Table 6. Percentage of total return level explained by policy return.

Study	Average %	Median %
Brinson 1986	112	
Brinson 1991	101	
Ibbotson 2000 [Mutual Funds]	104	100
Ibbotson 2000 [Pension Funds]	99	99

Source: Ibbotson and Kaplan (2000)

Ibbotson and Kaplan stated that, on average, asset allocation explained 99% and 104% of long-term returns for pensions and mutual funds respectively. How might we interpret this finding? Recall that the total return to portfolios were decomposed into the total return to the fund's policy portfolio using asset class benchmarks, plus the active return, minus trading frictions. So the results of this study demonstrate that, over the periods studied, the average institution lost 4% of total return to fees, ineffective active management, or poor manager selection.

Combined with the original analysis by Brinson, which makes the strong case that institutions make very few material deviations from policy weights over time, one is left to conclude that the vast majority of the dispersion and performance decay observed by Ibbotson and Kaplan was due to fees and poor active security selection. This is a troubling condemnation of traditional forms of active management in general.

Summary

Most investors miss the forest for the trees by focusing on security selection rather than asset allocation to produce better portfolio outcomes. As a case study, we showed how the best stock pickers in international stock markets could not hope to compete with even the worst stock pickers in domestic U.S. markets over the past five years. Rather, outcomes in equity portfolios were almost completely dominated by geographic effects; individual securities played a much smaller role. Brinson at al., and later Ibbotson and Kaplan demonstrated that for a large universe of institutional investors, asset allocation explained over 90% of quarterly portfolio returns. This analysis mostly highlighted that institutions do not deviate far from policy portfolios. However, it was later revealed the the explanatory power of funds' specific asset allocation was subsumed by exposure to capital markets in general. In fact, 74%-88% of funds' returns were explained by market returns. Once market returns are removed, Xiong et al. determined that asset allocation and active management account for an equal proportion of quarterly returns.

Of course, investors really want to know what portion of the variation in returns across funds, and what portion of total long-term performance, is explained by asset allocation vs. active management. Xiong et al.

demonstrated that asset allocation and security selection are equally responsible for the cross-sectional variation in fund returns. And Ibbotson and Kaplan showed that policy portfolio returns explained over 100% of fund total returns, suggesting that the value of active management did not overcome costs and fees on average. As the original Brinson research showed institutions don't engage in material tactical bets, it seems most of the performance drag comes from poor manager selection or security bets, along with fees and costs.

Conclusion

The studies discussed in this article describe how asset allocation has impacted the actual results of mutual funds and pensions. As such, they are descriptive studies – they only measure how institutions have chosen to use asset allocation and active management to produce different portfolio outcomes. They say nothing about what institutions should do, or what is possible if institutions were to unleash the full potential of markets. Furthermore, the research above suggests that institutions rarely deviate materially from their strategic asset allocation, so the historic experience provides limited insight. These studies cannot help quantify the relative size of the theoretical opportunity to profit from active management were institutions to take on greater active risk.

Our whitepeper, Tactical Alpha: A Quantitative Case for Active Asset Allocation, explores studies that attempt to capture the relative opportunity to deliver differentiated performance from asset allocation relative to security selection for unconstrained mandates. We discuss a simulation study by Assoe et al. that measures the range of outcomes across random portfolios selected from asset classes and individual stocks. Then we apply a portfolio x-ray tool, Principal Component Analysis, to determine the theoretical proportion of diverse bets across asset classes vs. individual securities given various correlation assumptions. Finally, we will analyze the empirical number of diverse bets available from a global asset class universe relative to U.S. stocks through time.

At the risk of spoiling the ending, our studies show that – when investors are liberated from arbitrary constraints – the opportunity to produce differentiated performance is much greater from active asset allocation than from active security selection.

Download the whitepaper here now.

Note: This series expands on the concepts discussed in our whitepaper, Tactical Alpha: A Quantitative Case for Active Asset Allocation. If you would like to skip ahead by reading the original paper, you can download it here.
See also:
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A Q&A on Fixed Income ETF Liquidity

Liquidity is a measurement of trading activity and how easy it is to buy or sell an asset — and like the tide, it can "go out." For some, the current debate about liquidity in the bond market creates concerns for fixed income ETFs should interest rates rise and prompt investors to exit the asset class. In our view, however, the evidence suggests that ETFs' structure can deliver particular portfolio benefits during periods of changing tides and market stress.

Liquidity Paradigm of Fixed Income ETFs

Since the 2008–2009 Global Financial Crisis (GFC), institutional use of fixed income exchange traded funds (ETFs) has increased exponentially, elevating ETFs' secondary market liquidity. At the same time, individual bond liquidity has declined. The combination of lower liquidity in the bond market and the efficiency of ETFs — due to technology enhancements and precise exposures — continues to drive investors to fixed income ETFs.

According to a 2015 Greenwich study,[1] since the GFC fixed income ETF liquidity has increased 400 percent. The bulk of this growth correlates to the increased use of ETFs, but tighter regulatory restrictions on trading and a surge in bond issuance have contributed as well. As trading and managing fixed income allocations have become more difficult, we've seen a shift from single issue to ETF basket trading as a natural byproduct. Why trade a series of illiquid high-yield bonds to get exposure when one fixed income ETF that holds those same issues (plus more), trades at penny-wide spreads on the secondary market?

Five Questions on ETF Liquidity

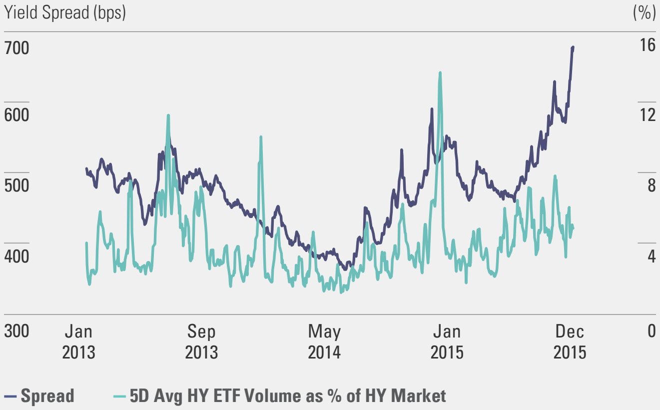
A pioneer in the ETF market, State Street Global Advisors (SSGA) has identified five key questions about ETF liquidity that may be important to investors:

How is A Passive Fixed Income ETF Affected by an Uptick in Volatility or A 'Sell-Off' in Risk Assets?

Fixed income ETFs, at a minimum, are as liquid as their underlying securities because the ETF shares can be exchanged for a basket of the underlying bonds via the creation/redemption process (referred to as the primary market). However, many fixed income ETFs have also developed robust secondary markets (the trading of the ETF shares on stock exchanges), where buyers and sellers freely interact. Market liquidity becomes paramount during periods of volatility, and this is where we think fixed income ETFs provide the most useful benefits.

As highlighted in Figure 1, when credit spreads widened and overall bond market volatility spiked, fixed income high-yield ETF volumes, as illustrated by the SPDR Barclays High Yield ETF (JNK) and the iShares iBoxx $ High Yield Corporate Bond ETF (HYG), increased. Additionally, the increase in ETF volumes led to the fund structure representing a larger share of the overall high-yield security market volume, as the primary market volumes tightened. Increasing ETF liquidity when underlying bond markets become illiquid benefits investors looking to reallocate capital during periods of stress.

Figure 1: Relationship Between HY Spread and HY ETF Secondary Volume as % of HY Market



Source: Barclays, Bloomberg, SSGA, as of 12/31/2015.

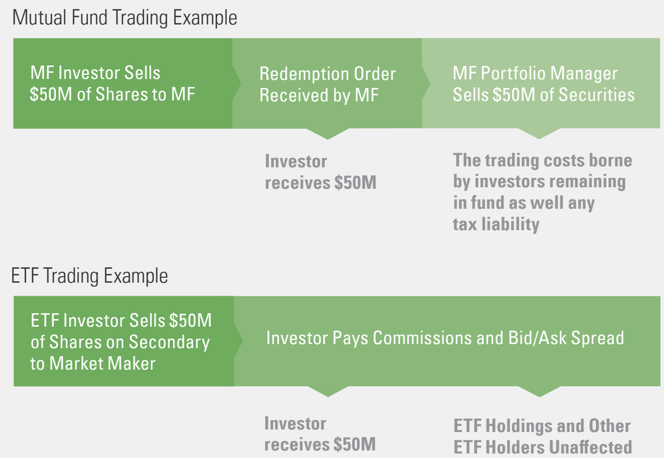
Past performance is not a guarantee of future results.

What are the Benefits of Owning A Fixed Income ETF (Either Passive or Active) Versus A Fixed Income Mutual Fund During A Liquidity Event?

ETFs and mutual funds both offer diversification and daily buying and selling opportunities. However, during a liquidity event, the ETF structure offers several advantages, including:

- ETFs provide both primary (creation/redemption at Net Asset Values (NAV)) and secondary/intraday trading. The presence of a liquid secondary market offers price transparency and the ability to liquidate positions, without touching the primary market. Mutual funds can only be redeemed at the market close, when the fund manager would have to trade into a depressed primary market to raise enough capital to fulfill any redemption requests.
- The transaction costs (bid/ask spread) of an ETF are borne only by the "transactor," not passed on to other fund shareholders. Mutual fund investors are not so fortunate; they absorb the cost when other investors exit or enter the fund. For instance, as the seller's proceeds are valued at NAV, the remaining fund shareholders bear the trading costs of raising the necessary funds to meet the parting client's redemption. Figure 2 illustrates the hidden costs beyond the expense ratio that a mutual fund investor may face.
- Sales of mutual fund shares settle Trade Date + 1 day (T+1). Both primary and secondary ETF trades settle T+3, as do the underlying bonds. Therefore, mutual funds have a natural liquidity mismatch that managers must account for, which may pose potential issues in a significant sell-off.

Figure 2: Mutual Funds vs. ETF Trading Costs

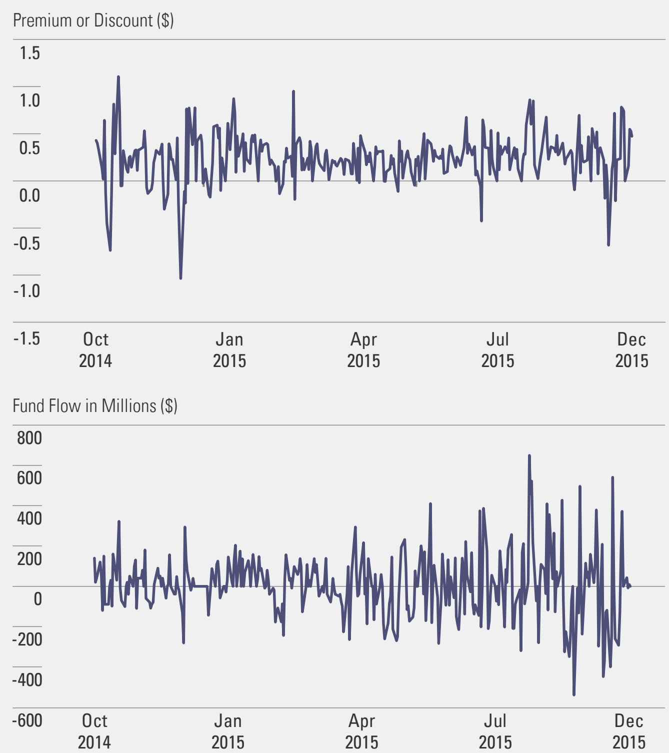


The information contained above is for illustrative purposes only.

Why does an ETF Trade at A Premium or A Discount?

ETF sponsors use bid prices of individual bonds to calculate their fixed income ETF Net Asset Values (NAVs). In contrast, individual bonds and ETFs typically trade closer to the midpoint between the bid and ask (a bid price is lower than

Figure 3: ETFs as Price Discovery Tools — JNK



Source: Bloomberg, SSGA, as of 12/31/2015.

Past performance is not a guarantee of future results.

a midpoint in the bid/ask relationship). As a result, fixed income ETFs generally trade at premiums to their NAVs. During times of market stress and/or heavy selling pressure, ETFs may trade at discounts, conveying market sentiment and reflecting the risk market makers face to sell the underlying cash bonds. In periods of stress, ETF shares trading on the exchange reflect the current consensus of the ETF's value, established by many investors. In contrast, many individual bonds do not trade on a given day. This could cause the ETF shares to appear to trade at a discount to the NAV as the NAV may be slower than the market to react to price volatility.

Does the Price Movement of the ETF Lead the Underlying Bonds Market?

An ETF's market price represents, in transparent fashion, the level at which risk can be transferred from a seller to a buyer. Due to the number of bonds in the market and a lack of a centralized exchange or uniform closing price, bonds that do not trade on a regular basis may not reflect the true value of the underlying market.

For example, some high-yield bonds do not trade regularly on the secondary market. However, ETFs that track those markets do trade regularly. During periods of higher volatility, the on-exchange and more transparent secondary market for ETF shares will display the market's sentiments earlier than the over-the-counter and more fragmented trading of the high yield bond market. In this case, ETFs act as a price discovery tool as result of their transparency, liquidity and efficient trading, as illustrated by Figure 3.

If there are Redemptions in an ETF Does the Issuer Become A Forced Seller of Bonds?

The primary method of creation and redemption activity in most SSGA fixed income ETFs is an in-kind transfer of securities vs. the ETF. An in-kind redemption occurs when an Authorized Participant (AP) delivers the ETF to State Street in return for the underlying bonds. This is an important distinction as the risk associated with pricing an ETF by an AP or market maker is aligned with their ability to sell bonds (execute a hedge) in the underlying market.

Conclusion: Liquidity Concerns Appear Overblown

The first fixed income ETF was launched in 2002. Since then, the market has endured the 2004 Fed tightening cycle, the credit crisis, sovereign debt crisis, the fiscal cliff, debt ceiling debate, the "taper tantrum," the energy bear market of 2014 and the introduction of 280 other fixed income ETFs, both passive and active. As the ETF illiquidity drumbeat grows louder, investors would be wise to remember the market events over the last 13 years that showcase the efficiency and merit of employing fixed income ETFs.

Liquidity, much like performance, cannot be guaranteed in the future. However, ETFs' dual avenues of liquidity from the primary and secondary markets provide relative advantages over mutual funds, which can interact only in the primary market.

Figure 4: Standard Performance
SPDR Barclays High Yield Bond ETF (JNK)

Month End	As of	1 Month (%)	QTD (%)	YTD (%)	1 Year (%)	3 Years (%)	5 Years (%)	10 Years (%)	Since Inception 11/28/2007 (%)
NAV	03/31/2016	3.77	2.22	2.22	-7.34	-0.19	3.26	N/A	4.65
Market Value	03/31/2016	3.06	2.10	2.10	-7.08	-0.14	3.25	N/A	4.70
Barclays High Yield very Liquid Index	03/31/2016	4.46	3.67	3.67	-4.26	1.45	4.70	N/A	7.16

Source: spdrs.com, as of 03/31/2016. Gross expense ratio is 0.40%.

Past performance is not a guarantee of future results. Performance returns for periods of less than one year are not annualized. Index returns are unmanaged and do not reflect the deduction of any fees or expenses. Index returns reflect all items of income, gain and loss and the reinvestment of dividends and other income. You cannot invest directly in an index.

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State Street Global Advisors

Definitions

Authorized Participant (AP)

Financial institutions responsible for the creation and redemption of ETFs that play a key role in ETF liquidity.

Market Maker

Professional traders that buy and sell ETFs and provide liquidity to the fund.

Primary Market

The market where APs create and redeem ETF shares in-kind, typically in blocks of 50,000 shares known as creation units.

Secondary Market

The market in which ETF shares that currently exist are traded on exchanges between investors.

Net Asset Value (NAV)

The price of a share determined by the total value of the securities in the underlying portfolio, minus any liabilities.

Premium and Discount

If an ETF is trading above its NAV, the ETF is said to be trading at a premium. If the price of the ETF is trading below its NAV, the ETF is said to be trading at a discount.

[1] Greenwich Associates, "Bond Market Continues to Drive Demand for Fixed-Income ETFs," May 18, 2015.

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