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CONNECTED WEALTH

Connected Wealth Tactical – Primer

Transparency

The Connected Wealth team has a number of guiding principles including Transparency. It is your money, and we believe you should not only see what you own but how it is managed.

Connected Wealth Tactical is a quantitative rules-based portfolio, but it is not a black box. In the coming pages we will share our models, sensitivities, how we developed the strategy, analytics on what kind of market it works best, what kind of market it doesn't work as well and of course how it has performed since launching in 2011 on the Separately Managed Account platform and in 2015 as a mutual fund. We dislike the lack of transparency present in many strategies in the financial industry and strive to be different and transparent. It is your money.

Evolving with the Markets

'I don't want to go through that again" – said just about every investor following just about every bear market.

Over the years both investors and advisors have been taught 'it's about time in the market that matters, not market timing'. We do not disagree with this for the core of investor portfolios, but given the market oscillations over the past few decades, adding a tactical component can certainly help smooth the path. It is not easy to be tactical, and getting it right is a daunting task. It requires a very strong internal fortitude to make calls often against the consensus or prevailing views, which could just as easily prove wrong. Plus you need an approach that is repeatable and can be implemented very quickly and easily to be effective, posing an administrative hurdle. Unfortunately, the private wealth industry is just not well suited or equipped to be tactical.

Investment Philosophy

Bigger Market Swings

Market swings have become larger and more pronounced in recent years, both up and down, due to a combination of funds flows, high frequency trading and more fast money. A static asset allocation appears ill-equipped for today's markets. Designed as a sidecar strategy for traditionally managed assets, the Connected Wealth Tactical strategy provides a tactical component with the objective of reducing portfolio volatility.

Systematic Approach

The Tactical Portfolio utilizes a technical/quantitative approach to increase equity exposure in up markets and increase bond exposure in down markets. The portfolio uses Exchange Traded Funds (ETFs) to employ the strategy because of their low costs and liquidity. The holdings can oscillate between 100% equity and 100% bonds depending on the signals for the market. This is a risk-on/risk-off strategy.

Connected Wealth

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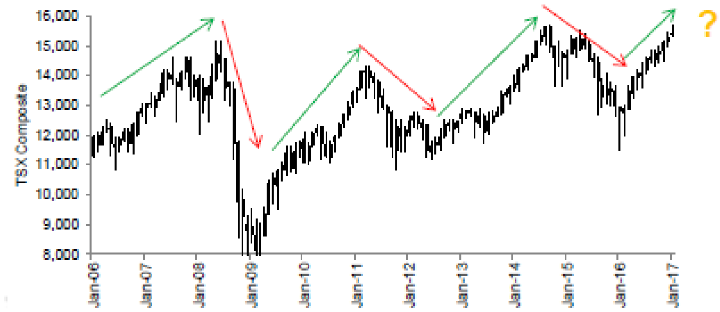
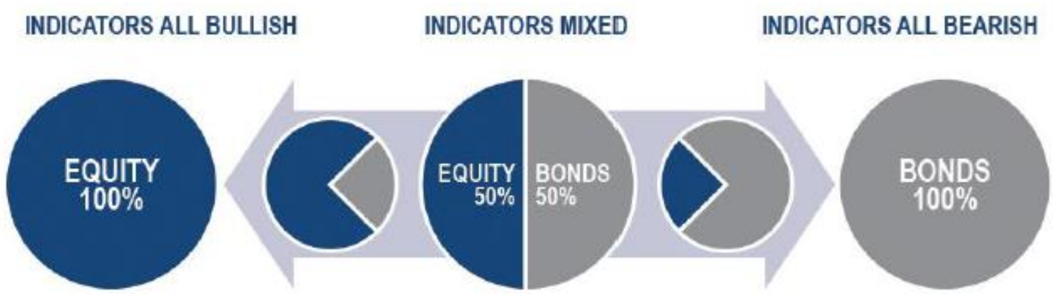
However, we believe the need to have a tactical component within a diversified portfolio has never been greater. Markets have evolved and have been experiencing bigger, faster swings than before, both up and down. The chart below highlights the TSX's tumultuous ride over the past few years. Not fun even given we are in year 8 of a bull market. Volatility has been similar, albeit a bit less extreme, in the U.S. market, making this a tough investing environment, especially for buy-and-hold investors



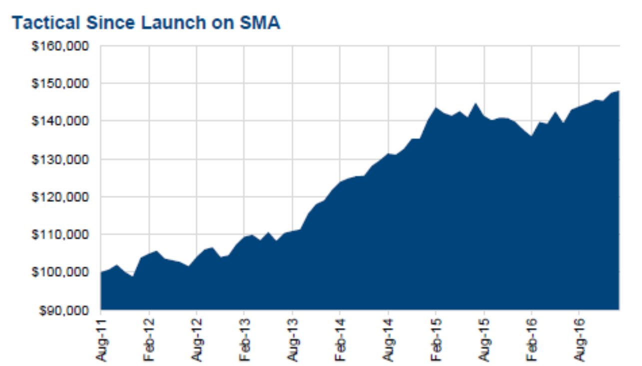
This bull market turns 8 in March of 2017, making it one of the longest bull markets in history. So are we due for a bear market or are there a few more good years left for this aging bull?

While we have our views, nobody really knows. It is with this grounded perspective that we created the Connected Wealth Tactical strategy over 5 years ago in 2011. In essence, we wanted to create a side-car strategy that would complement an overall portfolio by becoming more defensive during periods of market weakness and more equity tilted during periods of market strength. Developing this strategy with about 40 years of market data, the premise is fairly straightforward: As equity markets rise, the portfolio tilts more towards equities and as the equity markets weaken the portfolio tilts more towards bonds. Since launch, the portfolio has been as much as 90% bonds during periods of weakness and 100% equity during periods of strength. Connected Wealth Tactical is a sidecar strategy, designed to provide tactical component for an overall portfolio.



Connected Wealth Tactical (Tactical)

- The Tactical Portfolio uses a systematic, rules based approach to increase equity exposure in up markets and increase bond exposure in down markets.
- The holdings oscillate between 100% equity and 100% bonds/cash, implementing this strategy by using a selection of exchange traded funds (ETFs).
- With 90% of the portfolio following disciplined multi-factor signals, emotion is largely eliminated from the decision whether to be more bullish or bearish. The remaining 10% invests in long only ETFs based on the manager's discretion.
- This is a tactical investment strategy that utilizes ETFs as they are a vehicle that can easily and efficiently change the equity/bond allocation for the portfolio. This is not a model ETF portfolio that use static asset allocation approaches.



Net of management fees, SMA 2011-15, CWC101 2016+

- A static asset allocation appears ill-equipped for big market swings. Adding Tactical as a sidecar strategy to traditionally managed assets can provide a tactical tilt to an overall portfolio and reduce total volatility while not sacrificing expected returns. This is the foundation of the Connected Wealth Tactical Portfolio.
- Considering the current bull market is in its 8th year, the time may be right to start adding more defensive oriented strategies.

How it works / trades

Tactical was designed for big market swings, to profit in big up swings and protect in big down swings.

The Connected Wealth Tactical Portfolio was designed to profit from the type of market environment that has large, pronounced swings and higher volatility. The portfolio, based on a number of technically/quantitatively-driven trend following signals, invests in a varying mix of equity and bond ETFs. The strategy is designed to participate when the equity markets are rising and rotate into bonds when equity markets are deteriorating or losing momentum. This active tactical approach can provide a powerful diversification tool in conjunction with traditional investment strategies that maintain a static asset allocation.

While the portfolio holds only a few key ETFs, the holdings can oscillate between 100% equity and 100% bonds, depending on our indicator's short-term outlook for the market. 90% of the portfolio follows our multifactor technical/quantitative signals, largely removing emotion from the decision to be more bullish or bearish, with the remaining 10% at the manager's discretion.

Tactical Portfolio Structure

% of Portfolio	Equity ETF		Bond ETF
55%	Canadian equity ETF	⟷	Canadian bond ETF
25%	U.S. equity ETF	⟷	U.S. bond ETF
10%	NASDAQ ETF	⟷	Corporate bond ETF
10%	Managers Discretion ETFs		

The Signals

The Tactical Portfolio has fixed weights in three equity and three bond ETF pairs driven by a number of indicators that determine 90% of the portfolio. These include Canadian Equity vs. Canadian Bonds for 55%, U.S. Equity vs. U.S. Bonds for 25% and the NASDAQ vs. U.S. Corporate Bonds for 10%. Each of these pairs, trades based on closing daily prices in their respective market. Each decisions is based on some similar and some different technical/quantitative signals. In selecting the underlying indicators for the portfolio, we focused on a combination of momentum, oscillation, trend-following and trend-exhaustion signals. A varying combination of indicators is applied to each of the three equity ETFs including Canadian Equity, U.S. Equity and the NASDAQ. The signals dictates the amount in the equity ETFs, with the remainder invested in the paired bond ETF. Keep in mind, the Tactical Portfolio owns bonds when it doesn't like equities, the model does not look at the bond market. To minimize the portfolio turnover and risk of false signals, the signals must provide confirming indicators before a switch from equities to bonds or bonds to equities. The signals are then broken down across varying sensitivities, some moving faster while some are slower to move or change. This results in staggered changes to the asset mix, not abrupt changes.

The two most widely used signals or models for the Tactical are:

Fear and greed: This technical study incorporates a concept known as true range, which is the relationship between the current high and low compared to the previous day's close over a number of days. The buy/sell indicator is based on the relative position of two moving averages of True Range for a stock, index, or in our case an ETF. This is an oscillation based signal.

Bloomberg Trender: As the name suggests, this signal is an indicator that helps identify the current trend, either up or down. This is a trend-following and trend-exhaustion indicator that also provides a trailing stop on up trends and a trailing buy point on declining trends. There is a buffer or varying sensitivity to help avoid being whipsawed if the market makes a sudden change in direction.

We combine these two models requiring both to confirm a change in the equity/bond mix before we trade. And, we use varying sensitivities which staggers how the model trades. This helps reduce the amount of trading but more importantly enables the portfolio to move in stages or steps, not all at once.

50 and 200-day moving averages: This is one of the more stable and longer term indicators used in the Tactical Portfolio, and also one of the most quoted. The indicator provides a buy signal when the 50-day moving average (MA) is above the 200-day moving average and a sell signal when it is below. It is commonly referred to as the 'death cross' when the 50-day MA crosses below the 200-day MA and the 'golden cross' when the 50-day MA crosses above the 200-day MA.

In the table below we have outlined the various models and sensitivity settings that we use in the Tactical model. Fear and Greed (FG) and Trender (Trender) are always paired and need to confirm one another before a switch is made. The numbers in the brackets are the sensitivities:

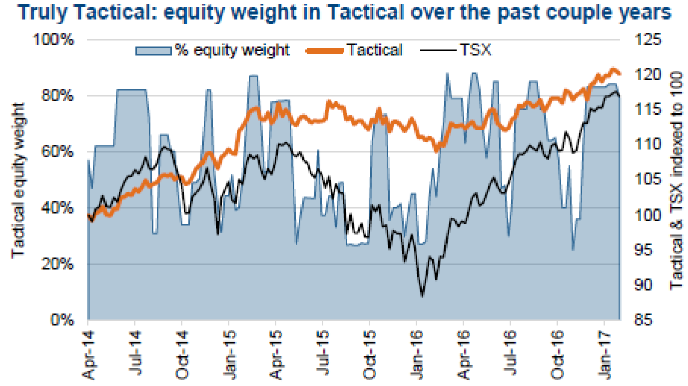
Equity / Bond	Weight	Models
Canadian Equity vs Canadian Bonds	55%	Fast: FG (6) & Trender (4)
		Medium: FG (7) & Trender (7)
		Slow: FG (9) & Trender (8)
		Super Slow: FG (12) & Trender (11)
U.S. Equity vs U.S. Bonds	25%	FG (9) & Trender (9)
		50 vs 200-day moving average
NASDAQ vs Corp Bonds	10%	FG (6) & Trender (5)

The remaining 10% of the portfolio is at the discretion of the managers. We use these indicators for our buy and sell signals as well, although we will occasionally use other ETFs including broad-based index or sector ETFs.

Why we use multiple models and sensitivities

There is no perfect model, sadly. So much like in traditional investing, we diversify our strategy by incorporating a number of different signals that have different sensitivities. We also want a balance between outcomes and portfolio turnover, which is a drag on performance. The chart to the right demonstrates the portfolios asset mix (shaded area) over the past few years. The orange line is the Tactical portfolio, less management fees, with the black line as the TSX. During periods of market weakness, May 2015 till January 2016, the portfolio held a significantly lower amount of equity. Conversely, during periods of market strength, March 2016 onward, the portfolio on average held a significantly higher proportion of equity.

Truly Tactical: equity weight in Tactical over the past couple years



Connected Wealth, SMA Model with 2% fee (2014-15), CWC101 2016+

For a closer look at how the Connected Wealth Tactical portfolio trades on page 10 we highlight the past three corrections with how the portfolio performed and how the equity allocation changes during those turbulent periods.

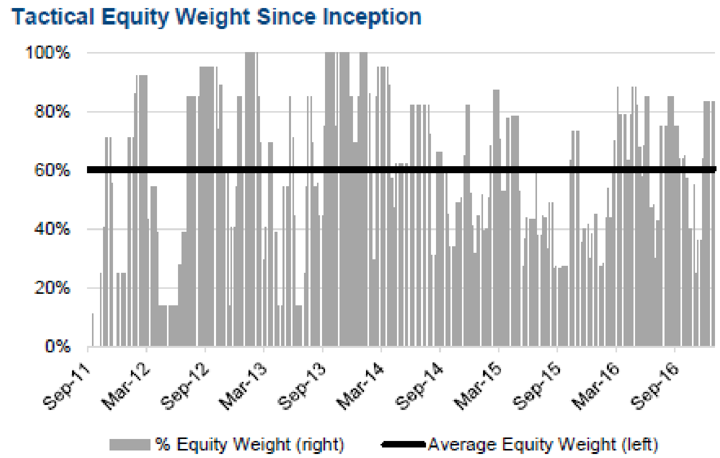
Exchange Traded Fund Selection

The portfolio uses plain vanilla ETFs. Selection is based on low cost and high liquidity, this mitigates the transaction costs and market impact when we make changes. We do not use any levered or inverse ETFs as we want to keep the strategy as simple as possible.

As an example of ETF selection, over concern of rising interest rates we have recently begun using lower duration bond ETFs. Instead of buying the broad bond market, we have tilted a bit to shorter term bonds. We believe this should help performance if/when bond yields rise.

How to use Connected Wealth Tactical : A sidecar strategy

The Connected Wealth Tactical Portfolio works best as a sidecar strategy combined with a traditionally managed portfolio that is long any combination of equity, bonds or alternative investments. Tactical's objective is to help insulate an overall portfolio from major market declines by rotating from equities to bonds. Thus dynamically tilting the overall portfolio allocation towards a higher bond allocation during periods of weakness. Conversely, during market advances the portfolio is designed to hold an increasing equity weight, tiling the overall portfolio allocation to hold more equity. Since the portfolio launch in September 2011, it has been as low as 0% equity (90% bonds and cash) and as high as 98% equity. The chart at right contrasts the equity weighting in the portfolio since launch with the long term average, clearly demonstrating the tactical component of the management style.

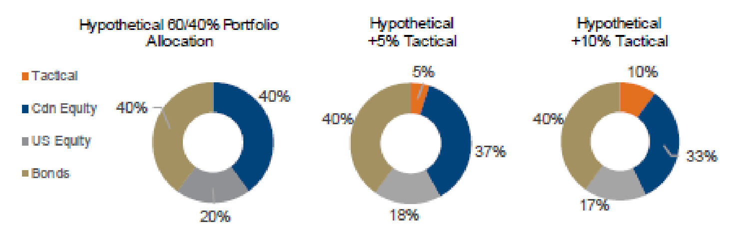


Source: SMA 2011-2016

Given the Tactical Portfolio is a more active trading strategy and it can have periods when it is 100% invested in equity ETFs, it is best to include the Tactical Portfolio in an investor's equity allocation or allocate based on the longer term average of 60% equity and 40% bonds. The weighting depends on the level of comfort with alternative trading strategies and investor sophistication.

How does Tactical fit within a portfolio?

The objective of the Tactical Portfolio is to provide capital appreciation but more importantly to provide a strong diversifier and reduce the risk of the overall portfolio. The accompanying analysis uses back tested performance data for Tactical and historical total return index data from 1978-2016. We measured the impact of adding a 5% and 10% allocation to a 60% equity / 40% bond balanced portfolio. The impact on the return was negligible, but the impact on risk characteristics was meaningful. Adding a 10% Tactical allocation reduced standard deviation by 7.4% (9.5% to 8.8%). The Downside Deviation declined even more by 13.3% (7.3% to 6.3%). As Tactical becomes most defensive in down markets, this explains the asymmetric impact on volatility, mainly reducing negative instances. This can also be seen in the 9% improvement in the Sharpe Ratio and 16% improvement in the Sortino Ratio.



	Hypothetical 60/40% Portfolio Allocation	Hypothetical +5% Tactical	Hypothetical +10% Tactical
Tactical	0%	5%	10%
Cdn Equity	40%	37%	33%
US Equity	20%	18%	17%
Bonds	40%	40%	40%
Sharpe Ratio	0.96	1.00	1.04
Sortino Ratio	1.25	1.34	1.45
Return (CAGR)	10.08%	10.13%	10.18%
Standard Deviation	9.5%	9.2%	8.8%
Downside Deviation	7.3%	6.8%	6.3%
Worst 3 months	-17.2%	-16.0%	-14.8%
Worst year	-19.4%	-17.3%	-15.1%

Source: Back tested hypothetical performance based on model

The defensive benefits can also be seen by looking at the worst performance periods over the 39 year analysis time frame. Adding 10% Tactical softened the negative blow of the worst 3-month performance by 14% (-17.2% to -14.8%) and the worst year by 22% (-19.4% to -15.1%).

Tactical is designed to add most of its value during periods of market weakness and avoid sacrificing much upside during better times. We believe this analysis supports this and in the following pages we dive deeper into the back testing and model development. More importantly on page 10 we highlight similar results since launching the strategy into the real world since 2011.

Backtesting analysis/model development

As 90% of the Tactical Portfolio follows the regimented technical/quantitative signals, we have the ability to backtest this investment process to highlight how it would have performed in different market environments. We backtested the 90% of the portfolio that follows our multi-factor technical signals to 1977. Generally speaking, the model elicited much less volatility than the overall market, especially in down markets, with stronger performance overall.

Backtesting caveat – backtesting should always be viewed with caution as poor results are quickly discarded, and changes are made, until the strategy elicits a certain result. It is imperative to contrast backtesting to actual real life performance once launched. Plus, attention should be focused on when the strategy works and when it doesn't, not just the final result (both appear later in this report). Still, backtesting can provide greater insight into a strategy in conjunction with the real performance data.

Note: Back-tested data excludes the 10% manager discretionary component from 1978 to 2016, and is gross of fees.

From a return and risk perspective, the investment approach showed well in the backtest due to its defensive characteristics in major down markets. Throughout the entire backtesting period the Tactical Portfolio had an annualized return of 11.6% with 8.6% volatility (standard deviation) compared to 10.5% annualized return and 14.1% volatility for the equity markets (75% TSX / 25% S&P).

	Annualized Return	Annualized Volatility	Risk Adjusted Return
Tactical Portfolio	11.6%	8.6%	1.2
Benchmark (75% TSX & 25% S&P)	10.5%	14.1%	0.7

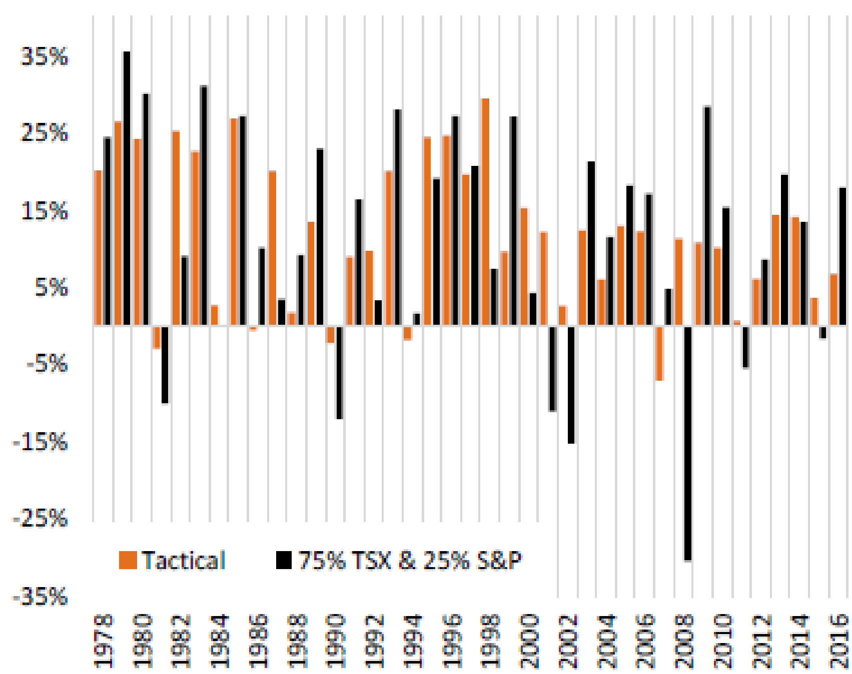
Source: Connected Wealth, Model Returns, Annualized Volatility is Standard Deviation of Monthly Performance Data, risk free rate set at 1.0%

Risk reduction characteristics

There is no magic bullet when it comes to investing. And while the Tactical is designed to tilt towards equities in up markets and bonds in down markets, it doesn't necessarily catch market tops or bottoms. The strength of the investment process comes in helping to avoid the majority of the portfolio damage when markets take a significant decline. There is a trade-off, however, as the Tactical Portfolio will not fully participate in an upward move in the market. After all, when the signals are all bullish it owns broad-based ETFs, which, by definition, are the market. This avoidance of extreme positive and negative performance can best be seen in the next two graphs.

Based on the backtested data and portfolio data since launch in September 2011, we plotted the calendar returns from 1978 until the present for the Tactical Portfolio and the equity markets comprised of 75% Canadian and 25% U.S. equity. While the Tactical did tend to underperform slightly in up markets (for example 2009, 2016), it significantly outperformed in down years (1981, 1990, 2001, 2008).

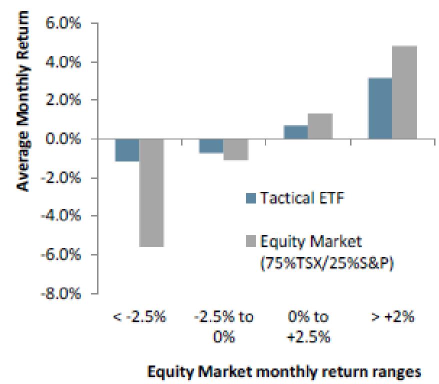
Calendar return distribution of Tactical vs. Equity Markets



Source: Connected Wealth, Back tested data 1978-2011, SMA composite performance 2011-16 gross of fees

As another way to cut through the data, we looked at months during which the equity markets fell by 2.5% or more and contrasted the average performance of the Tactical during those months. We then sliced various return ranges of the equity benchmark and measured how the Tactical performed. This highlights how Tactical has protected in down months with some sacrificed return in strong up months.

Sacrifices some upside for avoiding a lot of downside



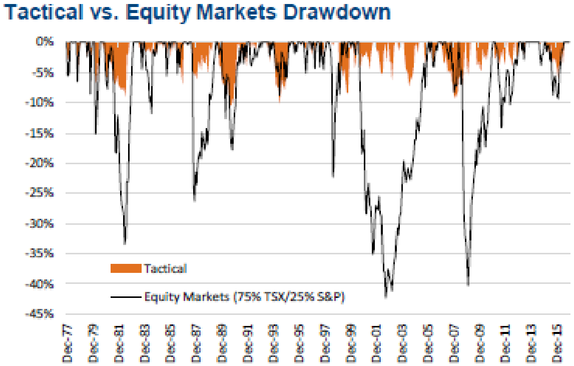
Source: Connected Wealth, Backtested data 1978 2011, SMA Composite performance 2011-2016 gross of fees

Drawdown

While standard deviation remains the industry norm for measuring risk or volatility, there are some other metrics that provide additional insight. One that has increasingly gained in popularity and use is drawdown; which measures the degree the portfolio and the equity markets have declined from their highs. This is how most investors think of risk: how much has the portfolio gone down in the past, during difficult times? In the chart to the right is the drawdown for the Tactical Portfolio and equity markets. Once again this is using backtested data from 1978.

While Tactical often suffered from short declines similar to the equity markets, the portfolio performed very well during any of the larger market declines during the backtesting period. Or simply put if the markets are going to drop 5% then recover, Tactical won't help much. However if the drop is going to be 10%, 20% or 50%, Tactical provides a significant amount of stability for a portfolio. For those who prefer the hard numbers, the table below summarizes much of the data from the back testing 1978-2011 and live performance data from 2011 till present.

Tactical vs. Equity Markets Drawdown



Source: Connected Wealth, Back tested data 1978-2011, SMA composite performance 2011-2016 gross of fees

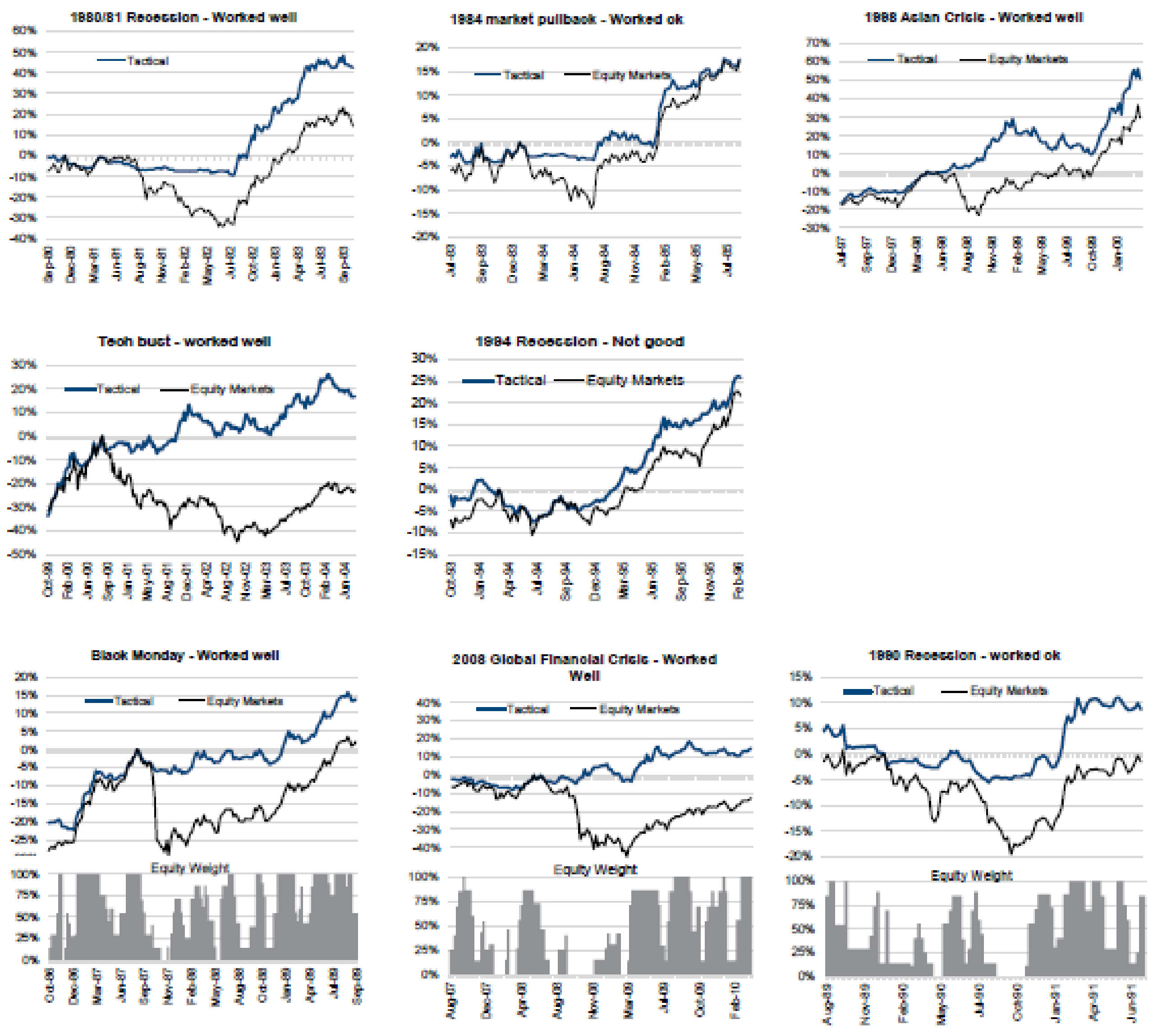
	Tactical	Equity Markets (75% TSX/ 25% S&P)	TSX Composite
Best 1-year	56%	77%	87%
Average 1-year	12.0%	11.7%	11.7%
CAGR	11.6%	10.5%	10.2%
Worst 1-year	-11%	-35%	-39%
Worst Peak to Trough	-12%	-42%	-43%
Months to recover	7	40	23
Annualized SD	8.6%	14.1%	15.5%
Downside Deviation	4.0%	11.3%	12.4%
Sharpe Ratio	1.2	0.7	0.6
Correlation		0.70	0.7
Beta		0.4	0.4

Source: Connected Wealth, back tested model data from 1978 to 2016

When it worked and when it didn’t

In our backtesting analysis and strategy development we wanted to drill down on times of extreme market stress or declines, to see how the Tactical strategy performed. After all, we designed a strategy to help protect in bad markets, so we wanted to be confident in the approach before launching with client money in 2011. This out-of-sample analysis was very enlightening, as it highlighted periods when the strategy worked very well plus in what kind of markets it doesn’t work as well.

Based on the backtested data, the Tactical certainly managed most big market declines in good fashion. We have included charts for each below including the run-up to the period of weakness plus a few quarters as the market heals. The 0% level is set at the high of equity markets before they sold off. This enable you to see how far the market was down and how far Tactical had fallen during the period. Even Black Monday which saw a one day decline in the Dow of 23%, Tactical managed to largely avoid the drawdown. The market had already started to weaken before that really bad day, making Tactical become more defensive. The bottom 3 charts include the rolling equity weight in the model during the time periods.



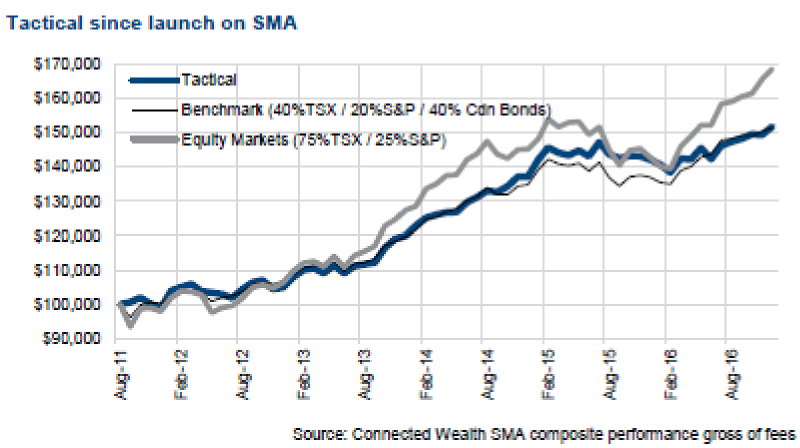
Source: Connected Wealth, back tested model performance data

In most instances of market weakness, Tactical performed as designed. The most notable exception was in 1994 and the culprit was interest rates. This model is predicated on the market behaving in a risk-on and risk-off fashion. This is the norm over the majority of periods in the market. Risk-on are periods where investors are taking on more risk, equities are rising in price and typically bond yields are flat or moving higher as well (bond prices flat or lower). Risk-off is when investors are selling equities and looking for a safe haven in bonds, bidding yields lower and bond prices higher. Sometimes, we have risk-off periods and bond yields are moving higher (bond prices lower). The Tactical portfolio is not a fan of those periods. The early phases of the 1994 recession was such an occurrence.

We also note very late in bull markets, the Tactical tends to underperform. Diving deeper into the data, it seems late in the cycle volatility is much higher and returns tend to be higher. With the trend less certain, Tactical tends to be more defensive which hurts the performance, that is, until the bear market takes hold.

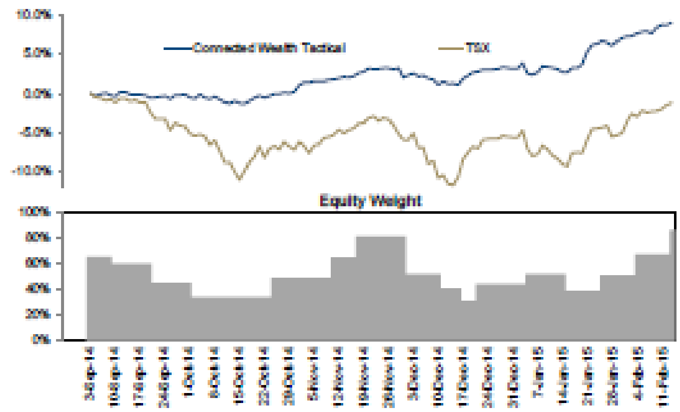
Since Launch

We launched this mandate in September 2011 on the Separately Managed Accounts (SMA) platform, with the lead portfolio manager as the first client. In late 2015 we made the same strategy available in a full prospectus mutual fund. They are both managed in identical fashion and the same signals. Based on SMA investor composite performance from launch till the end of 2016, the strategy has returned 8.1% on an annualized basis gross of fees. That is roughly inline with the mandates balanced benchmark comprised of 40% TSX / 20% S&P / 40% FTSE TMX Cdn Bond. Tactical has trailed the overall equity market, which is what we would expect given the markets have been in a bullish phase since launching in 2011.

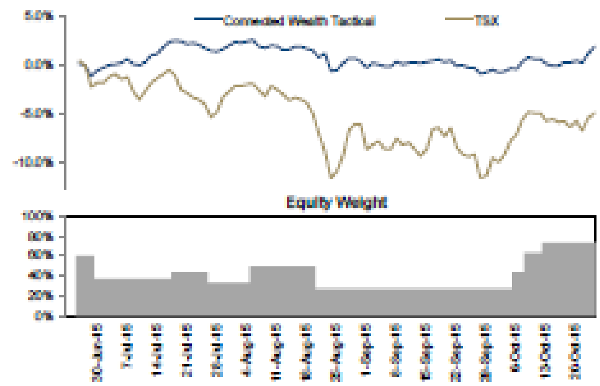


The objective of Tactical is to provide positive returns in up markets, albeit not as strong as the market. In down markets, Tactical is designed to be more defensive and protect value, creating a stabilizer for the overall portfolio. While we have witnessed a strong bull market since Tactical launched in 2011, there have been brief periods of market weakness. Not bear markets, but weakness nonetheless. In the following charts we contrast how Tactical performed during these corrections and included the rolling equity weight in the portfolio to demonstrate how it trades.

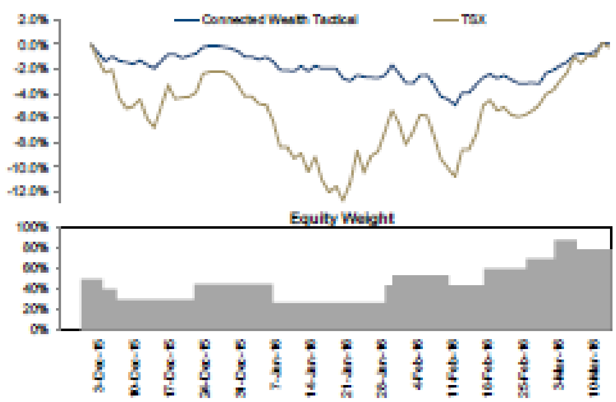
2014 Market Correction



2015 Market Correction



2016 Market Correction



Source: Connected Wealth SMA performance net of 2% fees

During each market correction, Tactical performed as designed by becoming more defensive by lowering its equity weight. Providing a stabilizer to a traditional investment portfolio of stocks, bonds and alternative products.

Portfolio Manager Final Thoughts

Our team believes we have created and manage a unique strategy that offers a powerful tactical diversification tool for investors. We also believe both the Separately Managed Accounts platform and our Connected Wealth mutual fund format offer cost effective access to the strategy. The performance since launching in 2011 supports our development process and provides efficacy for the strategy.

Based on our backtesting and performance since launch, the risk reduction characteristics really kick in during extended periods of market weakness. While it does not catch tops or bottoms, during big swings, either up or down, the Tactical Portfolio tends to be more heavily weighted in the outperforming asset class. We believe this is an effective strategy to incorporate within a portfolio to create a more tactical solution. If you would like to learn more about the Tactical Portfolio, please contact your Investment Advisor.

Charts are sourced to Bloomberg unless otherwise noted.
Report publish date 9 February 2017

Please note that past performance is not necessarily an indicator of future performance. The indicated rates of return since September of 2011 are gross of fees and/or commissions and represent client composite returns from the Separately Managed Accounts platform. Individual results of client portfolios may differ from that of the representative portfolio as fees may differ, and performance of specific accounts is based on specific account investiture.

Performance data prior to September 2011 is back-tested performance. Back-tested performance is hypothetical and does not represent actual performance and should not be interpreted as an indication of such performance. Actual performance for client accounts may be materially lower than that of back-tested performance which has certain inherent limitations. These include gross of fees, market trading friction, and retroactive application of the portfolio strategy to mention a few.