

BRINGING FINANCE TO YOUR CLASSROOM

A FinStart Newsletter for Teachers

Currency Exchange Rates Case Study, September 6, 2020

What's new?

Much has been written recently about continued weakness of the US dollar against other currencies, like the Canadian dollar, the Euro and the Japanese Yen.

For example, Financial Times <https://www.ft.com/content/1d7b267a-6d1e-4012-b4f5-095a63eac626> (subscription may be required).

In March, USD/CAD was almost 1.45. You had to spend 1.45 Canadian dollars to buy 1 US dollar. Today, you need to spend around 1.30.

Why is this happening?

The article highlighted 3 reasons of the USD weakness against major currencies:

- i) The US keeps turning away from global affairs. As a result, currency markets expect less demand for USD in global trade (lower USD demand means lower price).
- ii) The US central bank (the Federal Reserve, or “the Fed”) plans to keep interest rates low for a foreseeable future. This means less demand for US interest-paying investments and for USD - because to buy such investment one needs USD (lower USD demand means lower price).
- iii) The Fed and the US government have provided lots of COVID-19 support to individuals and companies by creating new money (higher USD supply means lower price).

In addition, the CAD has benefitted from increasing crude oil prices (from April lows), driven by hopes of a global economic recovery from COVID-19. The price of crude oil is an important driver of our currency.

So what?

Good news for:

- Shoppers who buy goods & services in USD and future travellers who book trips priced in USD.
- Importers who buy for products in USD.
- Investors who want to buy investments denominated in USD and need to buy USD.

Bad news for:

- Exporters - goods we make in Canada for export become more expensive.
- Investors who have bought funds denominated in US-dollars and would want to sell them and exchange back to CAD.

Teaching with FinStart

Currency topics are part of the Chequing Accounts module. Look for an FX button on <https://www.finstart.ca/chequing-accounts.html>.

In it, we focus on 3 things:

1. Understanding how banks and exchange bureaus quote currencies.
2. Knowing how to use currency quotes.
3. Learning how to keep transaction costs low.

Try our real-life currency case study - on the next page. The case study is presented such that the page can be shared with students. Solution follows on a separate page.



CURRENCY EXCHANGE RATES

Case Study

Part 1

Maria needs to exchange Canadian dollars to US dollars. She'll need 100 US dollars (\$100 USD). From Yahoo Finance she gets this quote: CAD/USD 0.7656.

- i) Does this quote represent how many US dollars she can get for 1 Canadian dollar or how many Canadian dollars for 1 US dollar?
- ii) How many Canadian dollars does Maria need to exchange to receive \$100 USD? Which quote is easier to use to calculate that: USD/CAD or CAD/USD?
- iii) Do you think Maria will pay more or less than the Yahoo Finance quote when she transacts? Estimate how much more/less?

Part 2

Maria checked online with her own bank and another bank. She identified the row in the currency exchange rate tables that says "USD" and obtained four quotes (to the right).

Maria's bank

Client buys	Client sells
1.3403	1.2703

Another bank

Buy	Sell
1.2854	1.3366

- iv) Explain to Maria why these quotes are quite bigger numbers than what she found on Yahoo Finance.
- v) When Maria transacts, which of the quotes will be used: a) at her bank ('client buys' or 'client sells'), b) at the other bank?
- vi) Which bank should Maria choose? How much Canadian dollars will she pay to get \$100 USD, assuming each bank charges the same \$3.50 CAD per transaction?
- vii) How does the amount you calculated in vi) compare with the amount you calculated in ii)? Recap why the difference.

Bonus points

On September 6 2020, Maria created a 5-year historical chart for USD/CAD on Yahoo Finance. Generate an update of this chart and extend it to the last 10 years. Comment on what happened to CAD/USD over the last 10 years. What happened to the exchange rate since Maria created her chart?



Source: <https://ca.finance.yahoo.com/quote/CADUSD=X?p=CADUSD=X&.tsrc=fin-srch>
 Accessed Sep 6, 2020

CURRENCY EXCHANGE RATES

Solution and some talking points

- i) The quote CAD/USD 0.7656 says that to buy 1 Canadian dollar one needs to pay \$0.7656 USD.
 - On Yahoo Finance Maria can specify whether she wants to see CAD/USD or USD/CAD. These are two alternative ways of quoting currencies (more on that in point iv) below).
 - Remember that the first currency in the quote is the one you're buying (and paying for it with the second currency).
- ii) Maria got the quote for CAD/USD 0.7656. Because she's buying USD, she needs the quote specified as USD/CAD. She can either get this quote directly from Yahoo Finance or convert the CAD/USD quote as follows: 1 divided by 0.7656, which equals 1.3062. Using quote USD/CAD she needs approximately \$130.62 CAD to buy \$100 USD (100×1.3062).
- iii) She'll pay more assuming no major market movement takes place. Yahoo quote is for the wholesale market and it's a mid-market quote.
 - 'Wholesale' means for large transaction size that typically institutions and companies make. Individuals make smaller transactions and have to transact at retail rates, which are less favourable.
 - Maria will not transact at the mid-market quote. Banks quote two different rates, a lower one when they buy a currency (bid price) and a higher one when they sell it (ask price). The difference is called 'spread', and the mid-market rate is in-between the buy and sell quotes.
 - Maria will pay the ask price. She needs to prepare more money than the Yahoo Finance mid-market quote suggests (assuming currency markets do not move in the meantime).
 - We don't know the exact level at which Maria will transact. Currencies are traded all the time and exchange rates change. By the time she goes to the bank or exchange bureau, rates could be lower or higher.
- iv) Both banks quote USD/CAD, i.e. the reverse of the CAD/USD quote Maria initially got off Yahoo Finance. Per Yahoo Finance, USD/CAD is 1.3062. Remember that Yahoo Finance is the mid-market wholesale rate, and the bank spread could be up to 7 cents. If so, Maria should subtract / add half of that, say 3.5 cents, on each side of the mid-market quote. That would be 1.2712 ($1.3062 - 0.035$) and 1.3412 ($1.3062 + 0.035$), closer to the quotes the banks showed her.
- v) At her bank 1.3403 ("Client buys" - she will be buying USD), at the other bank 1.3366 ("Sell"). This is because Maria's bank quotes from the client's perspective, and the other bank uses the general convention and quotes from its perspective. Remember that you buy currencies at the higher quote and sell at the lower.
- vi) She should choose the other bank because it has a slightly better rate. She will pay \$137.16 CAD ($100 \times 1.3366 + 3.50$).
- vii) She would pay around seven dollars more than estimated based on Yahoo Finance (\$137.16 CAD calculated in vi) vs. \$130.62 CAD calculated in ii)). That was a wholesale mid-market quote without any transaction costs; the bank added a spread and a fee. This assumes no significant market movement between when she checked the Yahoo Finance quote and transacted.

Bonus points: Currencies normally trade in ranges. CAD/USD range over the last 5 years was from 69 cents (early 2016) to 82.5 cents (fall 2018). When Maria generated the chart, the CAD was trading roughly in the middle of that range and going up (strengthening). If you take a longer perspective (max on Yahoo Finance is 20 years), you'll see a wider range - the same low in early 2016 but a much higher high - above one dollar in 2007/08 and again for all of 2012-13.

Source: Maria's bank is inspired by <https://www.scotiabank.com/ca/en/personal/rates-prices/foreign-exchange-rates.html>, and 'another bank' by <https://www.hsbc.ca/international-services/foreign-exchange-rates/>.



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