

Our annual look at financial markets' fickle seasonal tendencies

By Taylor Schleich

Seasonality [noun]: A characteristic of a time series in which the data experiences regular and predictable changes that recur every calendar year

Financial market participants are always looking for predictable and exploitable patterns (seasonal or otherwise) in data to make profitable trading decisions. And in markets, you *will* tend to see some seasonal patterns emerge. Some are rock solid, playing out year-after-year almost without fail (government bond issuance comes to mind; lulls coming around the holidays/budget periods). There are other seasonal patterns that loosely exist but can often prove fickle, deviating significantly from the trend (the old adage "sell in May and go away" is a good example here). So which seasonal patterns held up well in 2022? And which do expect to hold (or break down) in 2023?

Unsurprisingly, interest rates moves in 2022 were effectively uncorrelated with our post-GFC sample. Indeed, it's hard for any seasonal tendency to have influence when central banks are undertaking the most aggressive tightening cycles in generations. And to be clear, there's never really been identifiable, *statistically significant* seasonality in government bond yields anyways. Technically, we've tended to see GoC rates decline in the first half of the year and tick higher in the second half of the year but in our view, it's a fool's errand to rely blindly on these simple averages. In 2023, we are looking for rates to fall in the first half of the year as the Bank of Canada (and eventually the Fed) step to the sidelines. But we won't be counting on a rebound in the second half of the year, as cuts are likely to move increasingly to the forefront.

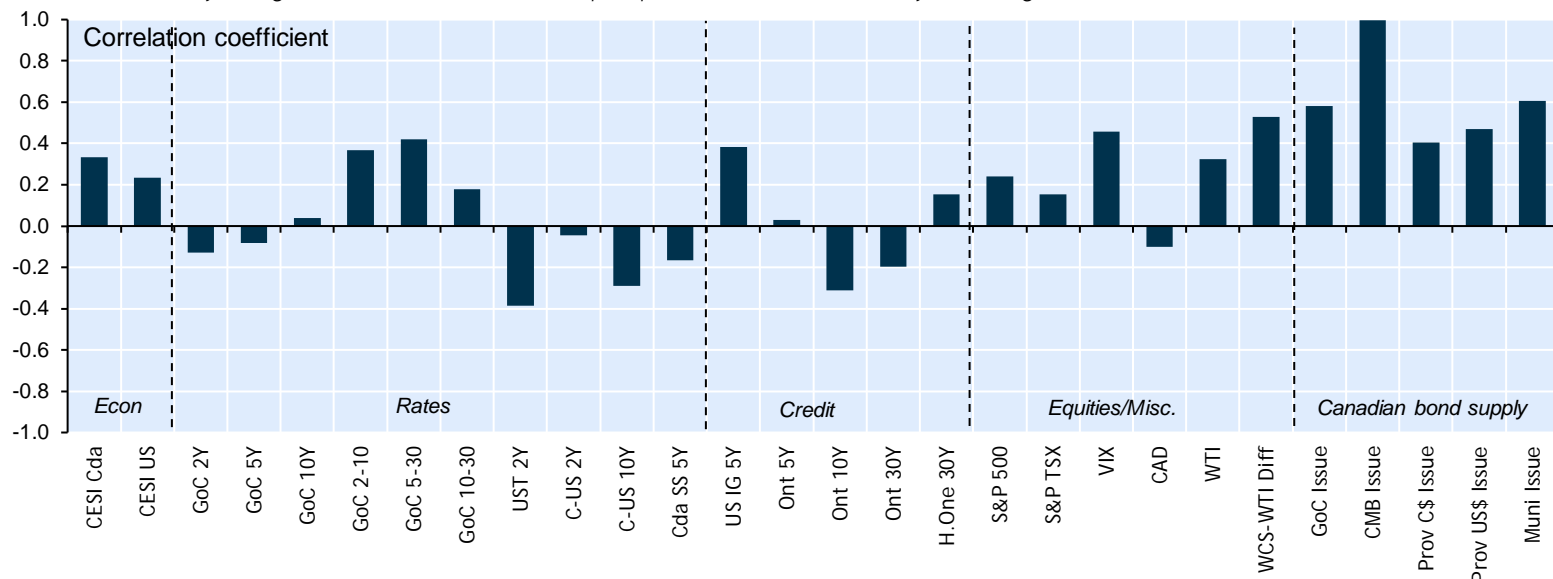
Like with rates, equity moves in 2022 were extreme and often dictated by central bank rate expectations which steadily climbed throughout the year. While correlations with historical moves were negligible, we'd note that the aforementioned "sell in May and go away" strategy would've proved successful last year. In this new year, we might not see this rule of thumb prove as effective. Rather, we expect the early stages of 2023 to consist of uninspired risk performance (notwithstanding an impressive rally in these first few days), with central banks continuing to tighten policy and the heretofore resilient economy showing more signs of trouble. While the economy might not improve much as 2023 progresses, once it's clear that the hiking cycle is over and monetary policymakers are staying on the sidelines (rate cuts increasingly coming into focus) we might see risk appetite improve. That's an outlook that's broadly similar for Canadian public sector credit spreads, which were technically *negatively* correlated with historical seasonal tendencies in 2022.

Canadian swap spreads are often cited as a case study in seasonality. The theory goes that as mortgage activity picks up in the spring and fall, hedging-related paying pushes swap spreads wider. Indeed, from 2010 to 2021, swap spreads widened in March and April (cumulatively) in ten of 12 years. That relationship didn't hold in 2022, as the Bank of Canada began raising rates which sent the housing market into a cold spell. We don't expect the mortgage market to thaw this spring, as the BoC maintains a restrictive policy stance and housing affordability sits at its most dire levels in decades. Thus, mortgage-related paying might remain subdued. This might limit the amount of swap spread widening we see this spring, even if spreads are tight on a recent historical basis.

Simply put, we think assessing seasonality is a worthwhile exercise; it's nice to know how these key financial variables tend to move/behave. But at the same time, take average historical moves with a large, large grain of salt. Fundamentals (like sky-high inflation and a rapid monetary policy tightening episode) will often overwhelm seasonal tendencies to the extent they exist (statistically significantly) in the first place. Just like in 2022, there's a high degree of uncertainty on where the economy and inflation settle this year. Seasonals might be influential in stable/calm market environments, but conditions are hardly that now.

Chart 1: Outside government bond supply, few financial market variables were consistent with seasonal trends in 2022

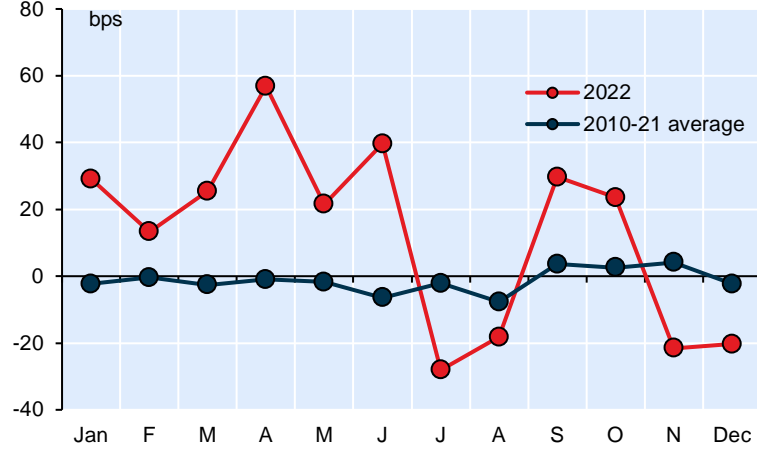
Correlation in monthly changes for select variables: 2022 vs. prior post-GFC trend (i.e. twelve-year average from 2010-21)



Source: NBF, Bloomberg, Bank of Canada | Note: See our 'heat maps' on Page 3 for average levels and changes of key financial market variables.

Chart 2: Rate moves were far from 'normal' in 2022...

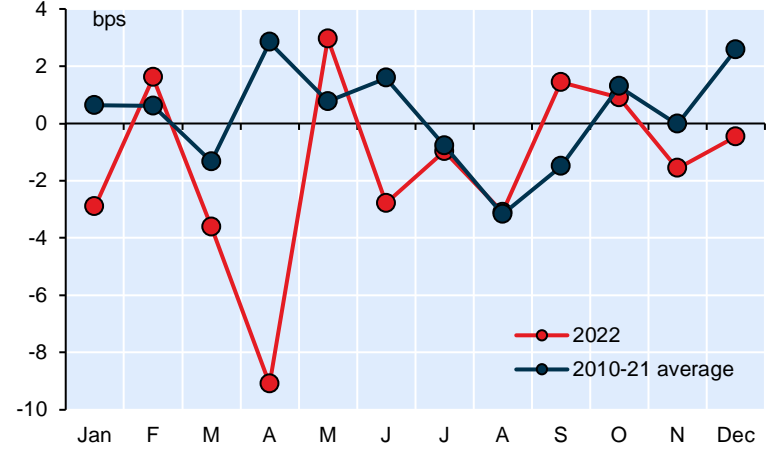
Average monthly change in 10Y GoC yield: 2010-21 average vs. 2022



Source: NBF, Bloomberg | Note: Based on average monthly rates

Chart 3: ...same for swap spreads which tightened in spring '22

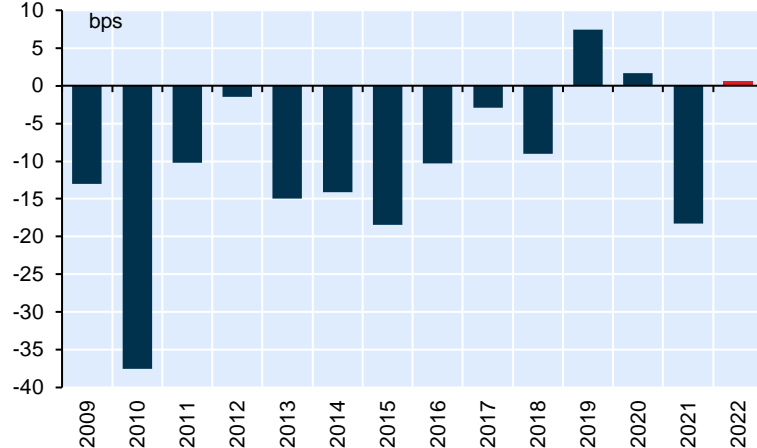
Average monthly change in 5Y CAD swap spread: 2010-21 average vs. 2022



Source: NBF, Bloomberg | Note: Based on average monthly spreads

Chart 4: More 'reliable' seasonals didn't work in '22 either...

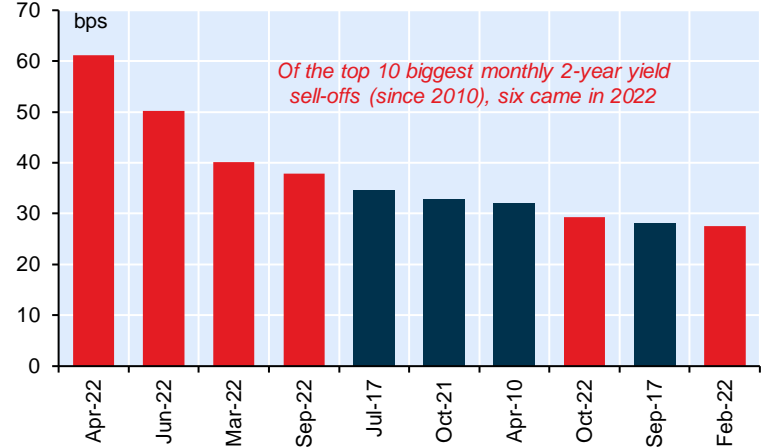
M/m change in Canada-US 5Y differential in December of each year



Source: NBF, Bloomberg | Note: Based on average monthly rates

Chart 5: The rethink in policy rates was the dominant force

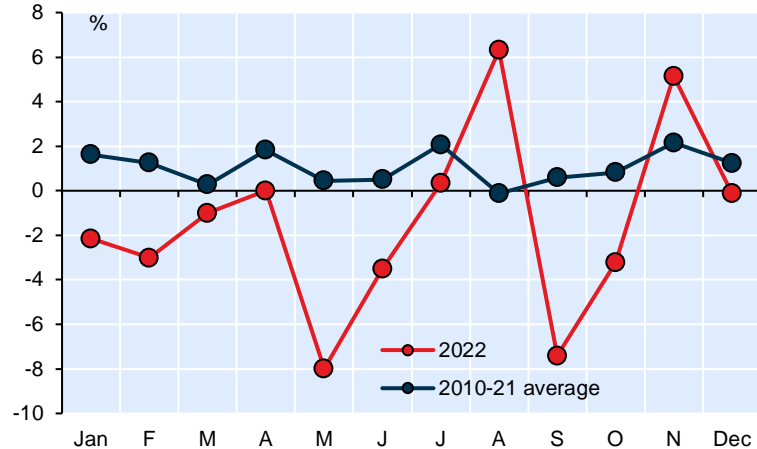
Ten largest monthly 2-year GoC yield sell-offs since 2010



Source: NBF, Bloomberg | Note: Based on average monthly rates

Chart 6: 'Sell in May and go away' proved successful

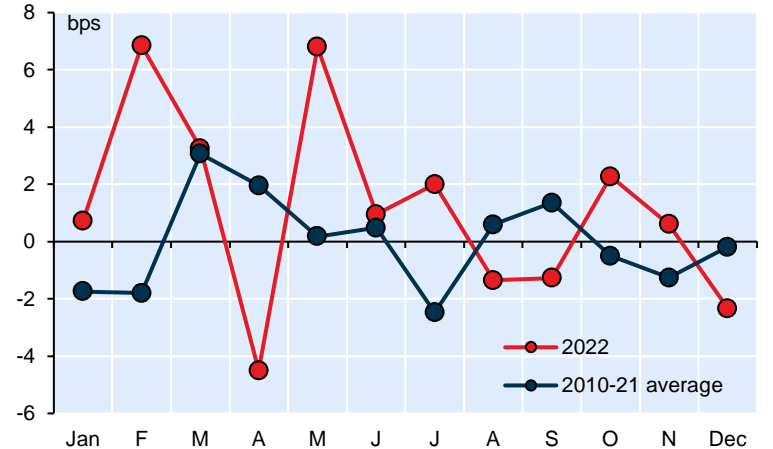
M/m % change in S&P 500: 2010-21 average vs. 2022



Source: NBF, Bloomberg | Note: Based on average monthly indices

Chart 7: Provi credit was out of sync with 'normal' trends

Average monthly change in 10Y Ontario spread: 2010-21 average vs. 2022



Source: NBF | Note: Based on average monthly spreads



Table 1: Seasonal heat map (levels)

Average level by month: 2010-2022 (13 years)

Variable	Unit	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg	Std dev	High	Low
Eco																	
US Economic Surprise	Index	24	23	21	-3	-21	-23	-10	0	11	17	23	26	7	18	Dec	Jun
Cda Economic Surprise	Index	-1	1	9	25	48	58	42	14	11	10	9	8	20	19	Jun	Jan
Cda-US Eco Surprise	Index	-24	-21	-12	28	70	82	51	14	0	-7	-15	-19	12	37	Jun	Jan
Rates/Swaps																	
US Bond Yield (2Y)	%	0.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.1	1.2	1.2	1.0	0.1	Dec	Jan
US Bond Yield (10Y)	%	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.1	2.1	2.2	2.3	2.3	2.3	0.1	Mar	Aug
Cda Bond Yield (2Y)	%	1.1	1.1	1.1	1.2	1.2	1.2	1.2	1.2	1.3	1.3	1.3	1.3	1.2	0.1	Nov	Mar
Cda Bond Yield (10Y)	%	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	1.9	2.0	2.0	2.0	2.0	0.0	May	Aug
Cda-US Yield Spread (2Y)	Bps	19.2	16.1	15.1	20.5	22.1	22.1	25.2	24.3	24.5	24.5	19.2	14.5	20.6	3.8	Jul	Dec
Cda-US Yield Spread (10Y)	Bps	-31.4	-32.7	-34.0	-28.9	-25.1	-24.6	-22.9	-20.6	-21.2	-22.8	-26.9	-34.4	-27.1	5.0	Aug	Dec
US Swap Spread (5Y)	Bps	11.7	12.8	12.2	12.2	12.2	12.5	11.6	11.7	10.9	11.4	10.6	9.7	11.6	0.9	Feb	Dec
Cda Swap Spread (5Y)	Bps	33.5	34.2	32.7	34.6	35.5	36.8	36.0	32.8	31.6	32.8	32.7	35.0	34.0	1.6	Jun	Sep
Cda-US Swap Sprd/Sprd (5Y)	Bps	21.8	21.4	20.5	22.4	23.3	24.3	24.4	21.2	20.6	21.5	22.1	25.3	22.4	1.6	Dec	Mar
Credit																	
US IG CDX (5Y)	Bps	72.9	73.7	76.2	75.2	77.6	79.3	75.4	75.9	77.5	77.8	76.0	74.2	76.0	1.9	Jun	Jan
Ontario vs GoC (3Y)	Bps	29.4	30.5	33.4	34.4	34.3	33.3	31.9	31.3	31.2	30.4	30.1	29.7	31.7	1.8	Apr	Jan
Ontario vs GoC (5Y)	Bps	45.9	46.0	49.6	51.3	50.8	50.4	48.4	48.7	48.6	47.9	47.5	47.2	48.5	1.8	Apr	Jan
Ontario vs GoC (10Y)	Bps	76.0	74.9	78.0	79.4	80.1	80.6	78.5	78.9	80.1	79.8	78.7	78.3	78.6	1.7	Jun	Feb
Ontario vs GoC (30Y)	Bps	86.7	86.5	88.5	90.1	91.1	91.1	89.5	90.3	91.2	91.2	89.9	89.6	89.7	1.6	Sep	Feb
Stocks/Vol																	
S&P 500	MM%	1.3	0.9	0.2	1.7	-0.2	0.2	1.9	0.4	0.0	0.5	2.4	1.1	0.9	0.8	Nov	May
S&P TSX	MM%	1.3	1.4	-0.4	0.6	-0.1	-0.2	0.5	0.4	-0.1	-0.1	1.5	-0.1	0.4	0.7	Nov	Mar
Volatility (VIX)	Index	17.9	18.8	20.4	18.1	18.9	19.0	17.1	18.5	19.6	19.7	18.1	18.1	18.7	0.9	Mar	Jul
US Financial Cond'n	Index	0.1	0.1	-0.2	-0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.1	Jul	Mar
Ccy/Commod																	
US Dollar (Trade Wgt)	Index	89.3	89.4	90.0	90.0	90.5	90.4	90.7	90.3	90.6	90.8	91.5	91.4	90.4	0.7	Nov	Jan
Canadian Dollar	US\$/C\$	85.1	84.8	84.7	85.5	85.0	84.9	85.0	84.9	84.7	84.3	83.8	83.4	84.7	0.6	Apr	Dec
Crude Oil (WTI Spot)	US\$/bbl	69.0	70.5	72.4	73.0	73.5	73.5	73.3	70.8	70.6	71.0	69.3	68.0	71.2	1.9	Jun	Dec
Nat Gas (HH Future)	US\$/MMBtu	3.4	3.3	3.2	3.3	3.5	3.6	3.5	3.6	3.6	3.6	3.7	3.5	3.5	0.2	Nov	Mar
Gold (Spot)	US\$/oz	1420.2	1440.2	1437.8	1445.1	1440.0	1442.7	1439.4	1479.0	1479.6	1466.0	1461.0	1446.7	1449.8	17.9	Sep	Jan
Bond Supply																	
GoC Nominal (CAD)	C\$/bln	10.7	12.3	10.0	12.8	13.5	11.7	12.6	14.6	9.1	15.3	13.2	6.5	11.8	2.5	Oct	Dec
CHT (CAD)	C\$/bln	0.0	4.6	5.3	0.0	5.3	5.5	0.0	4.7	5.3	0.0	4.7	5.2	3.4	2.5	Jun	4X
Provincial (CAD)	C\$/bln	6.5	5.3	4.7	6.3	6.5	6.6	4.3	4.5	5.6	5.5	5.6	3.9	5.4	0.9	Jun	Dec
Provincial (USD)	C\$/bln	2.7	1.2	0.2	1.8	2.2	1.1	1.5	0.4	1.5	1.1	0.4	0.4	1.2	0.8	Jan	Mar
Municipal (CAD)	C\$/bln	0.2	0.4	0.4	0.6	0.8	0.6	0.2	0.2	1.0	0.6	0.6	0.2	0.5	0.3	Sep	Dec

Source: NBF, Bloomberg | Note: To aid interpretation, shading has been applied from high to low values, with green generally synonymous with "risk-on" and red most consistent with "risk-off"; for equities, values reflect monthly changes.

Table 2: Seasonal heat map (monthly changes)

Average month-over-month change: 2010-2022 (13 years)

Variable	Unit	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg	Std dev	High	Low
Eco																	
US Economic Surprise	Index pts	-3	-1	-2	-23	-19	-2	14	10	10	6	7	3	0	11	Jul	Apr
Cda Economic Surprise	Index pts	-5	2	8	17	23	10	-17	-27	-4	-1	-1	-1	0	14	May	Aug
Cda-US Eco Surprise	Index pts	-2	3	10	40	42	12	-30	-37	-14	-7	-8	-4	0	24	May	Aug
Rates/Swaps																	
US Bond Yield (2Y)	Bps	1.4	2.6	0.3	1.9	-1.8	0.4	-0.4	-1.7	7.5	5.1	7.5	3.8	2.2	3.2	Nov	May
US Bond Yield (10Y)	Bps	1.0	2.0	0.9	-1.7	-3.7	-3.4	-5.8	-10.8	6.2	5.9	6.2	3.8	0.0	5.3	Nov	Aug
Cda Bond Yield (2Y)	Bps	-1.0	-0.5	-0.7	7.3	-0.2	0.3	2.8	-2.7	7.7	5.1	2.2	-0.8	1.6	3.4	Sep	Aug
Cda Bond Yield (10Y)	Bps	0.1	0.7	-0.5	3.4	0.0	-2.9	-4.2	-8.5	5.6	4.2	2.1	-3.7	-0.3	4.0	Sep	Aug
Cda-US Yield Spread (2Y)	Bps	-2.4	-3.1	-1.0	5.4	1.6	0.0	3.2	-1.0	0.2	0.1	-5.4	-4.6	-0.6	3.1	Apr	Nov
Cda-US Yield Spread (10Y)	Bps	-0.9	-1.3	-1.3	5.2	3.8	0.5	1.7	2.3	-0.6	-1.7	-4.1	-7.4	-0.3	3.4	Apr	Dec
US Swap Spread (5Y)	Bps	-0.5	1.1	-0.6	0.0	0.0	0.3	-0.8	0.0	-0.8	0.4	-0.8	-0.9	-0.2	0.6	Feb	Dec
Cda Swap Spread (5Y)	Bps	0.4	0.7	-1.5	1.9	0.9	1.2	-0.8	-3.2	-1.3	1.3	-0.1	2.3	0.2	1.6	Dec	Aug
Cda-US Swap Sprd/Sprd (5Y)	Bps	0.9	-0.4	-0.9	1.9	1.0	1.0	0.0	-3.2	-0.5	0.8	0.6	3.3	0.4	1.6	Dec	Aug
Credit																	
US IG CDX (5Y)	Bps	-2.1	0.8	2.5	-1.0	2.4	1.7	-3.9	0.5	1.6	0.3	-1.8	-1.8	-0.1	2.0	Mar	Jul
Ontario vs GoC (3Y)	Bps	-0.2	1.1	2.9	1.1	-0.1	-1.0	-1.4	-0.6	-0.1	-0.8	-0.3	-0.4	0.0	1.2	Mar	Jul
Ontario vs GoC (5Y)	Bps	-0.4	0.1	3.7	1.6	-0.5	-0.4	-2.0	0.3	-0.1	-0.7	-0.4	-0.2	0.1	1.4	Mar	Jul
Ontario vs GoC (10Y)	Bps	-1.6	-1.1	3.1	1.5	0.7	0.5	-2.1	0.4	1.2	-0.3	-1.1	-0.4	0.1	1.5	Mar	Jul
Ontario vs GoC (30Y)	Bps	-1.1	-0.2	2.0	1.6	1.0	0.0	-1.6	0.8	0.9	0.0	-1.3	-0.3	0.1	1.1	Mar	Jul
Stocks/Vol																	
S&P 500	%-pts	1.3	0.9	0.2	1.7	-0.2	0.2	1.9	0.4	0.0	0.5	2.4	1.1	0.9	0.8	Nov	May
S&P TSX	%-pts	1.3	1.4	-0.4	0.6	-0.1	-0.2	0.5	0.4	-0.1	-0.1	1.5	-0.1	0.4	0.7	Nov	Mar
Volatility (VIX)	%-pts	0.3	9.0	8.8	-7.0	6.9	2.0	-8.7	10.6	5.0	3.9	-7.0	2.2	2.2	6.6	Aug	Jul
US Financial Cond'n	Index pts	0.1	0.0	-0.3	0.1	0.1	0.0	0.1	-0.1	-0.1	0.0	0.1	-0.1	0.0	0.1	Jul	Mar
Ccy/Commod																	
US Dollar (Trade Wgt)	%-pts	0.1	0.0	0.7	-0.1	0.7	0.0	0.3	-0.5	0.4	0.2	0.8	0.0	0.2	0.4	Nov	Aug
Canadian Dollar	%-pts	0.0	-0.3	-0.2	0.9	-0.5	0.0	0.1	-0.2	-0.2	-0.4	-0.6	-0.5	-0.1	0.4	Apr	Nov
Crude Oil (WTI Spot)	%-pts	1.2	2.1	1.8	-0.2	6.1	1.7	0.1	-3.1	0.2	1.4	-2.1	-1.4	0.6	2.4	May	Aug
Nat Gas (HH Future)	%-pts	-1.9	-5.1	-2.1	3.6	5.7	1.6	0.6	1.8	2.6	1.0	4.6	-5.1	0.6	3.5	May	Feb
Gold (Spot)	%-pts	1.9	1.6	-0.1	0.6	-0.2	0.3	-0.3	2.6	0.2	-0.7	-0.6	-1.0	0.4	1.1	Aug	Dec
Bond Supply																	
GoC Nominal (CAD)	C\$/bln	4.3	1.6	-2.4	2.8	0.7	-1.8	0.9	2.0	-5.5	6.3	-2.1	-6.7	0.0	3.8	Oct	Dec
CHT (CAD)	C\$/bln	-4.8	4.6	0.8	-5.3	5.3	0.2	-5.5	4.7	0.5	-5.3	4.7	0.5	0.0	4.3	May	3X
Provincial (CAD)	C\$/bln	2.6	-1.4	-0.4	1.5	0.3	0.1	-2.3	0.2	1.1	-0.1	0.1	-1.8	0.0	1.4	Jan	Jul
Provincial (USD)	C\$/bln	2.0	-1.5	-1.0	1.6	0.4	-1.1	0.4	-1.0	1.0	-0.4	-0.7	0.0	0.0	1.1	Jan	Feb
Municipal (CAD)	C\$/bln	0.1	0.1	0.1	0.2	0.2	-0.2	-0.4	0.0	0.8	-0.4	0.0	-0.5	0.0	0.3	Sep	



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