THACKRAY SEASONAL TRADE — EXTENDED VERSION —

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Canadian Dollar– Are We There Yet?

Summary

- The Canadian dollar has a period of seasonal strength in April
- April is seasonally the strongest month for the Canadian dollar (CAD)* relative to the U.S. dollar (USD) across a broad number of metrics
- Oil is a key driver in the value of CAD, but increasing oil prices in April are not necessary for the April CAD trade to work
- Ideal seasonal entry date for CAD trade is the last day of March and the ideal exit date is the last day of April
- Technically, CAD is in a consolidation pattern, poised for a breakout

Introduction

Like many other people, I have fond memories as a child of taking long family car trips. Inevitably, at some point in the journey my siblings and I would ask the big question, "are we there yet?" We knew that we were not at our destination, but we wanted to express our impatience. When the answer came back, "no," we naturally would ask the follow on question, "when are we going to get there?"

Investors understand the fundamental reasons for the CAD slide: dramatically lower oil prices and a loose Canadian monetary policy

Investors long the Canadian dollar, are asking the same questions, "are we at the bottom, and if not, when?" It has been a painful experience watching the Canadian dollar (CAD) slide. Investors understand the fundamental reasons for the CAD slide: dramatically lower oil prices and a loose Canadian monetary policy, but this does not help with understanding where a possible bottom might be set, or even if the equilibrium price will be at a lower or higher level. These are tough questions and market experts have prognosticated both much higher and lower levels.

The purpose of this report is not to put forth a long-term prognostication on the direction of the Canadian dollar, but rather isolate the possibility of the Canadian dollar performing well relative to the U.S. dollar (USD), in the near future. Understanding this dynamic, will allow investors to adjust their portfolios and to take advantage of a seasonal tradeable opportunity.

Seasonal trend for CAD/USD

The Canadian dollar tends to outperform USD in April.

The value of the Canadian dollar relative to the U.S. dollar is effected by many different variables, including monetary policies, fiscal policies, governance, investment outlook and commodity prices. Despite the interaction of many different variables, the Canadian dollar has positive and negative seasonal trends. The Canadian dollar tends to outperform USD in April. It also has a secondary period of seasonal strength from August 20th to September 25th, and a period of negative seasonal period from October to January.

There are two main reasons that the Canadian dollar tends to perform well in April, relative to the U.S. dollar. First, April has historically been the strongest month of the year for oil and energy companies. As a net exporter of oil, the Canadian economy

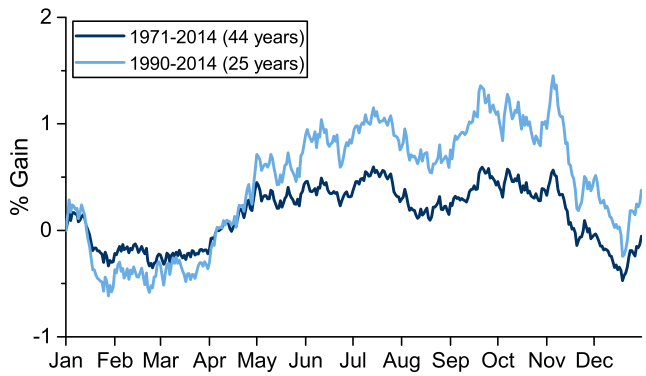
* Canadian dollar/ U.S. dollar data in this report uses the Canadian dollar as the base and is sourced from the U.S. Federal Reserve Economic Data

benefits from higher oil prices. Second, the Canadian government fiscal year-end finishes on March 31st, allowing the government to put forth positive economic forecasts, that tend to support a stronger Canadian dollar.

The seasonal trend of the Canadian dollar performing well in April has been persistent over time

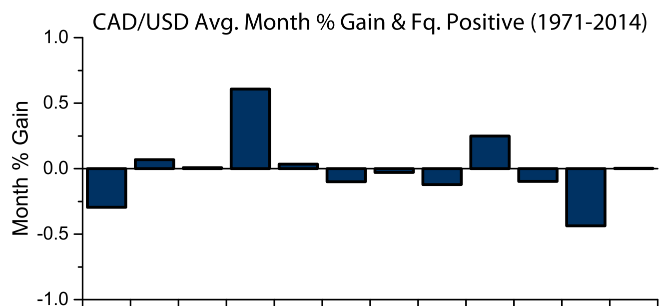
The seasonal trend of the Canadian dollar performing well in April has been persistent over time. In Exhibit 1, the graph illustrates a similar CAD/USD seasonal trend for the long-term period of 1971-2014 and the period over the last twenty-five years (1990-2014). In the last twenty-five years the seasonal trend has been more pronounced, with an average greater increase in April for CAD.

Exhibit 1: CAD yearly seasonal trend vs. USD



Source data: U.S.Federal Reserve Economic Data

Exhibit 2: April strongest month for CAD



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Avg. % Gain	-0.29	0.07	0.01	0.61	0.03	-0.10	-0.03	-0.12	0.25	-0.10	-0.44	0.00
Fq. % Pos	34	64	50	70	34	52	41	52	57	55	36	50

Source data: U.S.Federal Reserve Economic Data

April- the strongest month of the year

CAD compared to USD on a monthly basis, from 1971 to 2014 has produced a nominal average loss of 0.009%. In other words, over the last 44 years investing in the Canadian dollar on a monthly basis, in practical terms has been "flat." This allows for an ideal inter-month comparison of gains.

April is the strongest month for CAD, with an average gain of 0.6% (Exhibit 2). Relative to currency gains and losses for developed economies, April's average gain is large and stands out as an anomaly. It's average gain is more than double that of September's 0.25%, which is the next best month of the year.

April stands out not only with its strong average gain, but also with its 70% frequency of outperforming USD

CAD's performance in April stands out not only with its strong average gain, but also with its 70% frequency of outperforming USD. Given that CAD has outperformed USD 50% of the time from 1971 to 2014 on a monthly basis, April's 70% track record is substantial. The next best month for CAD outperforming USD on a frequency basis is February, which has a 64% rate of success. Although CAD's rate of success in February is not significantly different than April's, CAD has only managed an average gain of 0.07% in February.

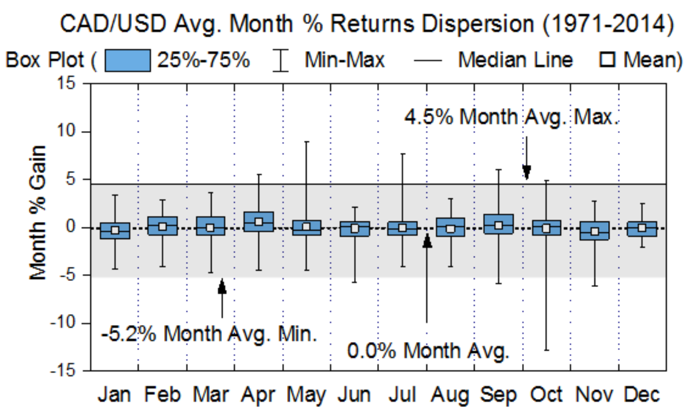
CAD/USD Monthly dispersion analysis shows April strength

CAD shows the strength of its seasonal trend in its dispersion of monthly returns from 1971 to 2014 (Exhibit 3). Overall, April is the best performing month with the:

- highest median
- highest average
- highest return above the average monthly high
- lowest loss compared to the average monthly low.
- highest percentage of positive returns

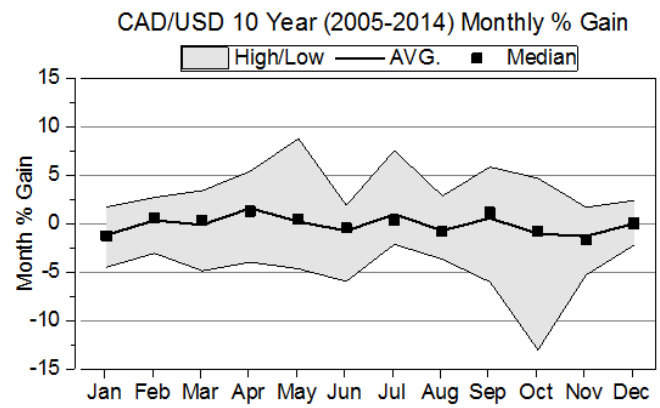
Exhibit 4 shows that the trend of a strong CAD in April has persisted over the last ten years, with both a higher average and a higher median than the other months of the year. In fact, visually, the success of April is understated in the diagram with the minimum band showing a loss of 3.8% which occurred in 2005. This was the only loss over the last ten years for CAD in April over the last ten years.

Exhibit 3: CAD/USD monthly returns dispersion



Source data: U.S.Federal Reserve Economic Data

Exhibit 4: CAD/USD Month Avgerage 10 yr. trend

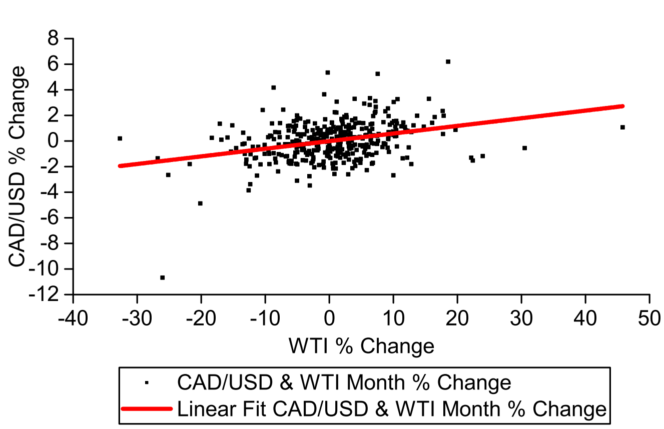


Source data: U.S.Federal Reserve Economic Data

Change in price of oil (West Texas Intermediate) affects the value of CAD/USD

There are many variables that affect the value of the Canadian dollar relative to the U.S. dollar, including: monetary and fiscal policy, governance, investment outlook and commodity prices. At different times, different variables will have different effects, but the change in the price of oil (West Texas Intermediate - WTI) has had a long-term influence in the change in value of the Canadian dollar. The scatter plot in Exhibit 5 illustrates the positive relationship between CAD/USD and WTI on a monthly percentage change basis. The Pearson's r coefficient is 0.33 which indicates a moderately positive relationship between the percentage change in the price of WTI and the percentage change in CAD/USD.

Exhibit 5: CAD/USD and WTI Relationship (1984-2014)

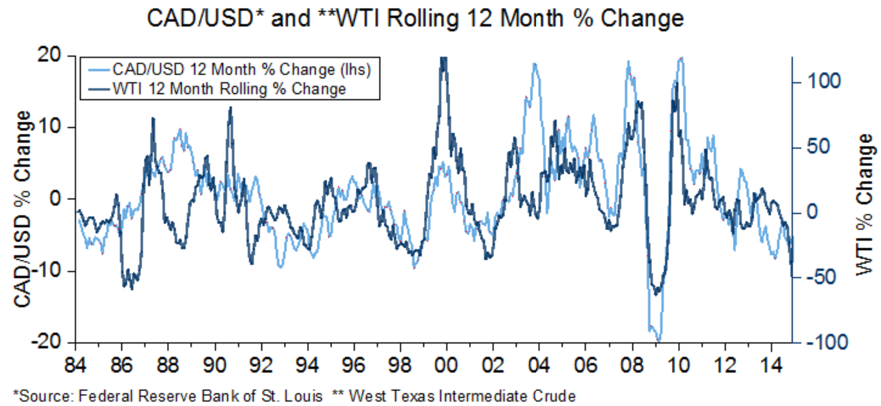


Equation	y = a + b*x		
Weight	No Weighting		
Residual Sum of Squares	0.07899		
Pearson's r	0.32447		
Adj. R-Square	0.10287		
		Value	Standard Error
CAD/USD % Change	Intercept	-9.22993E-5	7.56764E-4
	Slope	0.05958	0.00902

Source Data: CAD/USD U.S. Federal Reserve Economic Data, WTI Bloomberg

The graph in Exhibit 6 illustrates the rolling twelve month percentage change for WTI and CAD/USD. Although generally, WTI and CAD/USD move together, there are times when WTI increases and CAD/USD does not and vice versa. Overall there is a positive relationship between the change in the price of oil and the value of CAD/USD.

Exhibit 6: CAD/USD Price Change Relationship to WTI Price Change



Oil stocks strong seasonal period coincides with CAD/USD's strong seasonal period in April

Historically oil stocks have outperformed in the late winter into early spring

Historically oil stocks have outperformed in the late winter into early spring. From February 25th to May 9th, during the period from 1984 to 2014, NYSE ARCA OIL & GAS INDEX (XOI) has produced an average gain of 7.3% and has been positive 84% of the time. This seasonal period is mainly the result of supply/demand imbalances that occur in oil at this time of the year and investors pushing up oil's price ahead of the "driving season" that starts in May. For more information on the seasonality of oil stocks, see *Thackray's 2015 Investor's Guide*.

Is it necessary for the price of oil to increase in April for CAD positive performance?

A rising oil price increases the probability that the Canadian dollar will perform positively in April, but it is not a necessary condition

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Exhibit 7: April % Gain– West Texas Intermediate (WTI) & CAD/USD 1984-2014

WTI & CAD Negative   WTI Negative & CAD Positive

	CAD	WTI		CAD	WTI		CAD	WTI		CAD	WTI
			1990	0.4	-7.4	2000	-1.9	-4.3	2010	0.4	2.9
			1991	0.7	6.8	2001	2.8	8.2	2011	2.4	6.8
			1992	-0.5	7.3	2002	1.8	3.7	2012	1.1	1.8
			1993	-1.0	0.4	2003	2.5	-16.9	2013	1.0	-3.9
1984	-0.6	-1.8	1994	0.1	14.3	2004	-4.5	4.5	2014	0.9	-1.8
1985	0.0	-2.3	1995	2.9	6.3	2005	-3.8	-10.3			
1986	1.7	28.3	1996	0.2	-1.3	2006	4.2	7.9			
1987	-2.4	-0.4	1997	-1.0	-1.0	2007	4.2	-0.2			
1988	0.4	5.3	1998	-0.9	-1.4	2008	1.8	11.7			
1989	0.6	-4.5	1999	3.5	11.3	2009	5.6	2.9			

Source Data: Bloomberg

Exhibit 7 shows that most of the time, both WTI and CAD/USD has been positive in April and that most of the negative occurrences for CAD have occurred when WTI has been negative.

CAD/USD has been positive most of the time, regardless of whether WTI has risen in price, but has increased with a greater frequency when WTI has been positive

Exhibit 8 summarizes the relationship between WTI and CAD/USD for the month of April from 1984 to 2014. When WTI has been positive (17 times), CAD/USD has been positive 14 times or 82% of the time. When WTI has been negative (14 times), CAD/USD has been positive 8 times, or 57% of the time. In other words, historically CAD/USD has been positive most of the time, regardless of whether WTI has risen in price, but has increased with a greater frequency when WTI has been positive.

Exhibit 8: WTI & CAD April Performance (1984-2014)

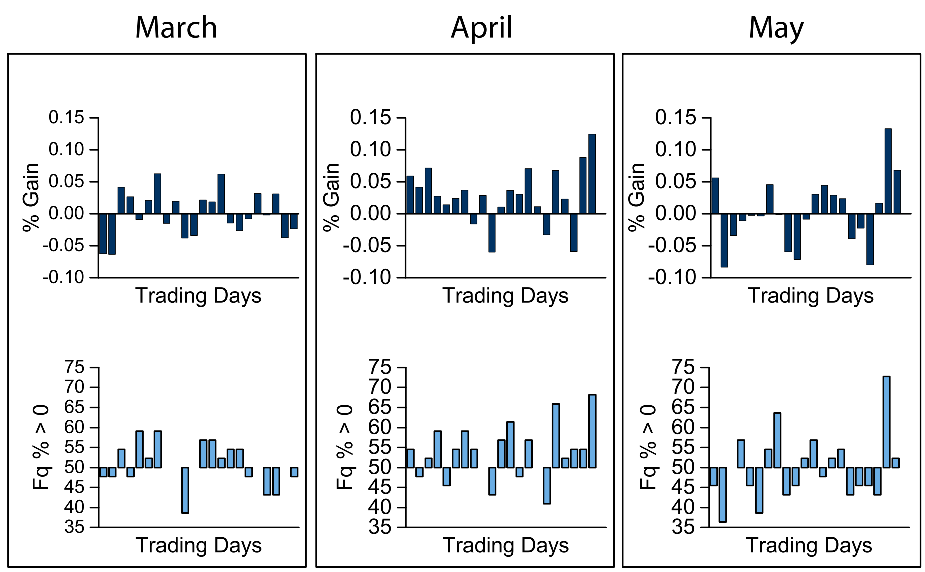
	CAD Positive	CAD Negative
WTI Positive	14	3
WTI Negative	8	6

Source Data: Bloomberg

CAD- Seasonal Entry and Exit Points

Although April is a strong month for the Canadian dollar, it is important to look at the time period before and after the month in determining the length of the seasonal trade. Not all seasonal trades conveniently start and end at the beginning or end of the month.

Exhibit 9: CAD/USD March-April-May Trading Day Performance (1971-2014)*



Source data: U.S.Federal Reserve Economic Data
*All of the graphs in Exhibit 7 use an alogrithm to convert the performance in any particular month to adjust gains and frequencies into the average number of trading days for the month over the long-term

The month before the April CAD trade, March, on average has been "flat" relative to USD with an average gain of 0.01% and a success outperformance rate of 50% (1971 to 2014, Exhibit 2). In other words, the seasonal trend for CAD is neutral for March. A closer look at the intra-month trend for CAD (Exhibit 9), shows that the last few days of March tend on average to produce a loss and underperform USD on a frequency basis. Given this trend, it is typically best to wait until the last day of March before taking on a long position in CAD.

The month after the April CAD trade, May, on average has been a weak month for CAD relative to USD, producing an average gain of 0.03% and a frequency of outperformance of 34% (Exhibit 2). Although CAD has produced a nominal average gain in May, it has only been successful one-third of the time. In this case, the average gain has been largely skewed by CAD's outlier relative performance of 9% in May 2009. The situation was anomalous as the Canadian dollar was rebounding with the stock markets after the financial crisis.

On average the first few days in May tend to be slightly negative for CAD. The exception to this is the first day of May which has an average gain, but given that it has a less than 50% success rate of outperforming USD, it is typically best to exit the CAD/USD trade on the last day of April.

It is important to note that technical analysis can be used to optimize the entry and exit dates for the long CAD April trade.

Overall the seasonal trend for CAD/USD is neutral for the two months following April.... investors should be looking more to economic factors and technical indicators

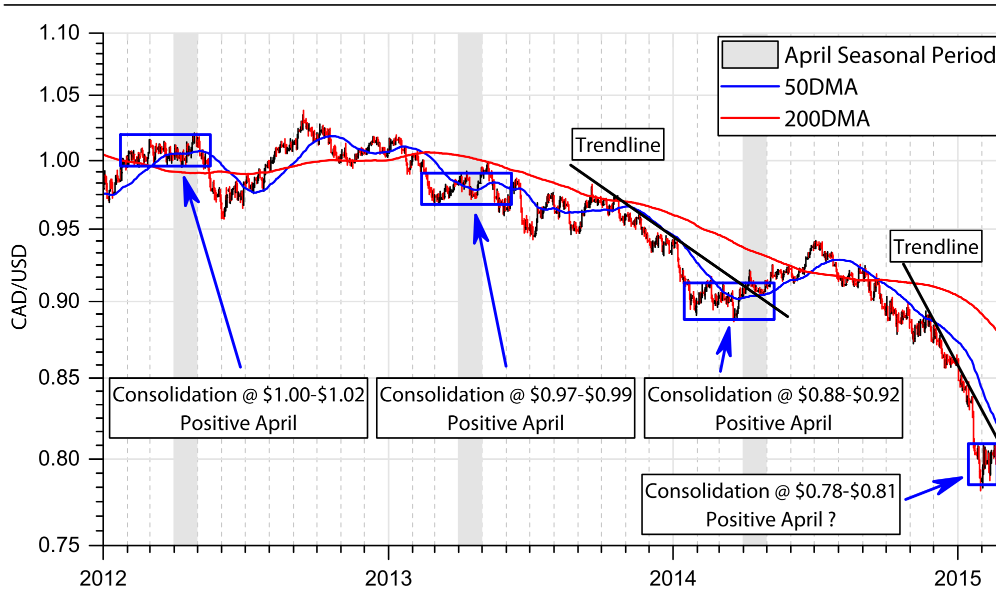
It should also be noted that on average, overall the seasonal trend for CAD is neutral for the two months following April. As a result, the end of the seasonal long trade does not mean that a short trade should be initiated against CAD. At this time, investors should be looking more to economic factors and technical indicators in making an allocation decision between CAD and USD.

Current technical assessment

After reaching a high of over $1.05 in July 2011, the Canadian dollar relative to the U.S. dollar has been on a downward slope. Even during this downturn, the Canadian dollar has produced positive performances in the month of April. In fact, CAD/USD has been positive in the last nine April's in a row (see Exhibit 7). Over the last two years we have seen CAD/USD decline in autumn, consolidate at the beginning of the next year and then perform positively in April.

After a correction at the tail-end of 2013, CAD/USD consolidated between $0.88-$0.92 at the beginning of 2014. It then started its upward trend in late March and

Exhibit 10: CAD/USD Technical Chart



Source data: Bloomberg

broke through its consolidation box and above its downward trendline. CAD/USD continued its run before starting to slide once again in July. Recently we have seen a similar pattern to last year with CAD/USD correcting sharply in autumn 2014 and consolidation at $0.78 to $0.81 starting in January.

A pattern does not repeat itself just because it is the same pattern. What is important is that the positive technical attributes that existed last year at this time, are forming this year. CAD is consolidating just before its period of seasonal strength, leading to a potential break above the consolidation box and a break through of its downward trendline.

Classic technical analysis would require a breakout before making an investment. In this case, that would require CAD/USD to break above $0.81 and preferably, also its downward trend line. Depending on the consolidation time period these two events could occur at the same time.

Overall, CAD/USD is setting up well for the start of its seasonal period in April. An early entry signal would be triggered If CAD/USD were to break above $0.81 within the four week period before the start of the April trade. If a technical breakout does not occur, it does not mean that the trade should be avoided. Very often large gains are missed on waiting for a technical breakout at the start of a seasonal period. Given that break outs are more likely to occur at this time, compared to non-seasonal periods, if the technicals are not substantially negative at the start of the CAD seasonal period, entering into the trade is still an acceptable strategy.

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