

Getting a handle on the impact of currency

Currency returns are an important factor impacting any investor purchasing a non-Canadian asset. Since the underlying investments of these assets are bought in a foreign currency, the appreciation or depreciation of the foreign currency against the Canadian dollar can either add or detract from the total return.



The objective of currency hedging is to remove the effects of foreign exchange movements, giving Canadian investors a return that approximates the return of the local market.

ETF providers offer both hedged and unhedged options giving Canadian investors more tools to efficiently execute their investment strategies. A common institutional approach is to use a blended application, typically 50% hedged, 50% unhedged. Portfolio managers may take an active approach to generate alpha from moves in currency, while others may choose to remain 100% hedged and eliminate currency risks.

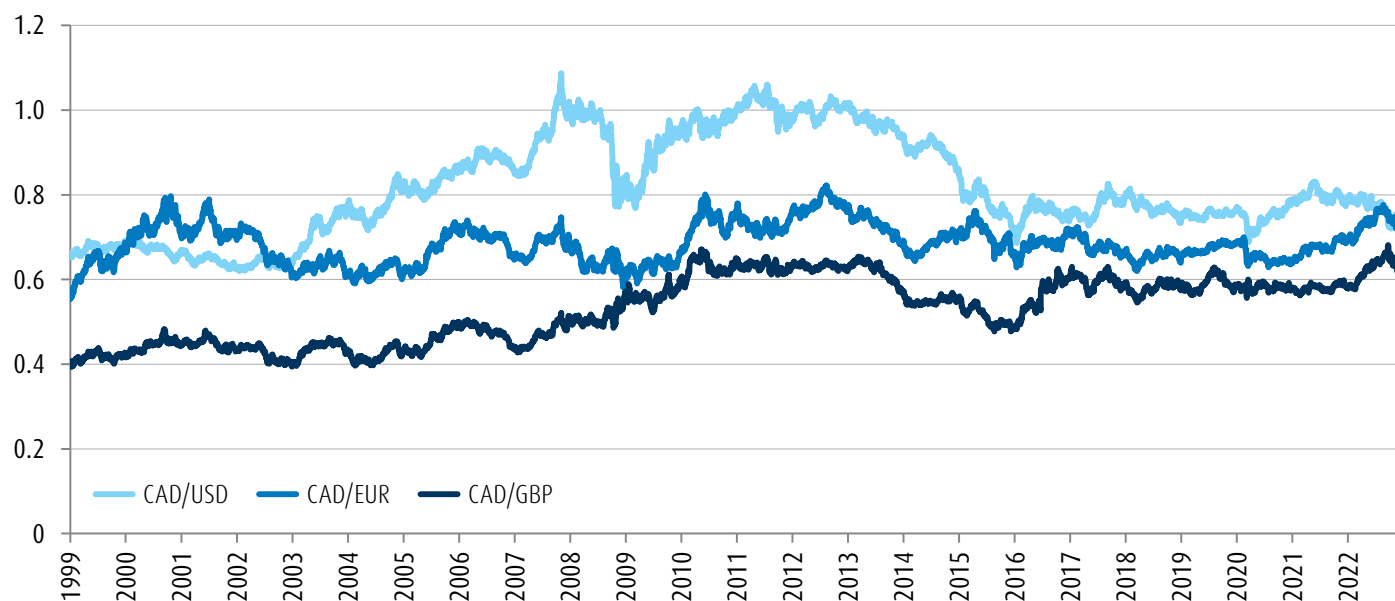
The impacts of currency should not be overlooked

In theory, there is purchasing power parity (PPP) between two currencies, to which they will revert to over time. In practice, however, currencies can trade beyond their PPP for extended periods of time, and not all investors are looking to hold an investment over the long-term. Over

Hedging is accomplished by taking a short position in the foreign currency to match the underlying portfolio. If the underlying currency of the foreign investment loses value relative to the Canadian dollar, these losses would be offset by the gain in the currency forward contract. Conversely, if the underlying foreign currency appreciates against the Canadian dollar, these gains would be offset by the losses in the currency forward.

the short-term, the impact of currency can actually be quite substantial and add volatility. The chart below shows a historical look at the Canadian Dollar versus other major currencies.

Currency volatility – a 20 year picture of CAD vs other major currencies



Source: Bloomberg. Monthly value of CAD vs USD, EUR, GBP. As of Mar 7, 2023.

The return of the Canadian dollar vs. other major currencies

| Year | U.S. Dollar | Euro | British Pound | Japanese Yen |
|-----------------------------------|--------------|--------------|---------------|---------------|
| 2009 | 15.90% | 13.00% | 4.54% | 18.76% |
| 2010 | 5.41% | 12.89% | 9.28% | -7.96% |
| 2011 | -2.31% | 0.85% | -1.89% | -7.35% |
| 2012 | 2.96% | 1.18% | -1.48% | 16.06% |
| 2013 | -6.60% | -10.35% | -8.37% | 13.39% |
| 2014 | -8.59% | 3.84% | -2.83% | 3.96% |
| 2015 | -16.01% | -6.43% | -11.22% | -15.71% |
| 2016 | 2.96% | 6.25% | 22.92% | 0.17% |
| 2017 | 6.91% | -6.28% | -2.34% | 3.04% |
| 2018 | -7.83% | -3.50% | -2.40% | -10.31% |
| 2019 | 4.99% | 7.37% | 1.06% | 4.00% |
| 2020 | 2.01% | -6.36% | -1.03% | -2.99% |
| 2021 | 0.75% | 8.17% | 1.71% | 12.26% |
| 2022 | -6.75% | -0.86% | 4.38% | 6.24% |
| 20 Year Average Return | 1.24% | 1.00% | 2.57% | 2.09% |
| 20 Year Standard Deviation | 9.11% | 8.50% | 8.59% | 12.15% |

Source: BMO Asset Management Inc., Bloomberg. As of February 28, 2023.

A closer look at the impact of currency on Canadian returns

| | S&P 500 Composite Total Return Index Hedged to the Canadian Dollar | S&P 500 Composite Total Return Index Unhedged to the U.S. Dollar |
|--------------------|--|--|
| 2008 | -39.02% | -21.20% |
| 2009 | 24.08% | 7.39% |
| 2010 | 13.55% | 9.06% |
| 2011 | 1.71% | 4.64% |
| 2012 | 16.26% | 13.43% |
| 2013 | 33.33% | 41.27% |
| 2014 | 14.32% | 23.93% |
| 2015 | 0.91% | 21.59% |
| 2016 | 11.40% | 8.09% |
| 2017 | 21.16% | 13.83% |
| 2018 | -5.70% | 4.23% |
| 2019 | 29.87% | 24.84% |
| 2020 | 15.79% | 16.32% |
| 2021 | 28.29% | 21.61% |
| 2022 | -19.10% | -12.16% |
| Average | 9.79% | 11.76% |
| Standard Deviation | 16.53%* | 12.53%* |

Source: BMO Asset Management Inc., Bloomberg.

Currency risk: to hedge or not hedge

The decision can be based on a number of different factors that are specific to the investor.

1. Investor outlook on the currency

As an example, an investor believes the U.S. dollar may appreciate against the Canadian dollar. If this individual is looking to invest in U.S. equities, an unhedged U.S. equity ETF may be more suitable. If the investor's assumption is correct, he will receive both the returns on the underlying securities and the gains on the currency. On the other hand, if an investor believes the foreign currency will depreciate against the Canadian dollar, a hedged U.S. equity ETF may be the better solution. Given his assumption is correct, the investor will get the returns from the underly-

ing securities, however, the loss of the U.S. dollar relative to the Canadian dollar will be mitigated.

2. Time horizon of the investor

Over shorter periods, it is more likely that currencies can deviate from their equilibrium values as measured by PPP. Given the higher unpredictability over shorter time horizons, hedging currency risk may be a consideration for these investors.

3. Correlation of investments and currency

An understanding of the correlation between investments and its currency may also impact the decision. Some currencies, such as the U.S. dollar, tend to be negatively correlated with equity markets. Consequently, the currency can provide an additional source of diversification for investors. An unhedged position can potentially reduce the volatility of the investors portfolio.

On the other hand, an investor may wish to currency hedge their Euro exposure given the currency has tended to move in the same direction as equity markets. For currencies that tend to be positively correlated to equities, the currency can add additional volatility to the portfolio.

Correlation of asset classes and currency

| Asset Class | U.S. Dollar | U.S. Equity | U.S. Fixed Income |
|-------------------|-------------|-------------|-------------------|
| U.S. Dollar | 1.000 | -0.550 | -0.156 |
| U.S. Equity | -0.550 | 1.000 | 0.295 |
| U.S. Fixed Income | -0.156 | 0.295 | 1.000 |

U.S. Equity proxy: S&P 500 Index

U.S. Fixed Income proxy: Bloomberg U.S. Aggregate Bond Index 10 year correlation, as of February 28, 2023.

Source: BMO Asset Management Inc., Bloomberg, February 28, 2023.

4. Cost of the underlying hedge

Currency forwards that are very liquid, such as the U.S. dollar, are less expensive to hedge. On the other hand, for underlying currencies that are less liquid, such as those for emerging markets, hedging foreign exchange exposure becomes more costly and less efficient.

In recent years, ETFs have made accessing U.S. and international markets easier for investors. However, the decision on whether to hedge currency risk tends to be

overlooked by many investors. As currency could significantly benefit or disadvantage the total performance of a foreign investment, it should not be taken lightly. The

number of hedged and unhedged ETFs allow investors more opportunities to meet their investment objectives.

BMO ETFs Currency Road Map

| Equity | | | | | | | | | | | |
|--|--|---|---|---|---|--|--|---|---|--|--|
| BMO S&P 500 ZUE hedged to CAD ZSP unhedged ZSP.U unhedged USD Traded | | | BMO S&P US Mid Cap Index ETF ZMID.F hedged to CAD ZMID unhedged ZMID.U USD units | | | BMO S&P Small Cap Index ETF ZSML.F hedged to CAD ZSML unhedged ZSML.U USD units | | | BMO NASDAQ 100 Equity ZQQ hedged to CAD ZNQ unhedged ZNQ.U USD units | | |
| BMO US Dividend ZUD hedged to CAD ZDY unhedged ZDY.U USD units | | BMO MSCI USA High Quality ZUQ.F hedged to CAD ZUQ unhedged ZUQ.U USD units | | BMO Low Volatility US Equity ZLH hedged to CAD ZLU unhedged ZLU.U USD units | | BMO Equal Weight US Banks ZUB hedged to CAD ZBK unhedged | | BMO Equal Weight U.S. Health Care ZUH hedged to CAD ZHU unhedged | | | |
| BMO MSCI USA ESG Leaders Index ETF ESGY unhedged ESGY.F hedged to CAD | | BMO MSCI EAFE ZDM hedged to CAD ZEA unhedged | | BMO Japan Index ETF ZJPN unhedged ZJPN.F hedged | | BMO International Dividend ZDH hedged to CAD ZDI unhedged | | BMO Low Volatility International Equity ZLD hedged to CAD ZLI unhedged | | | |
| Yield Focused | | | | | | | | | | | |
| BMO Covered Call Canadian Banks ZWB hedged to CAD ZWB.U USD Units | | BMO US High Dividend Covered Call ZWS hedged to CAD ZWH unhedged ZWH.U unhedged USD traded | | BMO US High Dividend Covered Call ZWE hedged to CAD ZWP unhedged | | BMO US Put Write ZPH hedged to CAD ZPW unhedged ZPW.U unhedged USD traded | | | | | |
| BMO Premium Yield ETF ZPAY.F hedged to CAD ZPAY unhedged ZPAY.U unhedged USD Traded | | BMO Monthly Income ETF ZMI unhedged ZMI.U USD Units | | BMO US Preferred Share ZHP hedged to CAD ZUP unhedged ZUP.U unhedged USD Traded | | BMO Laddered Preferred Share ETF ZPR unhedged ZPR.U USD Units | | | | | |
| Fixed Income | | | | | | | | | | | |
| BMO Short-Term US Treasury Bond ZTS unhedged ZTS.U USD units | | | BMO Mid-Term US Treasury Bond ZTM unhedged ZTM.U USD units | | | BMO Long-Term US Treasury Bond ZTL unhedged ZTL.F hedged units ZTL.U USD units | | | | | |
| BMO Short-Term US Bond ZUS.U USD units ZUS.V USD accumulating units | | BMO High Yield US Corporate Bond ZHY hedged to CAD ZJK unhedged ZJK.U unhedged USD traded | | BMO Mid-Term US IG Corporate Bond ZMU hedged to CAD ZIC unhedged ZIC.U USD units | | BMO Short-Term US TIPS Index ETF ZTIP.F hedged to CAD ZTIP unhedged ZTIP.U USD Unit | | | | | |
| BMO ESG US Corporate Bond Hedged to CAD Index ESGF hedged to CAD | | BMO ESG High Yield US Corporate Bond Index ESGH unhedged ESGH.F hedged to CAD | | New | BMO US TIPS Index TIPS hedged to CAD TIPS.F Hedged to CAD TIPS.U USD units | | BMO US Aggregate Bond Index ZUAG Hedged to CAD ZUAG.F Hedged to CAD ZUAG.U USD Unit | | | | |



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