Canada and US Long-Run Economic Outlook: 2019–24

- **Over the long run, real GDP in the US and Canada is expected to grow at 1.9% and 1.7% respectively. We also assume the nominal equilibrium interest rate is 2.75% in the US and 2.50% in Canada (see box 1 for details).**
- **While the US economy is currently in sizable and persistent excess demand, which is mainly explained by the fiscal stimulus, the Canadian economy operates below potential (see chart 1).**
- **The US economy is expected to gradually slow down as the boost to growth from fiscal stimulus dissipates and eventually becomes a drag on growth, and as past and future interest rate increases will start to affect investment and consumption. As a result, we anticipate that the US GDP will grow at a pace below that of potential GDP throughout the 2020–21 period, reaching a trough of 1.5% in 2021.**
- **In contrast, in Canada we expect that the economy will operate in excess supply over almost the entire 2019–23 horizon. The previously forecasted persistent and substantial Canadian excess demand cycle has been completely erased by the deeper and broader slowdown in Q4-2018 and Q1-2019 as a result of the weaker price of oil and the recent fall of the stock market. Most of these factors should be temporary and growth is expected to pick up after the first quarter of 2019, but starting at the end of 2020, we expect a slowdown of the Canadian economy which is explained by the slowdown of the US economy, the rising interest rates and the expected appreciation of the Canadian dollar.**
- **For the US, core inflation is expected to be around 2% throughout the entire forecasting horizon. In Canada the substantial excess supply should push core inflation temporarily down to 1.8% in mid-2019. Later on, as the economy starts to recover from its current soft patch, core inflation should gradually rise back to 2% by the end of 2020.**
- **In the US we anticipate that the Fed will raise the policy rate to 2.75% by the end of 2019 and 3.00% by 2020Q2, overshooting the long run equilibrium of 2.75%. Starting in 2021 the economy is back in equilibrium and the Fed will cut interest rates to 2.75% and keep it at that level afterwards. In contrast, given the persistent slack in the Canadian economy, the Bank of Canada's overnight rate does not need to overshoot the equilibrium interest rate. Therefore, after a pause explained by the current soft patch we expect that the Bank of Canada will, very gradually, remove the remaining monetary stimulus and will raise the overnight rate to 2.25% by the end of 2020 and 2.50% by the end of 2021 and keep it at this level thereafter.**
- **Our macroeconomic model-based approach used to calculate probabilities of recessions gives the peak probability of a recession in Canada of about 20% in 2020.**

The outlook is informed by the Scotiabank Global Macroeconomic Model (SGMM), which is briefly described in box 3 on page 6.

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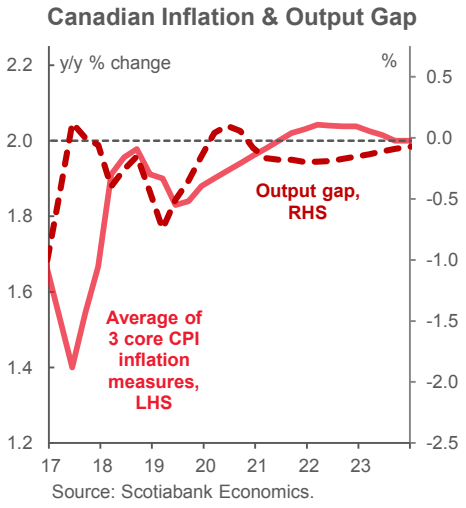
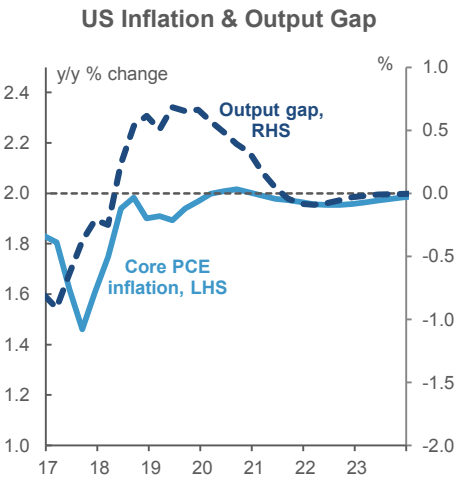
Chart 1: Little inflationary pressure in Canada



Source: Scotiabank Economics.

Chart 2: Excess demand in the US, but little inflation



Source: Scotiabank Economics.

THE UNITED STATES

In 2018, the US economy received substantial fiscal stimulus via expenditures and tax reductions introduced by the Trump administration. As a result, the level of real GDP in the US is currently running above the level of potential, with the excess demand estimated at around 0.6%. Over 2020–21 this excess demand is projected to be eliminated, due to the expected slowing of real GDP growth to the pace below that of potential GDP. The slower growth track is mostly explained by the following factors (table 1):

i) In 2019, growth is projected to be negatively affected by the uncertainty surrounding the US–China trade tensions and by the associated fall of the stock market (we assume that this uncertainty will dissipate and that China and the US will eventually reach an agreement);

ii) In 2019, the government shutdown should also have a temporary negative effect at the start of the year;

iii) In 2020, the impact of fiscal stimulus on real GDP growth is likely to be close to zero;

iv) Given that this stimulus is expected to give the productive capacity of the US economy only a very small boost, over 2020–21 GDP growth is expected to fall below potential as the level of aggregate demand adjusts to equal supply, constrained by the past and future increases of short-term and long-run interest rates.

Despite the sizable excess demand projected, core PCE is close to the target of 2% and we expect that it will stay at this level throughout the 2019–24 period (chart 2). This is explained by:

i) A relatively weak link between the economic slack and inflation, the so-called Phillips Curve, in the US;

ii) Well-anchored inflation expectations around 2%;

iii) A recent decline in the price of oil and the strength of the US dollar which partly offset inflation pressures coming from the excess demand; and

Table 1 **Long-Run Forecast for the United States and Canada**

	2017	2018	2019	2020	2021	2022	2023	2024
United States								
GDP growth, annual average, %	2.2	2.9	2.4	1.8	1.5	1.8	1.9	1.9
Core PCE inflation, annual average, %	1.6	1.9	1.9	2.0	2.0	2.0	2.0	2.0
Federal funds target rate: upper limit, % eop	1.50	2.50	2.75	3.00	2.75	2.75	2.75	2.75
10-year nominal government bond yield, % eop	2.39	2.68	3.05	3.25	3.39	3.50	3.50	3.50
Unemployment rate, annual average, %	4.4	3.9	3.9	3.9	4.0	4.2	4.2	4.2
Canada								
GDP growth, annual average, %	3.0	1.8	1.5	2.1	1.5	1.7	1.7	1.7
Average of 3 core CPI inflation measures, annual average, %	1.5	1.9	1.9	2.0	2.0	2.0	2.0	2.0
BoC's target overnight rate, % eop	1.00	1.75	2.00	2.25	2.50	2.50	2.50	2.50
10-year nominal government bond yield, % eop	2.05	1.97	2.25	2.45	2.73	2.92	3.00	3.00
Unemployment rate, annual average, %	6.3	5.8	5.9	5.9	6.0	6.0	6.0	6.0
USDCAD, eop	1.25	1.36	1.29	1.23	1.21	1.21	1.21	1.21
WTI, annual average, US$/bbl	51	65	58	62	67	66	65	65

Note: More details on the 2019–20 outlook can be found in Scotiabank's Forecast Tables, March 7, 2019.

iv) The expected economic slowdown, which should eventually eliminate the excess demand and generate a small excess supply in 2021, helping further reduce inflationary pressures.

Given that the economy is running above the level of potential GDP and that in the base case the downside risks are expected to fade (e.g. US–China trade tensions), the US Federal Reserve needs to raise the Federal Funds rate above its equilibrium level to help to rebalance the economy and to avoid additional inflation pressures. Thus we forecast that the Federal Reserve will fight the excess demand by gradually raising the Fed Funds rate to 3.00% by mid-2020 (chart 3). As a result, in 2021, we expect that:

i) The economy will be back close to its equilibrium;

ii) The excess demand will be eliminated and a small temporary excess supply will emerge; and

iii) The Fed will subsequently react by cutting interest rates to 2.75% which is the assumed long-run equilibrium. The Fed Funds rate is expected to stay at 2.75% throughout the 2021Q3–2024Q4 period.

BOX 1: ASSUMPTIONS REGARDING POTENTIAL GDP* GROWTH AND EQUILIBRIUM INTEREST RATES

US:

- We assume that in the long run potential GDP growth is 1.9%, consistent with the latest long run median dot plot of the FOMC members.
- In 2018–20 we also assume that the tax reform will add 0.1 ppts to the long-run forecast, leaving potential GDP growth at 2.0% over that period.
- As in the previous long run forecast we assume that the long run equilibrium Federal Funds rate is 2.75%, somewhat lower than the latest long run median dot plot of the FOMC members (i.e. 3.0%).

Canada:

- We assume that potential GDP will grow at 1.7% on the back of relatively weak productivity.
- This growth profile is slightly softer compared to the one in the Bank of Canada's April 2018 Monetary Policy Report (1.8% vs 1.9%), which is outdated and does not incorporate the relatively weak labour productivity observed in 2018
- Based on our analysis (see Perevalov, 2019), we now assume that the long run equilibrium of the overnight rate is 2.50. This assumption is at the lower end of the range of estimates of the Bank of Canada (i.e. between 2.5% and 3.5%). It is worth nothing that we assume a difference of 25bps between the US and the Canadian neutral rates which is consistent with our assumption that the growth rate of US potential GDP is 0.2 percentage point above the growth rate of Canadian potential GDP.

*Potential GDP is the equilibrium level of GDP consistent with inflation being sustainably at the 2.0% target. Potential output is driven by trend labour input (hours worked economy-wide), as well as labour productivity, which is a function of capital per unit of trend labour and trend total factor productivity.

CANADA

Our relatively weak Canadian growth forecast for 2019, at 1.5%, is mostly explained by:

i) The recent important drop of the price of oil, which for an oil exporter like Canada generates a negative wealth effect;

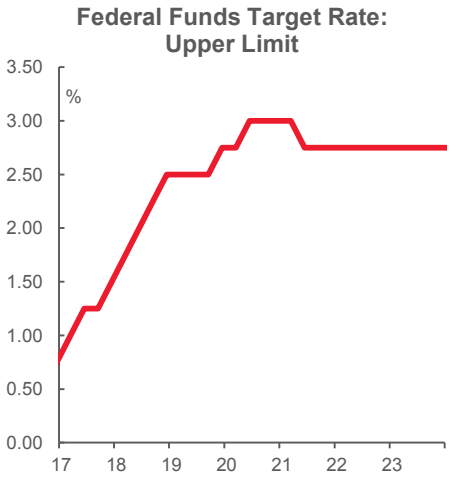
ii) Weakness in housing markets due to the introduction of B-20 mortgage rules and other regulations;

iii) The cut of oil production announced by the Alberta Government; and

iv) The uncertainty surrounding the China–US trade tensions and the associated fall of the stock market, which creates a negative wealth effect for households and affects investment decisions.

In our base case, these effects are temporary. We forecast that the price of oil will gradually rise to the equilibrium level of 65 USD/bbl (WTI), and that the trade spat between US and China is resolved. In addition, while the Alberta government's

Chart 3: Fed funds rate overshoots before reaching equilibrium



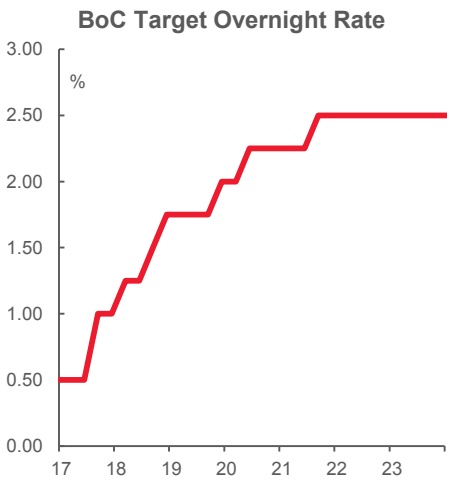
Source: Scotiabank Economics.

BOX 2: THE FORECAST OF THE CANADIAN DOLLAR

In 2019Q1, due to unfavorable Canada-US interest rate and GDP growth differentials and global trade war uncertainty, the Canadian dollar is 10% weaker than its current equilibrium, which is driven by the current level of the price of oil and the global adjustment of the US dollar.

Over the long-run, the expected gradual reversal, and slight overshoot, of the price of oil toward its long run equilibrium of 65$ (WTI) and the narrowing of the US-Canada interest rates differential is anticipated to gradually appreciate the Canadian dollar towards its long run equilibrium of 1.21. This equilibrium value is defined by the long run values of the price of oil and the global adjustment of the US dollar.

Chart 4: Gradual normalization by the BoC



Source: Scotiabank Economics.

mandated temporary oil production cuts are expected to subtract from growth in 2019Q1, the subsequent ramp-up of production is expected to boost growth over the remainder of the year. All these factors boost growth beyond the first quarter of 2019.

Finally, in 2020 economic activity will be relatively strong due to the effect of the Kitimat gas project in BC. Starting in the second half of 2020 we are forecasting a slowdown of the economy mainly explained by:

i) The expected slowdown of the US economy and its impact on exports;

ii) The rising short- and long-term interest rates, which slow investment and consumption growth;

iii) The expected gradual appreciation of the Canadian dollar, having a negative effect on net exports (see box 3).

Across these fluctuations in growth, it is important to note that we do not forecast an excess demand cycle like we did in our previous forecasts (chart 1). In fact, in 2019Q1 the economy is in excess supply of -0.7% and a small excess supply persists until 2023 (with the exception of a few quarters in 2020).

This has the following implications for the forecast of inflation and monetary policy:

i) In mid-2019, the excess supply pushes core inflation down to 1.8%;

ii) Later on, as the economy starts to recover from its current soft patch and as the price of oil rises, core inflation should gradually go back to 2% by the end of 2020;

iii) Core CPI inflation will gradually converge to the inflation target. Thus going forward, the overnight rate does not need to overshoot the equilibrium interest rate as it gradually converges to it; and

Table 2 **Factors Explaining the Canadian GDP Growth Outlook**

Real GDP growth: impact of policy developments

	2019f	2020f	2021f	2022f	2023f
Model-based projections based on fundamentals	**1.7**	**1.8**	**1.6**	**1.7**	**1.7**
Adjustments for policy developments and other factors	**-0.2**	**0.3**	**-0.1**	**0.0**	**0.0**
Oil production cuts	-0.2	0.0	0.0	0.0	0.0
Steel & aluminum tariffs	-0.1	0.0	0.0	0.0	0.0
Global protectionism	-0.1	0.0	0.0	0.0	0.0
B-20 mortgage rules	0.0	0.0	0.0	0.0	0.0
Kitimat LNG Project	0.0	0.2	0.0	0.0	0.0
NAFTA uncertainty	0.1	0.0	0.0	0.0	0.0
Accelerated depreciation	0.2	0.1	-0.1	0.0	0.0
Current baseline	**1.5**	**2.1**	**1.5**	**1.7**	**1.7**

Source: Scotiabank Economics.

iv) In the short term, there is less urgency for monetary policy to raise rates as the economy still needs some support to simply gradually move core inflation towards its target.

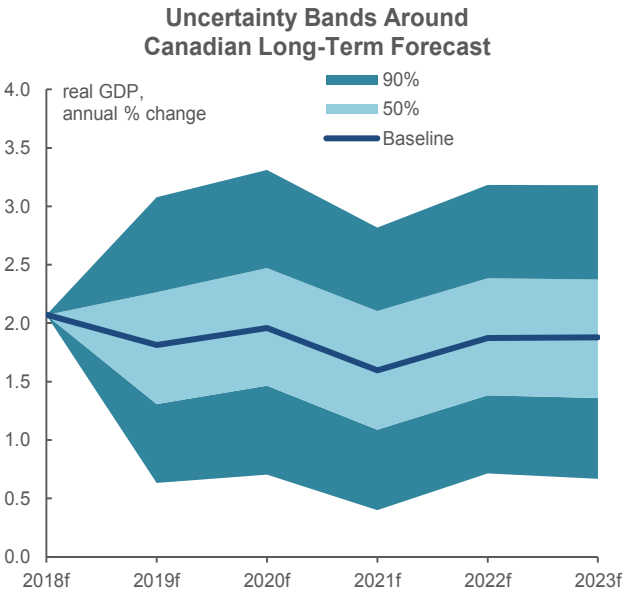
Therefore, we forecast that, after a pause explained by temporary factors affecting GDP growth, the policy rate will resume its gradual rising path with one hike per year over the 2019–2021 period (chart 4).

UNCERTAINTY AROUND OUR BASE CASE SCENARIO AND PROBABILITY OF RECESSION

The uncertainty around our forecast remains significant, as can be seen from confidence bands around our forecast for Canada (chart 5).

- The relatively wide 90% range of outcomes, from 0.3% to 2.8% in 2021, highlights an important feature of our forecast: beyond 2020 there is a higher probability of weak or negative growth, given the expected slowdown in GDP growth in the baseline over that period. Therefore, while there is still a significant chance of growth close to 3%, there is also an increased risk of recession beyond 2020.
- In fact, the fan chart implies that in 2020, when quarterly real GDP growth is significantly weaker than potential, the probability of a recession in Canada peaks at 20% (table 3).
- The probability of a recession in the US peaks at just 10% in 2020, lower than for Canada, given that the US economy is relatively closed and so there are fewer sources of external shocks that can push it into a recession, in comparison to Canada that is very sensitive to domestic and US developments.

Chart 5: High levels of uncertainty around our Canadian growth outlook



Sources: Scotiabank Economics.

Table 3: Probability of a technical recession in Canada and the US

	2019	2020	2021	2022	2023
Canada	12%	20%	18%	16%	16%
US	5%	10%	10%	4%	6%

Source: Scotiabank Economics.

Box 3: Scotiabank Global Macroeconomic Model (SGMM)

The Scotiabank Economics *Global Outlook* published on January 11th and the long-term outlook discussed in this note are informed by SGMM, an estimated general equilibrium model of the Canadian, US, and other economies (including Europe and emerging markets), similar to, but less detailed than, the semi-structural models at the Bank of Canada, such as MUSE (Gosselin and Lalonde 2005) and LENS (Gervais and Gosselin, 2014). SGMM helps Scotiabank Economics develop an internally consistent outlook for the Canadian and US economies by simultaneously taking into account the following key macroeconomic channels:

- the positive impact of a strengthening economy on consumer price inflation, with excess demand (supply) implying inflation above (below) the target;
- the reaction of monetary authorities, the Bank of Canada (BoC) and the Federal Reserve, which raise their policy rates in the face of rising inflationary pressures and dwindling economic slack;
- the cooling impact of higher interest rates on the macroeconomy, including the direct impact of interest rates on domestic demand, and the impact of higher interest rates on the Canadian dollar, which has a slowing effect on net trade; and
- international spillovers from US growth to Canada, including on the forecast for exports.

Below we provide more details on the structure of the model and the drivers of key variables in the Canadian economy block of SGMM:

- The model environment features forward-looking behaviour, with agents attempting to optimally set the level of their decision variables, such as real GDP, policy rates, and others.
- Real GDP is the sum of private domestic demand, government expenditures, and net international trade.
- Domestic demand is driven by short-term and long-term interest rates, oil prices, disposable income, financial and housing wealth, and the exchange rate.
- While imports are mostly driven by private domestic demand and the exchange rate, exports are a function of foreign demand, financial wealth in the US, and the exchange rate.
- The augmented Phillips curve equation relates the slack in the economy (the output gap), the exchange rate, the unit labour cost, and the price of oil, to core inflation.
- A forward-looking monetary-policy rule determines the response of the BoC's overnight rate to the evolution of the output gap and a three-quarter-ahead forecast of inflation, the latter relative to the BoC's target.
- The 10-year government bond yield is a function of the expected path for the BoC's overnight rate, and the term premium. The latter is strongly affected by the evolution of the term premium in the US 10-year government bond yield, which is a function of the US Federal Reserve balance sheet and the holdings of US Treasury bonds by Chinese authorities.
- The Canada-US bilateral exchange rate is a function of the price of oil, the differential of GDP growth in the two countries, the 10-year interest rate differential, and a US factor capturing the multilateral adjustment of the US dollar.
- Other variables included in the model are the real price of oil, the real disposable income, the unemployment rate, financial assets and housing wealth. The endogenous global supply and demand for oil determine the evolution of the oil price in the model.

The structure of the US and Europe is similar to that of Canada, while the specifications for countries in the rest of the world are less detailed.

Gosselin, Marc-Andre and Rene Lalonde, 2005, "MUSE: The Bank of Canada's new projection model of the U.S. economy", *Bank of Canada Technical Report 96*.

Gervais, Olivier, and Marc-Andre Gosselin, 2014, "Analyzing and Forecasting the Canadian Economy through the LENS Model", *Bank of Canada Technical Report No. 102*.

Scotiabank Economics, Global Outlook, January 11, 2019.