

Future Monetary Policies in Respond to the Inflation Risks

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Executive Summary:

1. Risk of the zero-lower-bound problem.
2. Risk of deflation due to the low inflation rate.
3. Risk of hyperinflation arise from quantitative easing.
4. Risk of higher unemployment rate and delayed economy recovery from hyperinflation.
5. Risk of Asset-Bubble problem from the increasing commodity and real estate prices.

Risk of the zero-lower-bound problem:

Due to the pandemic of Covid-19 that occurred in the year 2020, inflation experienced a rapid drop, at one point it fell to near the negative 0.5 percent change, which is far lower than the target rate of 2 percent. After the lowest point, it has recovered to 1 percent as of January 1st of 2021, but this is still below the target rate. (Figure 1) A low inflation rate will affect the public's expectation of the inflation rate, which will be a lower expectation. By the Fisher Effect, when the expectation of inflation decreases, the nominal interest rate will also decrease. In this report, I will explore some possible circumstances and risks that Canada may face in the future, and suggesting the corresponding strategies for the risks.

As shown in figure 2, it shows that the treasury bill yield in Canada has dropped from 1.6% to below 0.2%, as of March 2021. This will lead to the zero-lower-bound problem which means the central bank can no longer lower the interest rate to implement policies. Open market operations are an important instrument for the central bank to implement conventional policies, which include open market purchases to lower the interest rate. But the zero-lower-bound problem will make this instrument no

longer effective since the interest rate drops to zero, which can be no longer lowered. During the current low interest and inflation rate situation, the risk of zero interest rate restricts the central bank from the conventional policies, which means they will seek nonconventional policies to avoid this problem.

A classic nonconventional policy is quantitative easing which involves purchasing long-term bonds by the central bank. This policy will supply the monetary base, encouraging borrowing and lending. It will increase the money velocity and money supply if there are no excess reserves, which will lead the inflation and real GDP increase according to the quantity theory of money. If the inflation rate increases, it will also increase the interest rate, which could resolve the zero-lower-bound problem. The goal of quantitative easing is to stimulate the recovery of the economy, encouraging spending and increasing aggregate demand. Also, it will provide liquidity into the financial system. Since the aggregate demand is enlarged, the price level will also be higher, as well as the inflation rate. Right now, the government of Canada is sending stimulus in the meantime, which could also increase the money supply. But this policy will also give downward pressure on the interest rate. Since the interest rate is near zero currently, this pressure would not have many influences. A report by Reuters indicates that the Bank of Canada is purchasing too many debts, providing too much money into the financial system. The Bank of Canada will publish another report on reducing the quantity of purchase in the quantitative easing action in the future. (Fergal Smith, 2021).

Not only the quantitative easing but also other actions the central bank will take. When the inflation rate falls below the target inflation range, the central bank will decrease the target for the overnight interest rate. This action is similar to quantitative easing, leading to the dollar depreciation and the interest rate decrease. Since the interest rate decreases, it will encourage people to spend, enlarging the money velocity.

From the dollar depreciation, people now will need to spend more on their purchases. These two effects will increase the aggregate demand eventually, which could increase the price level, as well as the inflation rate. From figure 3, in the year 2020, the bank of Canada decreased the target for the overnight interest rate from 1.75% in January 2020, to 0.25% in March 2020, and kept 0.25% even until March 2021.

Risk of deflation due to the low inflation rate:

Another risk that arose from the low inflation rate is that it will lead the economy into deflation. A deflation will cause severe damage to the economy, and it is hard to get out of the situation. During the pandemic, most people's wage is influenced by this situation, making people have less income or none. Since most debts are based on nominal value, deflation will make the debts more difficult to be repaid. Because lots of people are relying on the stimulus, this will make their life harder, and decrease the aggregate demand. On the other side, deflation will lower the price level. People could have expectations of a lower future price, which could make them delay their purchasing plans. Especially under the pandemic, the lockdown will affect the aggregate demand and output, and producing a negative shock onto the economy. This will put another negative shock on the recovery of the economy since the central bank's goal is to pull the GDP and inflation back to normal, which could also delay the recovery. Currently, the unemployment rate is high, the problem of deflation will push the unemployment rate higher.

Risk of hyperinflation arise from quantitative easing:

Quantitative easing is not a safe house. Too many purchases for long-term bonds will also bring the risk of hyperinflation. As mentioned earlier, the Bank of Canada is purchasing too many debts and plans to reduce the quantity of purchases in the future.

An over-purchase will make people believe the price level will increase sharply, leading them to lose confidence in the value of money. Since a basic function of money is to store the value, this will make the currency break the rule. In this case, people will be eager to purchase commodities, instead of holding money. This would lead to the commodity prices higher. An increasing housing price index in Canada is evidence of people's panic, and we might also expect the commodity prices to be higher. If the money loses its function for exchanging values, it is severe damage to the whole economy. So, it is reasonable the Bank of Canada is reducing the quantity of purchases for the debts, and we could expect this reduction to be further.

Risk of higher unemployment rate and delayed economy recovery from hyperinflation:

Another aspect of the risk for hyperinflation is that it will increase the cost of the employer to hire employees. Since the money depreciates, the cost of paying wage will be higher, and the buying power of the wage is lower. Thus, more people will be unable to afford their living expenses, and employers will be more unlikely to hire people. This will increase the unemployment rate in the future. As shown in figure 4, the unemployment rate hit 10 percent as of January 2021. The increased expectation for future inflation will make employers be panic about the economic situation. Lots of companies will perform a job cut in advance, which has a negative impact on the economic recovery. Since the Bank of Canada overused quantitative easing, we would expect a period of increasing unemployment rate in the future, until the reduction on purchases of debts is implemented. The major task for the Bank of Canada should be to entrust people with its reduction on further quantitative easing, increasing its credibility and lowering the unemployment rate. For the unemployment rate, it is impossible to resolve under the pandemic, since the epidemic is facing another peak

now, as shown in figure 5. The daily new cases nearly surpass the US in proportions, and the government announced another lockdown recently. This action will certainly increase the unemployment rate, which will worsen the situation. The entire economy's recovery will also be delayed under this circumstance.

Risk of Asset-Bubble problem from the increasing commodity and real estate prices:

An increase in commodity and real estate prices will incur a problem of the asset bubble. Since the panic from people about hyperinflation will make them eager to convert money into real assets, the asset price will increase under this circumstance. Every asset has its intrinsic value, this increase will lead the price to deviate from its intrinsic value. According to the theory of rational expectations, the overvalued price will provide opportunities for arbitraging. Given this, the overvalued price will decrease in the future due to arbitrages. Also, the over-high prices will decrease the liquidity of the asset, lowering the demand for it. Eventually, the bubble will break which means the price will be lower, incurring lots of insolvencies. This problem would make the central bank has less time to resolve the crisis since the bubble break will cause severe damage, and making mistakes pricy. One necessary action is to restrict the debt for investors, to limit the unreasonable investment. This action could relieve the asset-bubble problem, since it restricts irrational investments, slowing down the increased movement in the asset prices. Another benefit from the increased threshold of debt is to encourage people to spend money more in other ways, such as consumption, which is positive for the economy. A report in April 2021 indicates that the Office of the Superintendent of Financial Institutions of Canada is planning to require the borrower to show they can afford a minimum rate of 5.25%, while the current threshold is 4.79%. (Theophilos Argitis, 2021)

Summary:

There are several actions which the Bank of Canada would take. First, keep implementing quantitative easing, but with reduced quantity, avoiding the zero-lower-bound and the deflation risks, as well as the hyperinflation problem. Second, building the Bank of Canada's credibility, stabilize people's expectations on inflation. Third, put restrictions on the issuance of loans, which could relieve the asset-bubble risk. The last, decreasing the target overnight interest rate to pull the inflation back. For all these actions, quantitative easing is already implemented by the Bank of Canada, and it is planning on reducing the quantity. The increased threshold for loans is also on the way to achieve currently. The decreasing of the overnight rate is a long-term method which the Bank of Canada has already put into effect since March 2020. The Bank of Canada should be prepared for the new peak of the epidemic, which could bring more damages to the economy, such as unemployment and aggregate demand. The most important is that the Bank of Canada should be careful when implementing the actions, especially during current circumstances, the price for mistakes is high and irreversible.

References:

- Fergal Smith, 2021. <https://www.reuters.com/article/canada-cenbank-moneymarkets-idUSL1N2K12E6>
- <https://www.bankofcanada.ca/core-functions/monetary-policy/key-interest-rate/>
- <https://www.bankofcanada.ca/rates/indicators/capacity-and-inflation-pressures/inflation/>
- <https://www.bankofcanada.ca/rates/interest-rates/t-bill-yields/>
- https://www.statcan.gc.ca/eng/subjects-start/prices_and_price_indexes/consumer_price_indexes
- <https://health-infobase.canada.ca/covid-19/epidemiological-summary-covid-19-cases.html>
- Statistics Canada. Table 14-10-0342-01 Duration of unemployment, monthly, seasonally adjusted
- Statistics Canada. Table 14-10-0017-01 Labour force characteristics by sex and detailed age group, monthly, unadjusted for seasonality (x 1,000)
- Theophilos Argitis, 2021. <https://www.bloomberg.com/news/articles/2021-04-08/canada-bank-regulator-eyes-tighter-mortgage-qualification-rules>

Appendix:

Figure 1:

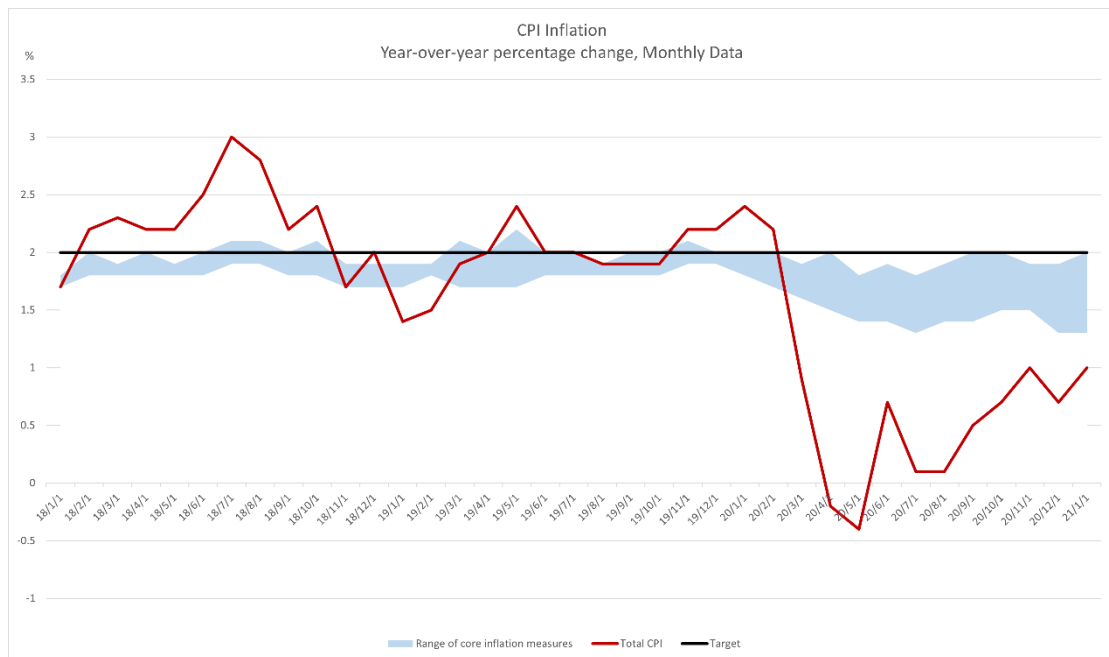


Figure 2:

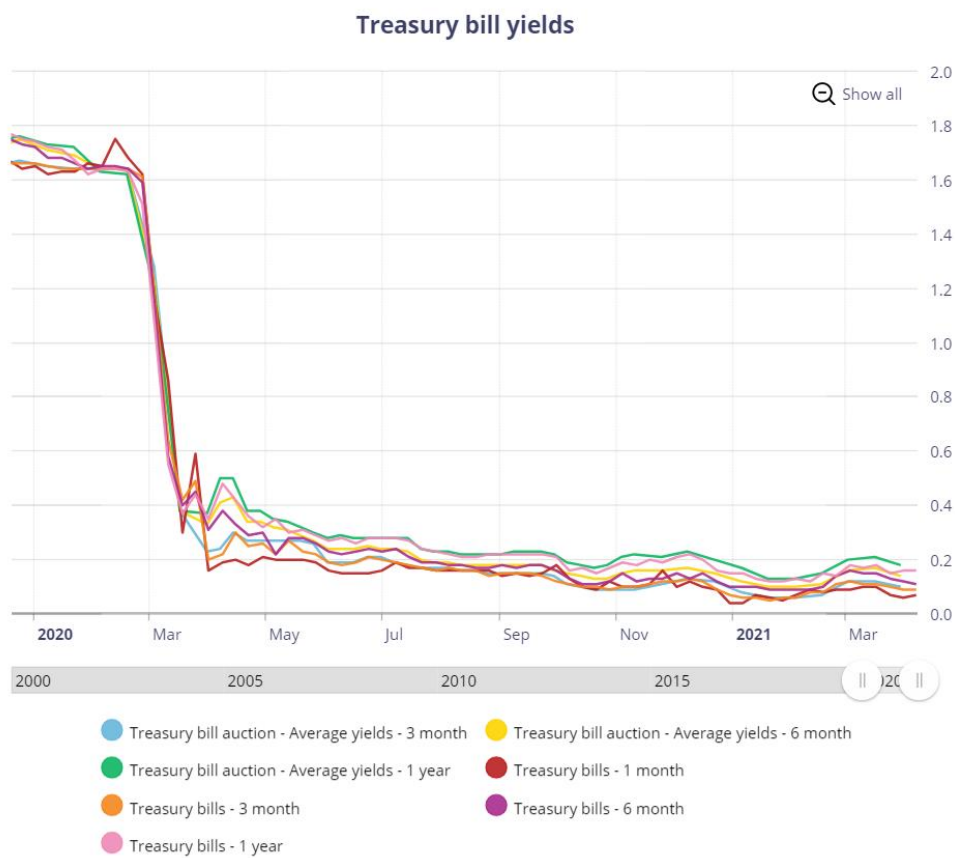
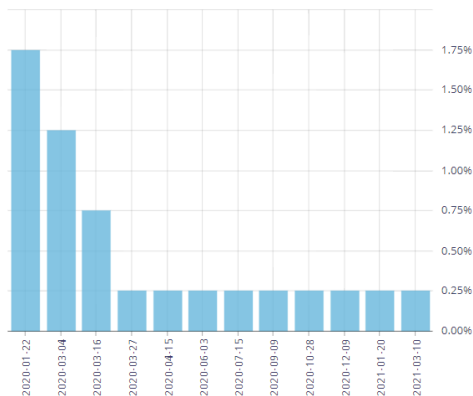


Figure 3:



| Date | Target (%) | Change (%) |
|-------------------|------------|------------|
| March 10, 2021 | 0.25 | --- |
| January 20, 2021 | 0.25 | --- |
| December 9, 2020 | 0.25 | --- |
| October 28, 2020 | 0.25 | --- |
| September 9, 2020 | 0.25 | --- |
| July 15, 2020 | 0.25 | --- |
| June 3, 2020 | 0.25 | --- |
| April 15, 2020 | 0.25 | --- |
| March 27, 2020 | 0.25 | -0.5 |
| March 16, 2020 | 0.75 | -0.5 |
| March 4, 2020 | 1.25 | -0.5 |
| January 22, 2020 | 1.75 | --- |

[More Data](#)

Figure 4:

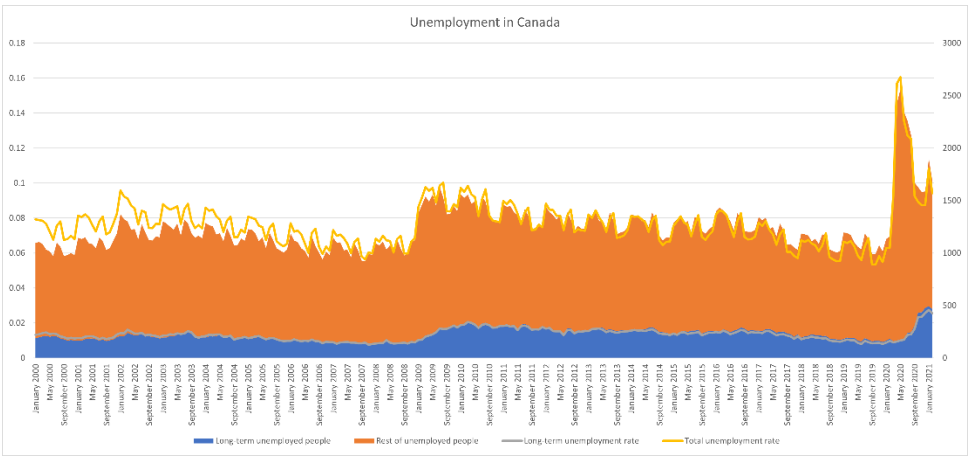


Figure 5:

Figure 2. COVID-19 cases (n=1,026,694 ¹) in Canada by date of illness onset ² as of April 9, 2021, 7 pm EST (total cases ³)

