Connected Wealth Tactical – A Primer

Contents

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 and why we developed the strategy, analytics on what kind of market it works best, and what kind of market it doesn't work as well. Plus, we examine 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.

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Connected Wealth Tactical (Tactical)

- The Tactical strategy uses a systematic, rules-based approach to increase equity exposure in up markets and increase bond exposure in down markets.

- The holdings can oscillate between 100% equity and 100% bonds/cash, implementing this strategy by using a selection of broad-based 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 or cash-based at 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 uses static asset allocation approaches.

- Market swings have become bigger and occur more rapidly, an environment that is not ideal for a static asset allocation approach. Adding Tactical to complement a diversified portfolio can provide a tactical tilt to an overall portfolio and reduce total volatility while not sacrificing expected returns. This is the foundation of the Tactical strategy.

- The primary objective is to get defensive very quickly when markets correct, to provide a stabilizer for the portfolio and retain value. The second objective is to capture a reasonable amount of market up swings. It is a lot easier to make money if you don't lose it first.

I.   Why be Tactical with your asset allocation

Asset allocation is often the biggest factor in determining a portfolio's returns and volatility. This is why asset allocation sits as the foundation of just about every portfolio, attempting to find the "optimal" mix of asset classes to create the highest likelihood of achieving the investor objectives. Asset class characteristics, such as return and volatility, are usually based on history, sometimes a very long-term history. In the end, you have a long-term asset allocation that best matches the investor's long-term goals. This allocation is then populated with various investment vehicles whether individual securities, pooled funds, ETFs, etc.

This approach works and has worked for investors over the decades, and we believe should remain as the foundational core of properly constructed portfolios. However, we also believe this prescribed asset allocation is not written in stone and value can be added by tactically tilting around this baseline allocation. Here are some additional reasons to support being tactical:

 a. **Markets have evolved:** Most investors would agree that markets have changed. To be fair, markets have always changed and evolved. It would seem today that markets are now faster than ever before due to the behaviour of participants, technology and available investment vehicles. This appears to be creating bigger up-swings and down-swings, a market environment that appears more suited for a tactical component to asset allocation than a static allocation.

 b. **Muted return expectations:** Traditional asset allocation is most often based on long-term performance of equities and bonds. However, given current low bond yields and elevated equity valuations, the years ahead are more likely to be below average from a performance perspective. That doesn't mean market swings will be below average and tilting a portfolio to have more equity in up-swings and less equity in down-swings will have a more material impact in a lower return world.

a) Markets have evolved

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 and lower return expectations going forward, adding a tactical component can certainly help smooth the path.

Market swings have become larger and more pronounced in recent years, both up and down, due to a combination of fund flows, high-frequency trading and more fast money. There was a time a few decades ago that the average holding period for a NYSE- listed stock was over a decade. Now it is between 2 and 3 years. ETF flows, which measure in the billions, can change from inflows to outflows from one month to the next due to investor appetite. In addition, there are sizable amounts of capital allocated to quantitative strategies that move in and out of the market relatively quickly. This all feeds bigger, faster market swings.

A static asset allocation appears ill-equipped for today's markets. We believe the need to have a tactical component within a diversified portfolio has never been greater. The chart to the right highlights the TSX's tumultuous ride over the past few years. Clearly, it has accelerated in both directions during 2020. Volatility has been similar, albeit slightly less extreme, in the U.S. market, making this a tough investing environment, especially for buy-and-hold investors.

Big market swings, both up and down

— TSX Comp

Source: Bloomberg

Of course, the difficult part is how to be tactical, successfully. 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, for advisors you need an approach that is repeatable and can be implemented very quickly and easily across many households to be effective. Historically, however, the private wealth industry has been largely hamstrung in this goal given the many administrative and suitable tools.

It was for these evolving markets, with big fast swings, that we created the Tactical strategy back in 2011. Ours is a rules-based strategy which removes human emotion from the equation and can oscillate from as much as 100% equity to 0% equity and 100% bonds/cash. While nobody should change their asset allocation that much, Tactical is designed to complement or be a part of an overall portfolio. As equity markets rise, Tactical will tilt the portfolio slightly more towards equities and as equity markets weaken, the portfolio tilts more towards bonds.

This strategy is designed to add a tactical component to an overall portfolio.

b) Muted return expectations: Winter is coming for the static 60/40

Investing is not easy and never has been. However, the healthy performance of bonds and equities over the past 30 years has certainly helped reduce the portfolio impact of any missteps along the way. The adage, "a rising tide lifts all boats" certainly holds true. Over the past three decades, Canadian equities, global equities (in C$) and Canadian bonds have each annualized between 7-7.5%. Even if you knock off about 1.8% due to annualized inflation during that period, you are still looking at a real return over 5%. This is a pretty friendly environment for creating wealth with a standard 60/40 buy and hold strategy.

What about the next 5 or 10 years? This is when things get a little more sobering. Canada's bond universe, which has contributed a relatively steady 7% annualized performance over the past three decades will be hard pressed to continue this trend. The yield is currently about 2.5%, which means to maintain a 7% return, price appreciation would need to contribute about 4.5% a year. Since bond prices go up when yields go down, we would just need bond yields to move down enough to lift performance by 4.5% annually. Given the current duration (sensitivity of bond prices to changes in yields) of about 8, we would need yields to fall about 0.5%...per year. You can probably imagine where we are going. To maintain a 7% return on bonds for the next 5 years, we would need yields to drop deep into negative territory for government bonds and maybe even investment grade.

This is a simplification, ignoring credit, changing bond market constituents, convexity, etc. However, the conclusion remains, from current levels of bond prices, yields and credit spreads (historically low), generating 7% from a broad-based bond allocation seems unlikely during the 2020s. Let's assume yields remain flat as do credit spreads over the next 5 years, a broad-based bond allocation will then generate about 2.5% or a little better annually.

If bonds are "doing" 2.5%, that means for the 60/40 to maintain its 7.0% annualized nominal return, the 60% in equity has to do a lot heavier lifting. In fact, the equity portion would need to enjoy 10% annualized returns. That is not unheard of (see 1st chart). However, it would imply in 2025 that the TSX reaches 24,350, the S&P 4,960 and the Dow to ring in at 40,000.

Equities may be hard pressed to achieve this based on current levels or valuations. We will ignore earnings as these are depressed currently and tend to be very volatile. Perhaps a better longer-term valuation gauge is the value of the global stock markets to the global economy. While the equity markets and the economy can diverge for periods given fluctuations in the earnings multiple, there is a long-term correlation. Currently, the total value of global equities is a little higher than the global economy ($86 trillion versus $83 trillion). This is rare (see 2nd chart), and certainly adds to the case for more muted equity market returns in the years ahead.

If equity returns are somewhat muted and bond returns are even more challenging, the static 60/40 portfolio may have some tough years ahead.

10% equity returns over 5-years is not unheard of but is asking a lot from equities

Legend: Cdn Equity — Global Equity — 10%

It is rare to see the global equity markets worth more than the global economy. Implies lower expected returns going forward

Legend: Global stock markets — Global GDP

Source: Bloomberg

What is an investor to do? If you agree with the above analysis that a static buy-and-hold 60/40 portfolio utilizing broad market exposure investment vehicles for bonds and equities will be challenged, there are options to help address this.

Even if returns end up being muted over the coming years, say 3-4%, that does not mean there won't be big swings up and down. For instance, the trailing 5-year annualized return for the TSX is a modest 5% while the individual calendar year returns since 2015 include -8%, +21%, +9%, -9% and +23%. So far in 2020, the TSX is flat, but it certainly has not been a flat year.

A buy-and-hold static asset allocation strategy simply goes along for the ride without any adjustments. When return expectations are higher, that is often an easier strategy to implement, as the rollercoaster ride finishes at a much higher level. However, if return expectations are low, utilizing a process to have greater equity exposure during the upswings and less during the downswings along the way can help your portfolio finish at a higher level than the static 60/40 strategy.
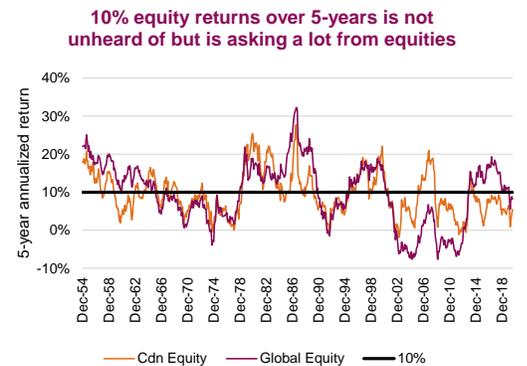
II.   How to be tactical

What we set out to build

In 2011, we came to the conclusion that investors should incorporate a tactical component to their portfolios, tilting their long-term asset allocation to be slightly more offensive at times or a bit more defensive at other times. This conclusion was based on our view that the markets would continue to experience big market swings, both up and down. Thus, sticking with a static asset allocation and simply going along for the ride didn't seem optimal. This raised the question: How to be tactical? One approach is fundamentals, using valuations, sentiment, economic data, or "gut feel" to determine when to tilt above or below baseline equity. However, once you have been investing long enough, you realize the market makes fools of just about everyone over time. Few investors saw 2008 or 2020 coming. And if they saw the 2020 bear coming, did they see the rebound as well? So instead of trying to "outsmart" the market, which is comprised of many really smart market participants, we opted instead to be faster.

This prompted us to create a quantitative strategy that would turn defensive very quickly if the market lost momentum and headed into a corrective phase or a bear market. We also wanted to participate to a reasonable degree in any equity market uptrend. Finally, we wanted our Tactical strategy to be *very* tactical – meaning it could not only make small asset allocation changes of 5% or 10% but would be capable of moving as much as 100% equity or even 100% bonds/cash with no equity. While we do not believe any investor should change their overall asset allocation to such a degree, tactical moving to such a degree enables a smaller allocation within a portfolio to make a meaningful difference to the overall portfolio allocation.

Tactical enables the Portfolio Manager or Advisor to outsource a portion of the tactical decision-making for a portfolio to an emotionless rules-based strategy.

Going under the hood – The "algos"

The Tactical Portfolio is a risk-on/risk-off momentum-based quantitative strategy. Let's explain what that really means. Tactical uses a number of momentum or trend-following models (explained below) to determine if the equity markets are in an uptrend or a downtrend. If in an uptrend, Tactical is in Risk-on mode, meaning it holds a higher-than-usual equity weight. If the equity market is in a downtrend, Tactical will hold much less equity and park the proceeds in bond ETFs – thus, risk-on/risk-off. This differs from most momentum strategies that are investing where momentum is strongest. Tactical simply tries to get defensive quickly when markets lose momentum, to provide a stabilizer for the portfolio during periods of market stress; and when markets rise, it seeks to capture a reasonable amount of the upside.

That may make it sound easy but it isn't. Developing and managing a rules-based strategy (quant, algo, etc.) is really a balancing act. For Tactical, it was designing rules that would react quickly enough when the market weakens, but not too quickly to get fooled by random market noise. Sometimes, the market drops 2% and then resumes its upward trend. Sometimes that 2% drop is the first step towards a 10% or 20% decline. Whipsaws or abrupt changes in market direction are a weakness for most momentum-based strategies, which must be managed within the rules. You also don't want to trade too excessively as this will erode returns due to commissions and trading friction costs.

Finally, keep it relatively simple. Excessively complex and sophisticated models or strategies often sound compelling or "smart". Unfortunately, adding more bells and whistles to a strategy can often lead to unforeseen exposure or unintended consequences. It may not sound as "smart" but a simpler robust model is often better – that sums up our Tactical strategy.

These are the key factors we incorporated into developing the Tactical strategy and how it trades.
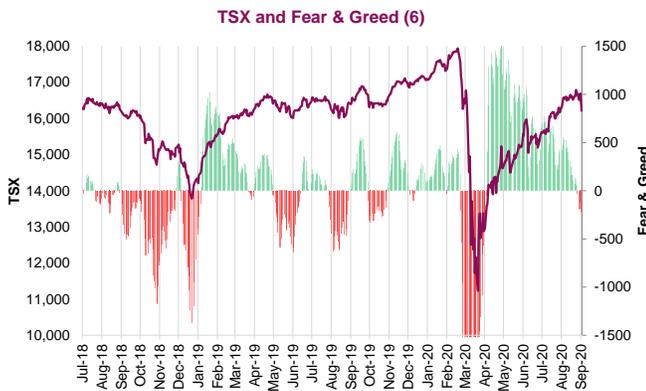
The signals

Tactical is made up of 7 signals – 4 in Canada and 3 in the U.S. The signals attempt to determine if the equity market is in an uptrend or not. If rising, we refer to it as Bullish; the opposite is Bearish. The signals only look at the equity markets and are mathematically very similar but each has a different sensitivity. Different sensitivities cause each signal to react either quicker or slower to changes in market momentum. Each of the 7 signals has a predetermined weight within the portfolio. If a signal is bullish, that portion of the portfolio is allocated to an equity ETF; if bearish, then a bond ETF. These are the signals or models that determine the portfolio's equity/bond allocation.

Each individual signal is based on a combination of two Bloomberg technical studies called **Fear & Greed (FG)** and **Bloomberg Trender.** FG is an oscillation indicator that measures the market's momentum. Trender is an adaptive indicator that attempts to minimize whipsaws. We combine these two studies as both are required to confirm a change in the equity/bond mix before we trade.

In other words, if a signal is bullish, which has us allocated to equity, both that signal's FG and Trender would need to turn bearish before we traded into bonds. Once in bonds, both would need to turn bullish for the portfolio to move that portion back into an equity ETF. We use this double-confirmation approach to reduce trading and to increase the likelihood that the signal is capturing a true change in the market's direction.

Fear and greed: This technical study measures the buying to selling strength in the market, attempting to ascertain whether the bulls or the bears are in control. It is an excellent oscillator for divergence analysis and for identifying trend persistence. It 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, or in our case an index. This is an oscillation-based signal.

The 1st chart is the FG for the TSX with a sensitivity of 6 over the past couple of years. The green bar denotes a bullish signal that the bulls are in charge and the trend is positive. Red bars denote the opposite: bears are in charge and the trend is lower. This indicator works best when there is a clear trend in the market, either up or down. However, it does struggle when there is no consistent trend or there is a brief period of trend reversal.

TSX and Fear & Greed (6)

To help balance FG, we combine it with Bloomberg Trender. Keep in mind that for us to make a change in the portfolio, we need both FG and Trender to indicate a change in the signal.

Bloomberg Trender: As the name suggests, this indicator helps identify the current trend, either up or down. It is an adaptive indicator that defines the degree and direction of the trend in a way that attempts to capture the majority of the position profit while minimizing whipsaws. The tool is designed to stay just out of range of the typical pullbacks in price within the trend.

Another way to think about Trender is that while the market is in an uptrend, it provides a trailing stop. If the stop is breached, this indicates the trend has reversed and gives a bearish reading. Once the trend is bearish, Trender is a trailing "buy back in" level.
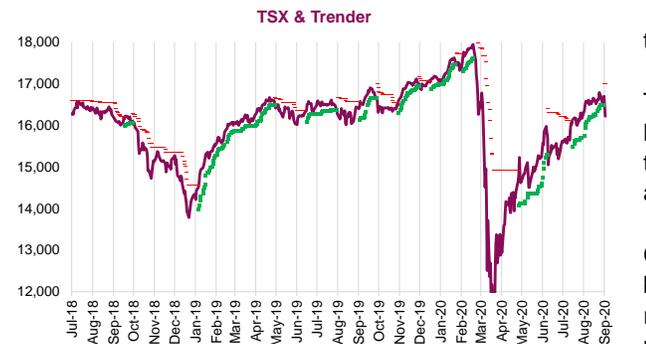
The 2nd chart is the TSX and Trender over the past few years. A green line underneath the TSX implies a bullish reading and the price level of that line is the equivalent of a trailing stop. Once breached, it becomes a red line above the TSX.

TSX & Trender

Combining both the FG and Trender creates one of our signals. The bottom chart is a combination of the two charts above with an additional red/green bar that denotes the positioning of the signal (portfolio position): Red in bonds, green in equities. Using two models that are both required to indicate a change in trend in the market before we make an asset allocation change in the portfolio reduces the risk or frequency of whipsaws. Plus, since the calculation of FG and Trender are different, this also creates greater diversity.

TSX & Trender

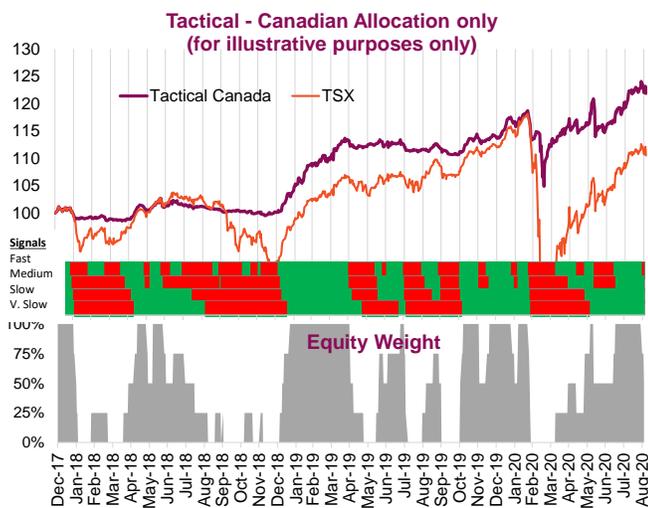Model Position: Red in bonds, green in equities

Fear & Greed
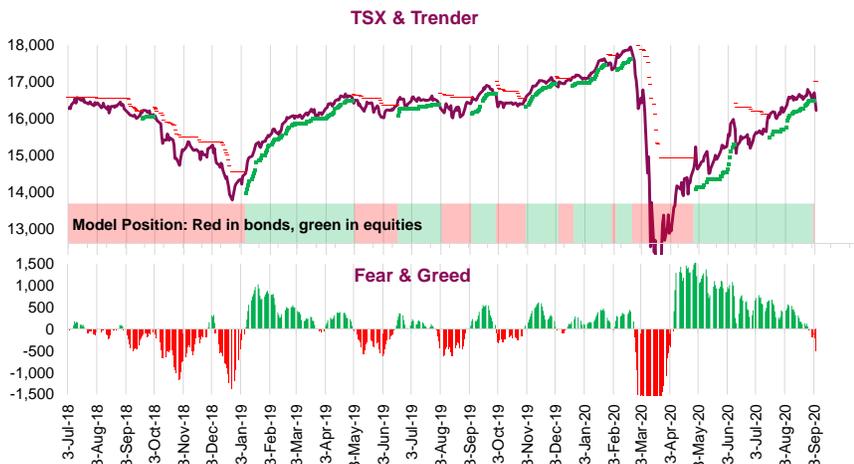
Why we use multiple signals and sensitivities

There is no perfect model, sadly. In a similar way to 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 above example was the Canadian medium signal. There is also a fast, slow and very slow signal that each have different sensitivities. The more sensitive the signal, the faster it switches from being bullish to bearish or vice versa. Being quicker is usually good as it will change relatively soon into a change in market direction. But it also leads to more false moves that are subsequently reversed. Once again, it is a balancing act.

We use varying sensitivities which staggers how the portfolio trades. This helps reduce the amount of trading but more importantly enables the portfolio to move in stages or steps, not all at once, thereby creating diversification by sensitivity.

The accompanying chart includes the four signals used for the Canadian portion of the portfolio. The signal positions are in the green/red bars across the middle of the chart with the total equity weight in the lower panel. As you can see, the faster the signal, the quicker it changes when the market changes direction or trend. However, the faster the signal, the more often it will change its reading only to change back shortly afterwards (we refer to this as getting fooled). A good example of this is June 2020, when the market dropped suddenly. The two faster signals subsequently went from equities into bonds yet the market stabilized and started to recover. Based on those two signals, nobody knew if that market drop was the start of another big leg down in the market or not. Fortunately, the other two signals, the slower ones, stayed on course thereby mitigating the impact.

This may sound like we don't like our faster signals…getting fooled now and again. However, the "Fast Canadian" signal was in bonds within 2 days of the start of the past bear market. And it was the first to buy back in after the market bottom. It is indeed a balancing act – everything is a trade-off.

Tactical - Canadian Allocation only (for illustrative purposes only)

III.   Putting it all together

The Tactical Portfolio has fixed weights in three equity and three bond ETF pairs driven by the signals that determine 90% of the portfolio. These include Canadian Equity versus Canadian Bonds for 55%, U.S. Equity versus U.S. Bonds for 25% and the NASDAQ versus U.S. Bonds for 10%. The allocation decision between equity and bonds is based on signals that incorporate a combination of momentum, oscillation, trend-following and trend-exhaustion indicators. These signals, or technical studies, are pointed at the various equity markets – the portfolio owns bonds when some of the signals don't like 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. However, if the market is changing direction quickly, these signals can change very fast.
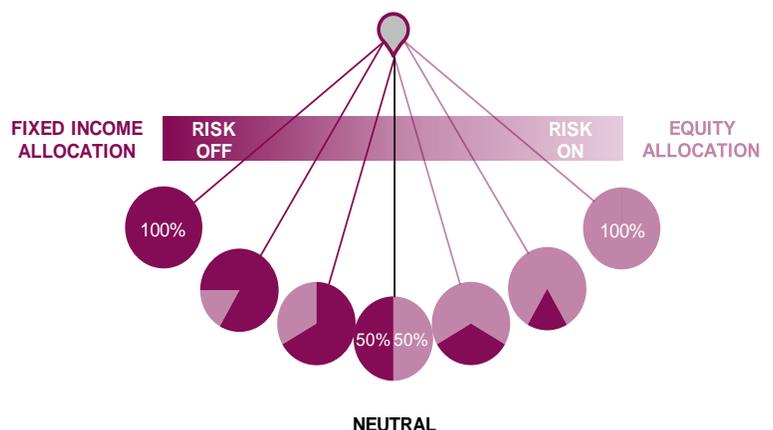
% of Portfolio	Signals	Equity ETF		Bond ETF
55%	4	Canadian equity ETF	→	Canadian bond ETF
25%	2	U.S. equity ETF	→	U.S. bond ETF
10%	1	NASDAQ ETF	→	U.S. bond ETF
10%		Managers Discretion ETFs		

In the table below, we have outlined the various models that we use in the Tactical model. Fear and Greed (FG) and Trender are always paired and need to confirm one another before a switch is made. The speed-related name of the signal denotes the signal's sensitivity setting:

Equity / Bond	Weight	Models
Canadian Equity vs Canadian Bonds	55%	Fast: FG & Trender
		Medium: FG & Trender
		Slow: FG & Trender
		Super Slow: FG & Trender
U.S. Equity vs U.S. Bonds	25%	Fast: FG & Trender
		Slow: FG & Trender or 50 v 200DMA
NASDAQ vs Corp Bonds	10%	Medium FG & Trender

The remaining 10% of the portfolio is at the discretion of the managers. This helps manage cash flows and holds broad-based ETFs as well.

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, amid concern about rising interest rates, we have recently begun using lower-duration bond ETFs. Instead of buying the broad bond market, we have tilted slightly to shorter-term bonds. We believe this should help performance if/when bond yields rise.

While we reserve the flexibility to select other ETFs on occasion, the table below lists the ETFs we currently use.

Equity ETFs	Category	AUM($m)	Expense Ratio	Avg Bid/Ask %	Bond ETFs	Category	AUM($m)	Expense Ratio	Avg Bid/Ask %
ISHARES CORE S&P/TSX CAP	Cdn Equity	$6,553	0.06	0.07	VANGUARD CANADIAN ST BD	Cdn Bond	$1,243	0.11	0.22
HORIZONS S&P/TSX 60 ETF	Cdn Equity	$2,115	0.03	0.04	ISHARES CORE CAN SHORT	Cdn Bond	$2,449	0.10	0.15
ISHARES S&P/TSX 60 ETF	Cdn Equity	$9,759	0.18	0.06	ISHARES CORE CAN UNI	Cdn Bond	$4,902	0.10	0.08
					BMO AGGREGATE BOND ETF	Cdn Bond	$5,258	0.08	0.09
VANGUARD TOTAL STOCK	US Equity	$161,829	0.03	0.02	VANGUARD TOTAL BOND	US Bond	$61,367	0.04	0.01
VANGUARD S&P 500 ETF	US Equity	$161,365	0.03	0.01	VANGUARD SHORT-TERM BOND	US Bond	$26,804	0.05	0.01
INVESCO QQQ TRUST SERIES	Tech	$132,596	0.20	0.01	ISHARES CORE U.S. AGG	US Bond	$79,520	0.04	0.01
TECHNOLOGY SELECT SPDR	Tech	$35,227	0.13	0.01					

Source: Bloomberg

IV.   How to best use Tactical : A sidecar strategy

Given that Tactical can oscillate from as much as 100% equity to 100% bonds, this is not a standalone solution. Nobody should change their asset allocation to that degree. Tactical oscillates its asset allocation to this degree as it is designed to complement or sit as a sidecar component of an overall portfolio. This provides a rules-based tactical addition with the objective of tilting the overall portfolio allocation more towards bonds during times of market stress and tilting more towards equities in uptrends.

Since the strategy launch in September 2011, it has been as low as 17% equity (83% bonds and cash) and as high as 94% equity. The chart at right contrasts the equity weighting in the portfolio since 2014 with the long-term average, clearly demonstrating the tactical component of the management style.

Tactical Equity Weight over time

% equity weight   Long term average
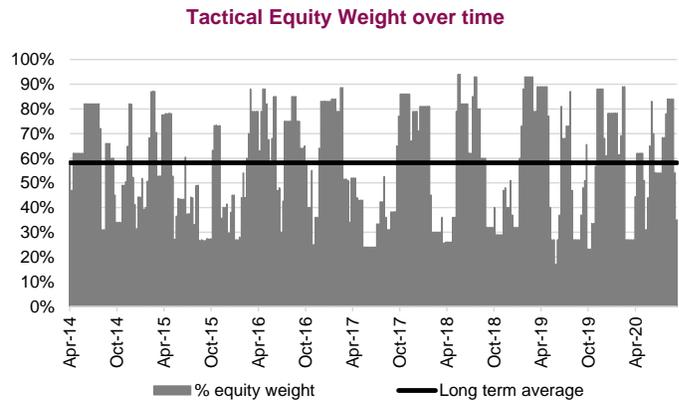
Where does Tactical fit within a portfolio?

There is no hard and fast rule for where Tactical fits within a portfolio. The strategy holds both equity and bond ETFs, which are traditional asset classes. However, the method Tactical trades and changes its asset mix creates a more alternative performance history. Based on the prospectus, the risk-rating is medium-low, which does make its placement more flexible. Here are several common approaches from a number of long-term Tactical users:

Balanced: Tactical sits in the Tactical Balanced category of funds and has a long-term average asset mix of about 60% equity and 40% bonds and cash. Allocating Tactical based on its long-term asset mix is perhaps the most common approach.

Equity: A more conservative approach is to allocate Tactical in the equity allocation of a portfolio. While Tactical only has a 60% average equity weight, there are times when it is closer to 100%.

Alternative: Tactical is a volatility management strategy, designed to provide a tactical stabilizer for a portfolio. This has similarities to other volatility-management strategies in the alternative space.

There is no right or wrong answer as it often depends on how you construct and bucket different investments within your portfolio.
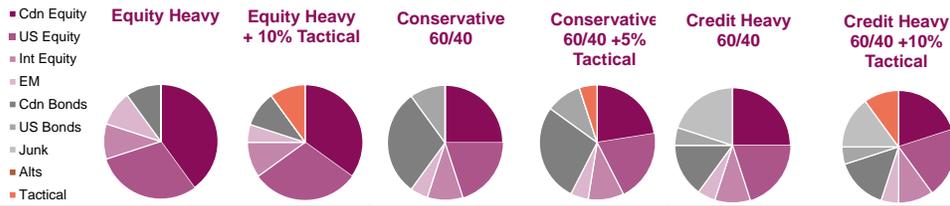
How much Tactical?

The objective of the Tactical Portfolio is the following: to provide capital appreciation but more importantly to provide a strong diversifier and reduce the risk of the overall portfolio; to be defensive during those troubling corrections or bear markets, but also enjoy a reasonable amount of market upswings.

The appropriate amount of Tactical within a portfolio really depends on what else is in the portfolio.

Balanced portfolios that hold defensive bond allocations or defensive alternatives, a smaller allocation of Tactical makes sense (approximately 5%). Tactical is another defensive component of the portfolio, providing tactical defense. For portfolios in which the bond allocation is very credit heavy, a larger allocation of Tactical makes sense (approximately 10%). Lower interest rates have caused many portfolios to shift down the credit curve, to pick up more yield. However, this neutralizes some of the defensive characteristics of the portfolio's bond allocation, making the entire portfolio riskier. Tactical can help address this as when it goes into bonds, it's typically in bond ETFs that have a large government bond component.

The accompanying analysis uses performance data since we launched the strategy on the firm's Separately Managed Account (SMA) platform in 2011. We have contrasted the performance of various sample portfolios using index returns and the implications of adding a certain percentage of Tactical to the mix, adding more Tactical for the equity heavy and credit heavy portfolios. Under all scenarios, Tactical helped improve the performance a little but was more impactful on the downside volatility reductions. The final two columns contrast the Credit Suisse Hedge Fund Index returns with Tactical. While Tactical is not an alternative and is available in either SMA, full prospectus or ETF formats, its return and risk profile is not that dissimilar to the alternative space.

	Cdn Equity
	US Equity
	Int Equity
	EM
	Cdn Bonds
	US Bonds
	Junk
	Alts
	Tactical

Equity Heavy   **Equity Heavy + 10% Tactical**   **Conservative 60/40**   **Conservative 60/40 +5% Tactical**   **Credit Heavy 60/40**   **Credit Heavy 60/40 +10% Tactical**

	Equity heavy	+10 Tactical	Cons 60/40	+5 Tactical	Credit Heavy	+10 Tactical	Alts	Tactical
Cdn Equity	40%	35%	25%	23%	25%	20%	0%	0%
US Equity	30%	30%	20%	20%	20%	20%	0%	0%
Int Equity	10%	10%	10%	10%	10%	10%	0%	0%
EM	10%	5%	5%	5%	5%	5%	0%	0%
Cdn Bonds	10%	10%	30%	28%	15%	15%	0%	0%
US Bonds	0%	0%	10%	10%	5%	5%	0%	0%
Junk	0%	0%	0%	0%	20%	15%	0%	0%
Alts	0%	0%	0%	0%	0%	0%	100%	0%
Tactical	0%	10%	0%	5%	0%	10%	0%	100%
Return	9.86%	10.08%	8.39%	8.55%	9.15%	9.24%	7.01%	8.25%
Standard Deviation	9.30%	8.71%	6.54%	6.49%	7.20%	6.94%	7.51%	6.02%
Downside Deviation	8.76%	7.75%	5.64%	5.36%	6.28%	5.67%	4.26%	2.91%
Sharpe	0.95	1.04	1.13	1.16	1.13	1.19	0.80	1.21
Sortino	1.01	1.17	1.31	1.41	1.30	1.45	1.41	2.49
Up Mkt Cap	95%	93%	69%	70%	76%	75%	38%	67%
Down Mkt Cap	82%	75%	47%	46%	52%	51%	-2%	44%
3m Best	14.7%	14.0%	11.4%	11.2%	11.0%	10.8%	15.4%	8.9%
3m Worst	-15.4%	-13.8%	-9.3%	-8.9%	-10.6%	-9.6%	-10.9%	-3.6%
6m Best	15.1%	15.1%	12.1%	12.2%	13.7%	13.6%	19.6%	12.4%
6m Worst	-11.3%	-10.0%	-6.7%	-6.3%	-7.9%	-6.8%	-7.7%	-4.4%
1-yr Best	24.6%	23.9%	18.7%	18.8%	20.0%	19.9%	25.1%	19.0%
1-yr Worst	-8.1%	-6.5%	-4.0%	-3.9%	-5.0%	-4.7%	-3.9%	-5.0%

Note: Tactical SMA performance used from 2011 to present. Alternative performance is based on the Credit Suisse Hedge Fund Index. This framework is gross of (i.e. excludes) fees. Source: Bloomberg & Richardson Wealth

Improving downside deviation by half or a full point is a meaningful change for a portfolio when only making a 5% or 10% allocation change. Improving a portfolio's Sortino or Sharpe ratio by 10% or more is also very meaningful. This is further evidence of the downside protection that Tactical can provide a portfolio.

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 13 we highlight additional defensive results since launching the strategy into the real world in 2011.

V.   Back-testing analysis/model development

Caveat: Back-testing 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 back-testing 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, back-testing can provide greater insight into a strategy in conjunction with the real performance data.

As 90% of the Tactical Portfolio follows the regimented technical/quantitative signals, we conducted extensive back-testing analysis during model development and continue to do so since launching in 2011. During model or signal development, our goal was to create a strategy that would get defensive quickly during corrections or bear markets, yet still enjoy a respectable amount of up markets. We believe the last nine years of performance have demonstrated our success in developing a successful strategy. However, we also learned during the backtesting analysis and since launching that there is no "solving the markets." They change and there are environments that Tactical works well in, as well as markets that prove much more challenging. Maximizing the former and minimizing the latter is the ongoing objective.

Note: Back-tested data excludes the 10% manager discretionary component from 1978 to August 2020 and excludes fees.

From a return and risk perspective, the investment approach showed well in the back-test due to its defensive characteristics in major down markets. Throughout the entire back-testing period, the Tactical Portfolio had an annualized return of 10.7% with 8.3% volatility (standard deviation) compared to 9.8% annualized return and 15.4% volatility for the TSX.

	Annualized Return	Annualized Volatility	Risk-Adjusted Return
Tactical Model	10.7%	8.3%	1.17
TSX Composite	9.8%	15.4%	0.57
S&P 500	11.2%	13.8%	0.74

Note: Back-tested performance, 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.

Calendar return distribution of Tactical vs. Equity Markets

Source: Richardson Wealth, Backtested data, 2020 is year-to-date as of August 31
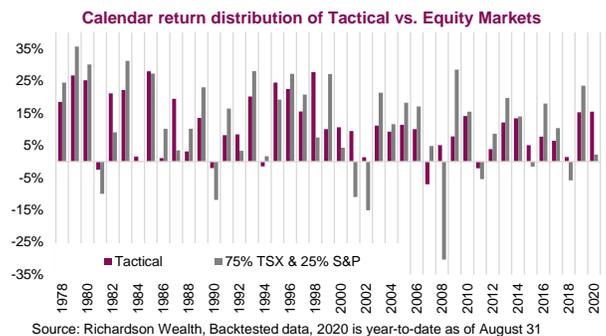
Based on the back-tested data, we plotted the calendar returns from 1978 until the present for the Tactical model and the equity markets comprised of 75% Canadian and 25% U.S. equity. While the Tactical did tend to underperform slightly in up markets (for example 2009, 2016), it significantly outperformed in years that experienced material market declines (1981, 1990, 2001, 2008, 2020).

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 would have performed. This highlights how Tactical has protected in "down" months with some sacrificed return in strong "up" months.

Sacrificing some of the upside to aviod a lot of the downside

Equity market monthly return ranges

Source: Richardson Wealth, Backtested data 1978 to Aug 2020
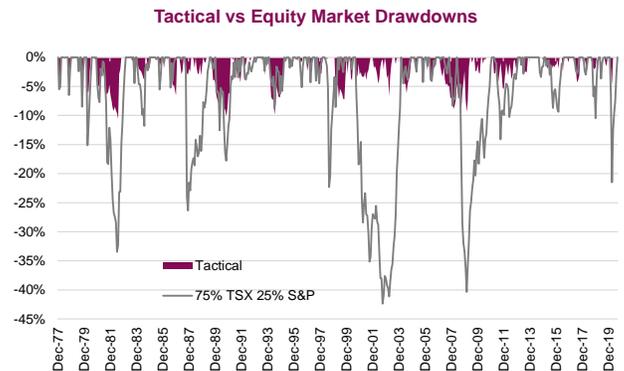
Drawdown

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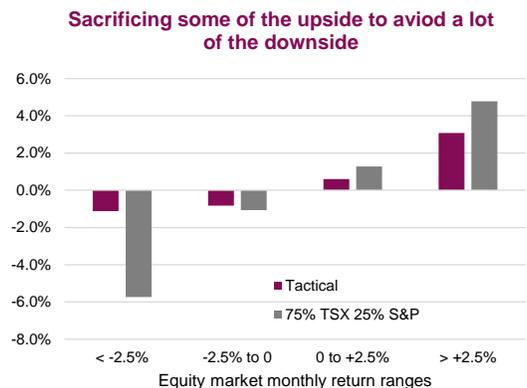
While standard deviation remains the industry norm for measuring risk or volatility, there are some other metrics that provide additional insight. One that has increasingly gained in popularity and use is drawdown. This measures the degree the portfolio and the equity markets have declined from their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

Source: Richardson Wealth, Backtested Model: 1977 to Aug 2020

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 back-testing period. 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 right summarizes much of the data from the back-tested period of 1978 to August 2020.

	Tactical	Equity Markets (75% TSX / 25% S&P)	TSX Composite
CAGR	10.7%	10.3%	9.8%
Annualized SD	8.3%	14.1%	15.4%
Downside Deviation	3.9%	11.6%	12.6%
Sharpe Ratio	1.17	0.66	0.57
Sortino Ratio	2.49	0.80	0.70
Best 1-year	52.1%	76.5%	86.9%
Avg 1-year	10.9%	11.4%	11.3%
Worst 1-year	-9.0%	-35.3%	-39.2%
Worst Peak to Trough	-10.6%	-42.4%	-43.3%
Months to recover	3	40	23
Correlation		0.71	0.68
Beta		0.42	0.37

Source: Richardson Wealth, Backtested Model 1977 to Aug 2020

Past bears: When it would work and wouldn't

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

Based on the back-tested data, the Tactical certainly managed most big market declines in good fashion. Below, we have included charts for each, 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 the sell off. This enables 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, allowing Tactical to become more defensive.
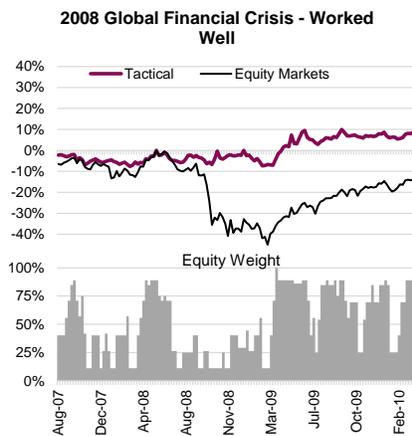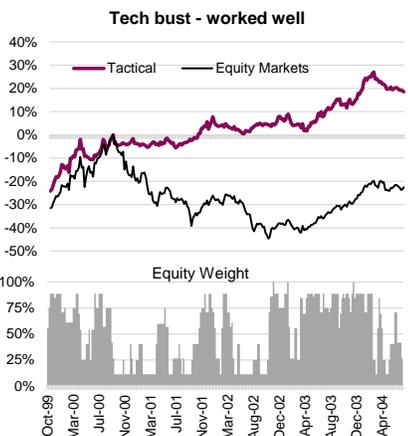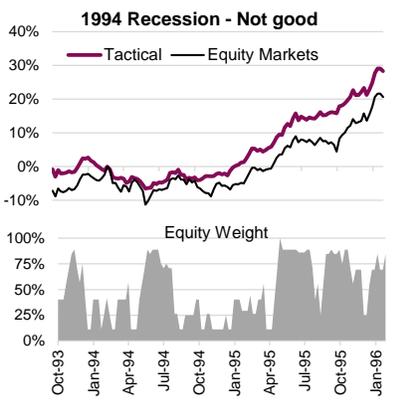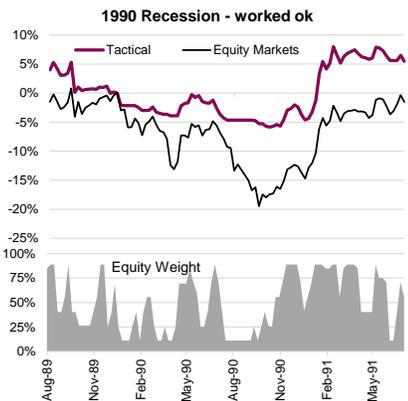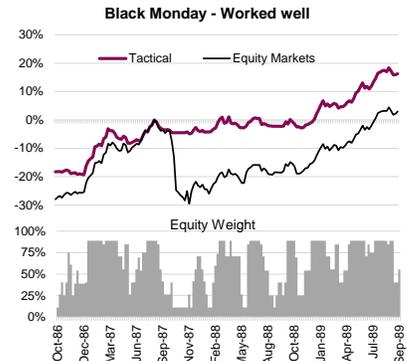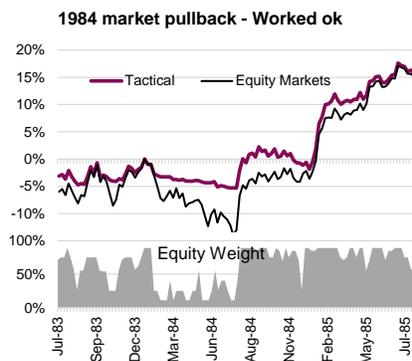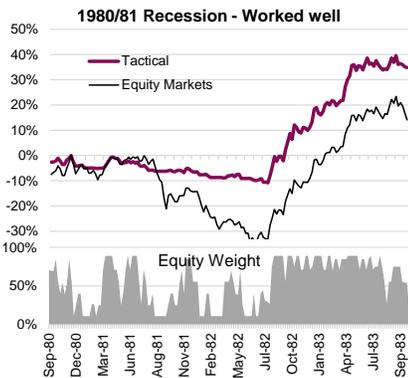
Source: Richardson Wealth, Back-tested data 1978 to August 2020.

In most instances of market weakness, Tactical would have performed as designed, providing a stabilizer for portfolios. There were a few exceptions as every strategy can experience markets that are not ideal. Below we have noted a few of these:

Falling equity prices and falling bond prices: This occurred in 1994. While most periods of equity market weakness coincide with falling yields (higher bond prices) this did not hold in 1994 given rising concern over government debt levels. When Tactical goes risk-off, it moves to bonds, so this was not ideal. While bond prices fell less than equities, they both fell.

Flat oscillating equity markets: In 1999, equity markets were flat and oscillating at a frequency that was not ideal for our signals. Markets would strengthen enough to lure Tactical back into heavy equities then roll over and Tactical would exit for bonds. This occurred a few times that year that negatively influenced the strategy. This is not the norm but can occur from time to time.

Late bull markets: 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.

No strategy works in every market (sadly) and while we have optimized for most environments, there are some that Tactical will struggle.

VI.   Since launch

This strategy was launched live with client assets in September 2011 on our firm's 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 and in May of 2017 in an ETF (ticker RTA). They are all managed in identical fashion, with the same signals and same trade execution. There are some minor differences in performance due to fees and the timing of fund/ETF cash flows. As SMA is quoted gross of fees, we adjusted performance to include the Fund (F-class) and ETF fees for a better apples-to-apples comparison.

Annualized performance since:	SMA (less fee adjustment)	Fund (F-class)	ETF (RTA)
September 2011	7.4%		
December 2015	7.5%	7.3%	
May 2017	7.2%	7.1%	7.2%

As of 31 August 2020

Based on SMA investor composite performance from launch up until August 2020, the strategy has returned 8.2% on an annualized basis, gross of fees. That is roughly in line with the mandate's balanced benchmark: 7.8%, comprised of 40% TSX / 20% S&P / 40% FTSE TMX Cdn Bond. Tactical has trailed the overall equity market: 9.2%, based on 75% TSX & 25% S&P 500. However, materially, it has outpaced the TSX, 6.1%, during this period. Given defense is job #1, we are pleased with these results over the past nine years.

Growth since launch on SMA
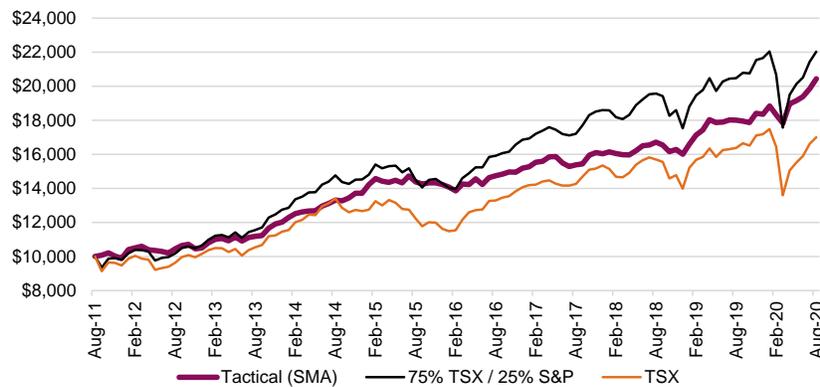
Source: Richardson Wealth, Bloomberg

The objective of Tactical is to provide positive returns in "up" markets, albeit it is not designed in the first instance to be 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. Since launching in 2011, there have been a number of market corrections and one BIG bear market. The charts below indicate how Tactical managed in those challenging environments. While each period of market weakness is different, the general pattern has been that Tactical holds onto value during those times, acting as a defensive stabilizer.

Oil First Starts to Tumble in 2014 *

2015 China Currency Devaluation *

China economic fears, oil hits $26 **

Market Correction of Feb 2018 **

How Tactical navigated Q4 2018**

and the Big Bear + Bounce of 2020 **
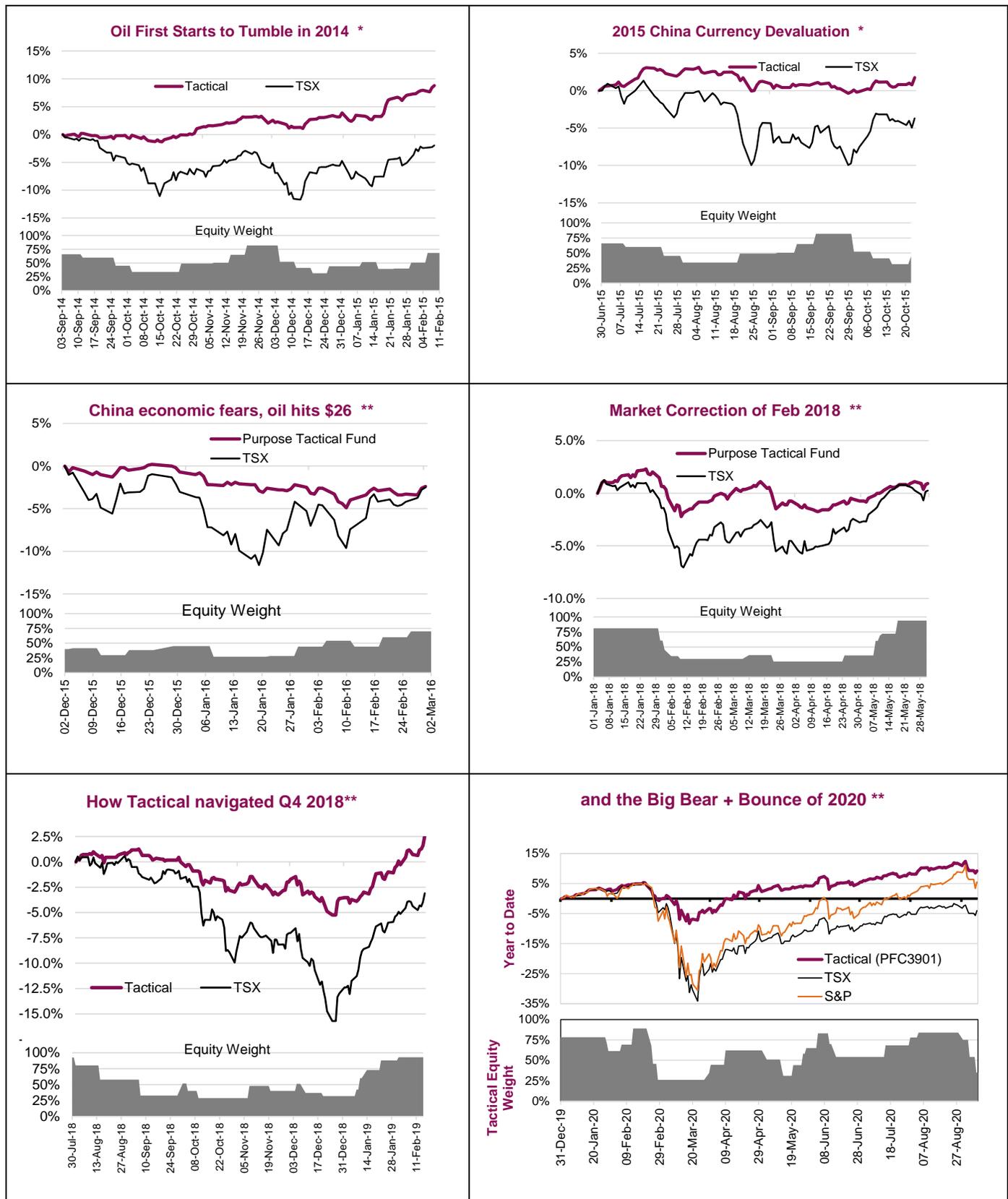
* Separately Managed Account performance, ** Purpose Tactical Asset Allocation Fund performance (f-class). Source: Richardson Wealth, Bloomberg

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.

VII.   Portfolio Management Team's 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 Purpose mutual fund / ETF 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 back-testing and performance since launch, the risk-reduction characteristics effectively 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.