

INSTITUTIONAL

CANADIAN DOLLAR: STORM FRONT COMING. OUTLOOK AND PORTFOLIO IMPLICATIONS

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1. Summary

Understanding the equilibrium valuation of an asset, and the magnitude and persistence of fluctuations around this equilibrium, are key insights utilized by skilled investors.

In this paper, we consider the equilibrium, or Fair, value of the Canadian dollar (CAD), in terms of the U.S. dollar (USD). Market consensus suggests CAD is trading cheap to equilibrium; our quantitative estimates of Fair Value currently lie around USD1/CAD1.24. This implies a strengthening of CAD back to Fair Value, from the current spot rate of approximately CAD1.32.

We discount this result. Our forward-looking fundamental analysis suggests a low probability of sustained CAD strength; we see an increasing risk of further trend CAD weakening.² Our conviction reflects three main themes: continued high Canadian private non-financial sector debt; energy sector trends; and weak Canadian productivity. Related, we also discuss evidence and implications of a weakening correlation of CAD to the global economy and equity cycle.

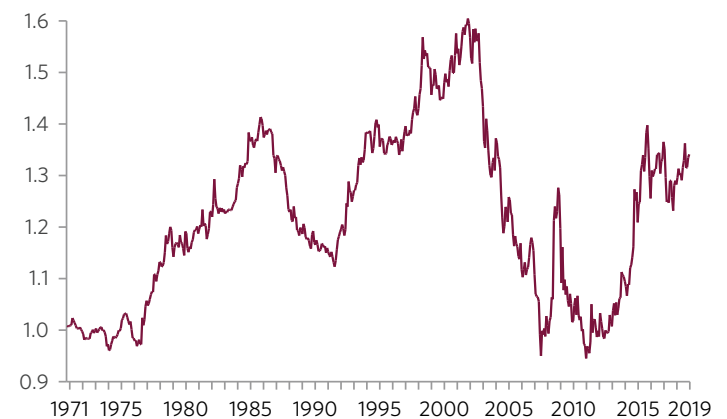
Our insights are relevant to global investors seeking to determine the optimal strategic hedge ratio for inherited currency exposure. They are also relevant to investors who have embraced Active Currency as a liquid alternative asset class; Active Currency mandates will typically include positioning in CAD as one driver of expected returns. We discuss the portfolio implications of our analysis below.

2. CAD Fair Value

Over the last 50 years, CAD has traded in a range of 0.96 to 1.60 versus USD (Figure 1). It is currently trading close to the mid-point of this range, and below our quantitative estimate of Fair Value. This estimate is calculated as a function of three variables, all relative to USD:

- Domestic consumer price levels, or Purchasing Power Parity (PPP)
- The Terms of Trade, defined as the ratio of export to import prices
- Productivity

Figure 1 – USD/CAD exchange rate



Source: The information was prepared by CIBC Asset Management Inc. using the following third party service providers' data: Thomson Reuters Datastream. As at April 2019.

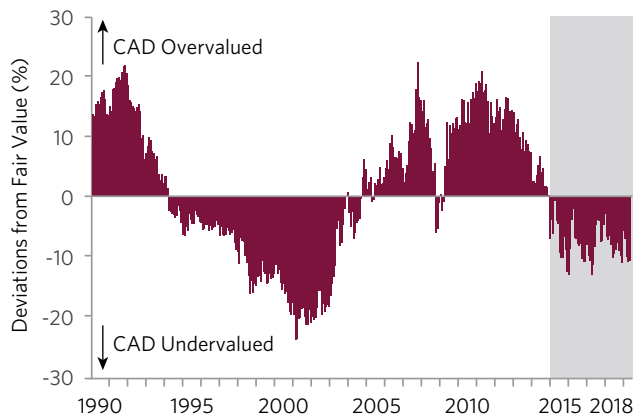
PPP is a long-term measure of a currency's Fair Value. We include relative Terms of Trade and productivity differentials to make our value estimates more responsive to economic cycles, and more consistent with typical investor horizons.

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²We frame our discussion in terms of directional risks and probabilities, rather than point forecasts of future exchange rate levels. The ability to generate accurate level forecasts for individual exchange rates is notoriously low.

Quantitative estimates suggest CAD has been undervalued versus USD since 2015 (Figure 2). The persistence and magnitude of the current misalignment is not remarkable in the context of the past five decades. CAD has partially recovered from its cheapest level in 2016, but has subsequently struggled to make additional progress back towards quantitative estimates of Fair Value.

Figure 2 – USD/CAD misalignment



Source: The information was prepared by CIBC Asset Management Inc. using the following third party service providers' data: Thomson Reuters Datastream. As at April 2019.

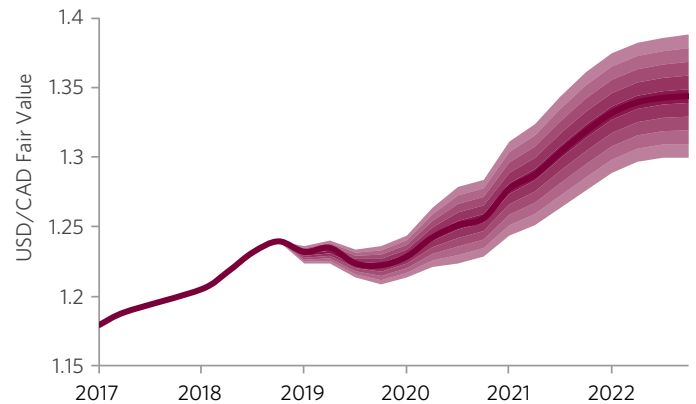
As with all asset classes, estimating currency valuation is an imprecise exercise. Quantitative estimates of exchange rate equilibria are typically backward-looking, and implicitly assume historical relationships will persist in the future. When a country experiences significant changes in the fundamental drivers of Fair Value, the validity of this assumption is weakened.

Complementing quantitative estimates with informed, forward-looking fundamental economic analysis provides a more complete perspective. This is particularly true for CAD, given the confluence of fundamental trends we discuss below. Based on our analysis of these trends, longer-term risks are skewed towards further CAD weakness against USD (Figure 3). This skew encompasses two themes:

- The risk of a further cyclical weakening of CAD relative to its Fair Value;
- The risk that CAD Fair Value will also weaken.

This risk assessment does not preclude episodes of CAD strength versus USD in the next several years. But these periods are unlikely to be sufficiently substantial to see CAD trade persistently back into the low \$1.20s.

Figure 3 – Fan chart of USD/CAD forward-looking equilibrium



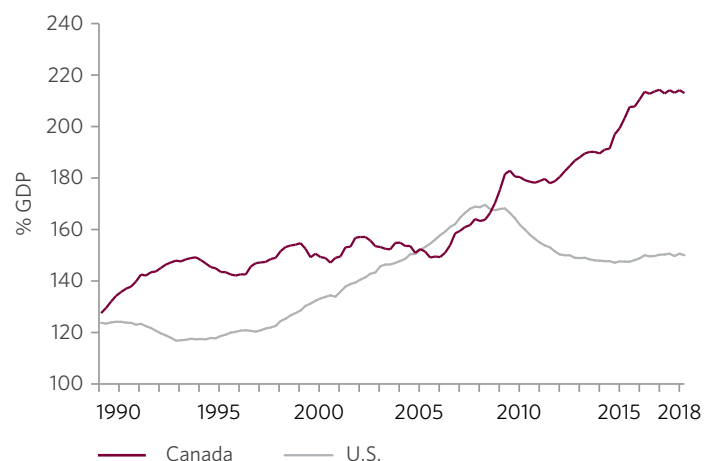
Source: The information was prepared by CIBC Asset Management Inc. using the following third party service providers' data: Thomson Reuters Datastream. Illustrative only. The red line reports the central projection for USD/CAD Fair Value. The width of the fan chart indicates the degree of uncertainty associated with forward-looking projections. Asymmetry indicates the balance of risks around the illustrative central projection.

3. Forward-looking fundamental CAD outlook

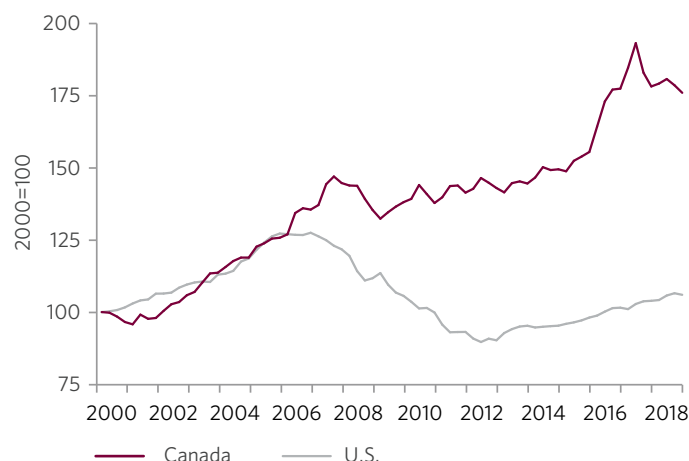
3.1. Monetary policy

The relative monetary policy stance expected between two countries is typically a key driver of exchange rate oscillations around Fair Value. At present, the outlook for monetary policy across the major developed markets (DM) appears broadly similar; the Bank of Canada (BoC) is unlikely to offer meaningful support to CAD, or be a source of significant weakness, in the next 12 months. But relatively high Canadian Non-Financial Private Sector debt (Figure 4) and non-negligible downside housing markets risks (Figure 5) suggest the longer-term scope for additional BoC policy tightening is limited compared to the U.S. Federal Reserve. This policy constraint could become a source of future CAD weakness.

Figure 4 – Non-financial private sector debt



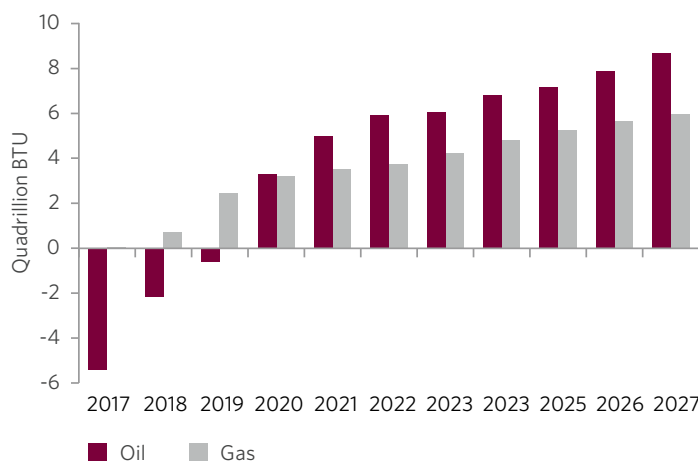
Source: The information was prepared by CIBC Asset Management Inc. using the following third party service providers' data: Bloomberg. As at April 2019.

Figure 5 – House prices / income ratio

Source: The information was prepared by CIBC Asset Management Inc. using the following third party service providers' data: Federal Reserve Bank of Dallas. As at April 2019.

3.2. Energy sector trends

Technological and efficiency advances, as well as previous changes in U.S. energy policy, have resulted in substantial growth in U.S. production of crude oil and natural gas. By contrast, Canadian production has plateaued. Proven reserves of U.S. crude oil and natural gas have doubled from a decade ago (U.S. Energy Information Administration, 2018). The International Energy Agency (I.E.A.) expects the U.S. to become a net exporter of crude oil by 2020; it has already become a net exporter of refined products (Financial Times, 2018), as well as natural gas (Figure 6).³

Figure 6 – U.S. energy sector outlook

Source: The information was prepared by CIBC Asset Management Inc. using the following third party service providers' data: Thomson Reuters Datastream, IEA.

Canada is one of the losers from this evolving U.S. energy outlook. In 2018, Canada exported approximately one half of its natural gas production, and three quarters of crude oil production, to the U.S. (Natural Resources Canada, 2018). The negative volume impact of rising U.S. production has so far been mitigated by a persistent, and often substantial, discount in Canadian crude oil and natural gas prices versus U.S. comparators. But the net result has been a significant weakening in CAD's forward-looking Fair Value. By our estimates, the 11% deterioration in Canada's Terms of Trade during the past several years has translated to a 5% depreciation in CAD's Fair Value; from a starting point of CAD1.18, we now estimate Fair Value at CAD1.24.

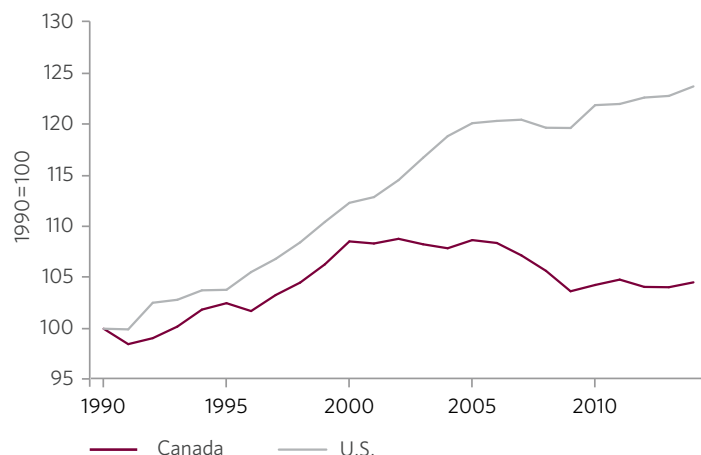
IEA projections indicate an additional 30% decline in U.S. energy imports over the next four years. In the near term, the main impact will be felt outside of North America; Canadian oil remains an integral part of the North American energy market. But in the longer term it could also be negative for Canada—a combination of lower Canadian oil exports and a larger Canadian oil price discount would further weaken CAD Fair Value.

3.3. Productivity

Total Factor Productivity (TFP) data measure how efficiently economies combine available workforces and investment capital. They are an indicator of structural competitiveness. TFP estimates are typically imprecise, impacted by cyclical factors, and subject to significant publication lags; the latest Canadian TFP data relate to 2014 (Figure 7). These data suggest Canadian productivity has weakened in recent years, including relative to the U.S..

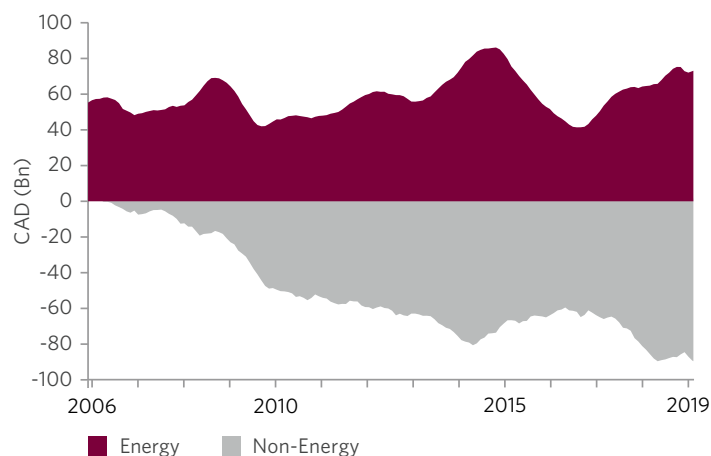
Economists often rely on blunt proxy estimates for more timely productivity data, such as GDP per Capita or per Employee. Alternatively, one can infer underlying productivity trends from the confluence of a country's Non-Energy trade balance and the behaviour of its currency relative to estimated Fair Value.

³The U.S. shift from net energy importer to net exporter is happening much quicker than expected. In 2017, the IEA forecast this event would occur in 2026. For instance, See <https://www.businessinsider.com/united-states-energy-exporter-2026-iea-2017-1>

Figure 7 – Total factor productivity

Source: The information was prepared by CIBC Asset Management Inc. using the following third party service providers' data: Federal Reserve Bank of St Louis. As at April 2019.

The Canadian Non-Energy trade balance has experienced a multi-year deterioration (Figure 8). The deficit is likely to reach a new record in 2019, close to 4% of GDP. A priori, four years of CAD undervaluation, with relative outperformance of the US economy during the latter half of this period, would normally be expected to improve Canada's external imbalances; all else equal, the Non-Energy trade deficit should have narrowed, not widened. By implication, Canadian productivity is continuing to deteriorate.

Figure 8 – Canada trade balances

Source: The information was prepared by CIBC Asset Management Inc. using the following third party service providers' data: Thomson Reuters Datastream. As at April 2019.

Canadian exporters have lost U.S. market share in recent years, primarily to China and Mexico, and across most market sectors. In the context of weak Canadian investment in the last decade, and high relative costs, the trade deficit is likely to widen further. Absent a comprehensive package of supply-side economic reforms, increased investment or

compensating technological advances, a decline in CAD's Fair Value is required to boost competitiveness.⁴ We estimate the deterioration in Canadian productivity justifies an equilibrium value closer to CAD1.30.

3.4. Trade negotiations

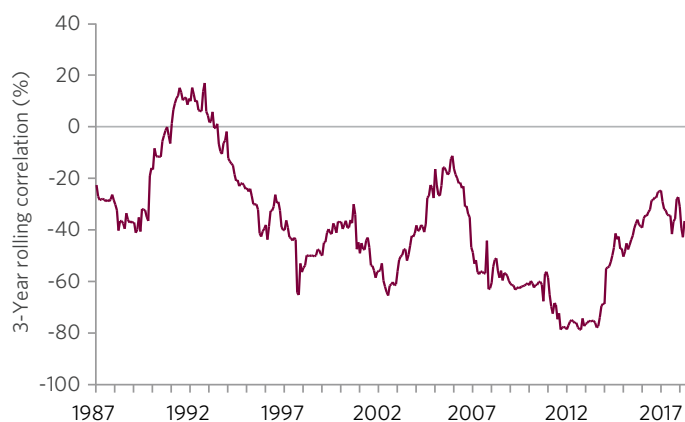
After more than a year of negotiations, Canada and the United States agreed in 2018 to replace the 24-year old NAFTA with a USMCA treaty. Differences in the two treaties imply little economic impact on either the Canadian economy, or CAD's Fair Value, assuming the treaty is approved by the U.S. Congress.

If Congress fails to approve the revised treaty, we expect a one-off, small negative impact on CAD Fair Value—CAD would weaken.

4. Portfolio implications

4.1. Correlations and portfolio risk

CAD is a pro-cyclical currency. It tends to strengthen when global cyclical economic growth is relatively strong and equity markets are rising.⁵ This means that the correlation between currency and local asset returns has traditionally been negative for investors with a CAD base currency perspective (Figure 9). A strategic decision to leave currency exposure inherited from global investments unhedged has historically produced lower portfolio volatility than the alternative of at least some passive currency hedging. Foreign currency exposure has been a source of diversification.⁶

Figure 9 – Correlation between local asset returns and USD/CAD returns for a CAD-base investor

Source: The information was prepared by CIBC Asset Management Inc. using the following third party service providers' data: Thomson Reuters Datastream. As at April 2019.

⁴Or, more accurately, a re-appraisal of the actual level of CAD Fair Value is required.

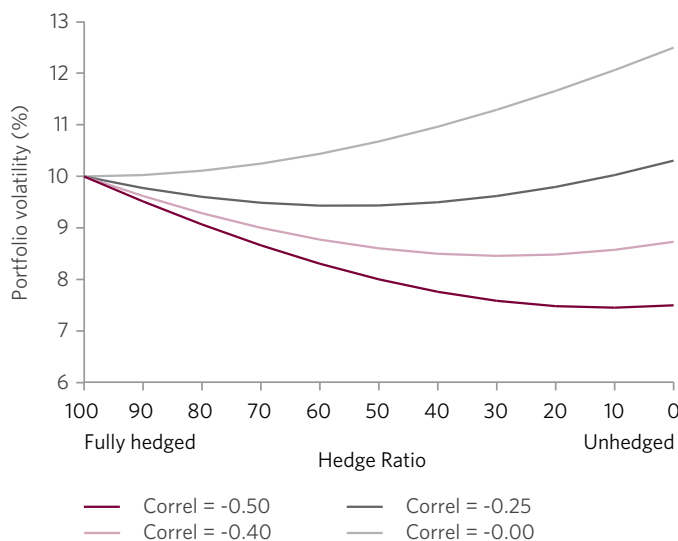
⁵This is not the case when global cyclical strength is driven by the U.S. economy.

⁶Minimizing portfolio volatility is not always the primary criterion driving strategic currency hedging decisions. Other relevant criteria include cost, sensitivity to cash flow volatility, and investment horizon.

Consistent with the economic narrative above, the magnitude of the negative correlation between CAD and local asset returns has declined in recent years. Energy will contribute less to the Canadian economy for the foreseeable future than during the past few decades; it will also contribute relatively more to US growth. CAD will remain a 'Commodity Currency', albeit diminished; its pro-cyclicality will wane.

Mapping the implications of evolving economic trends to the optimal strategic currency hedge is an imprecise science. Assuming the recent correlation of -40% persists, total portfolio risk will likely be similar for all choices of passive hedge ratio in the range 0%-50% (light red line in Figure 10). In this case, an unhedged strategic benchmark will remain valid, again assuming portfolio risk minimization is the principal objective. If the correlation moves closer to -25%, the validity of an unhedged benchmark will diminish (dark grey line in Figure 10). Above all else, this analysis emphasizes the importance of utilizing forward-looking, and not just historical, correlation assumptions when determining strategic currency hedge ratios.

Figure 10 – Illustrative portfolio volatility assuming different passive currency hedge ratios and correlations between local asset and spot currency returns



Source: The information was prepared by CIBC Asset Management Inc. using the following third party service providers' data: Bloomberg.

4.2. Active currency investing

The best way to exploit the tactical investment implications of our analysis is within an unconstrained active currency mandate.

Active Currency is a liquid alternative absolute return investment strategy. It offers diversifying standalone expected returns, and can be implemented as an unfunded overlay that does not disturb existing portfolio allocations.

Unconstrained active currency mandates implement investment decisions driven by a broad set of diversifying investment strategies, styles, and horizons. These styles include, but should not be limited to, time-varying Fair valuations. The resulting portfolio maintains long positions in undervalued currencies against shorts in relatively expensive currencies, to profit from expected convergence in relative value.

The insights discussed in this paper represent an opportunity to add value. In isolation, they suggest a short CAD position against a range of cheaper DM and emerging market (EM) currencies that also offer relatively more attractive expected returns from interest rate carry. Further details on CIBC Asset Management's approach to active currency investing are available on request.

5. Conclusion

The Canadian dollar is a fundamentally challenged currency. Quantitative Fair Value models suggest CAD is cheap and likely to strengthen. We disagree. Intermittent periods of outperformance are certainly likely. But there is a significant risk that the Fair Value of CAD will continue along its recent weakening trend. In our opinion, this limits upside for the currency.

Concurrent to the decline in CAD Fair Value in recent years, the correlation of currency and local asset returns has increased from the perspective of an investor with a CAD base currency. This has reflected a lessening of the pro-cycle behaviour of CAD, and a concurrent, modest increase in the pro-cyclicality of USD.

These trends are important for investors' strategic currency hedging decisions. They also present a significant opportunity to add value to portfolios through skilled active currency investing.

6. References

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<https://www.eia.gov/naturalgas/crudeoilreserves/>

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