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Alternative Scenario to the October 2017 MPR Base-Case Projection: Higher Potential Growth



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Abstract

We construct an alternative scenario in which trend labour input and business investment are stronger than that expected in the Bank of Canada's base-case projection in the October 2017 *Monetary Policy Report*. We find that while the size and timing of these effects are highly uncertain, the level of potential and real output could be almost 1 per cent higher than expected by the end of 2020. The resulting effect on the output gap and inflation is small and therefore does not affect the stance of monetary policy.

Bank topics: Inflation and prices; monetary policy; potential output

JEL codes: E, E2, E22, E24, E27, E5

Résumé

Nous construisons un scénario de rechange dans lequel le facteur travail tendanciel et les investissements des entreprises sont supérieurs à ce qui est prévu dans le scénario de référence du Rapport sur la politique monétaire de la Banque du Canada. Nos résultats montrent que, malgré l'importante incertitude entourant l'ampleur des effets et le moment où ils se feront sentir, le niveau de la production potentielle et de la production réelle pourrait être de près de 1 % plus élevé qu'escompté d'ici la fin de 2020. Les effets résultants sur l'écart de production et sur l'inflation sont petits et n'affectent donc pas l'orientation de la politique monétaire.

Sujets : Inflation et prix; Politique monétaire; Production potentielle

Codes JEL : E, E2, E22, E24, E27, E5

1. Introduction

As aggregate demand continues to increase and the economy approaches or exceeds full capacity, incentives arise for firm creation and business investment. This response to rising demand could be stronger than that incorporated in the Bank of Canada's base-case projection in its October 2017 *Monetary Policy Report* (MPR). At the same time, stronger economic activity would boost labour demand, putting upward pressure on wages, which could encourage workers who have left the labour force or are underemployed to increase their participation in the labour market. This endogenous supply response happens in almost every expansionary phase of the business cycle.

One of the key inputs in the Bank of Canada's base-case projection is the current level and future growth rate of potential output. However, potential output is unobservable, and its identification is subject to a high degree of uncertainty. In this note, we consider an alternative scenario, in which we make two important departures from the MPR base-case projection. First, we assume that trend labour input and the growth of business investment are stronger than they are in the base-case projection. Then we quantify the macro impact of this alternative scenario on output and inflation. We find that while the size and timing of these effects are highly uncertain, the level of potential and real output could be as much as 1 per cent higher than expected by the end of 2020. The stronger these effects are, the more likely it is that potential output growth will be in the upper part of the Bank's range of estimates. However, this stronger GDP growth should not affect the stance of monetary policy, given the small implications for the output gap and inflation.

2. Employment, Investment and Higher Potential Output

To explore the consequences of an unexpected pickup in economic activity on potential output, we examine alternative paths of both trend labour input (TLI) and trend labour productivity (TLP) using the integrated framework model.¹

First, we assume a higher growth rate of employment that is consistent with trend labour input gradually increasing from its current level to one that is in line with the "no-hysteresis" scenario presented in a note published in conjunction with the April MPR.² Specifically, the base case for TLI estimated within the integrated framework model allows the underlying parameters to be re-estimated each year using the latest available

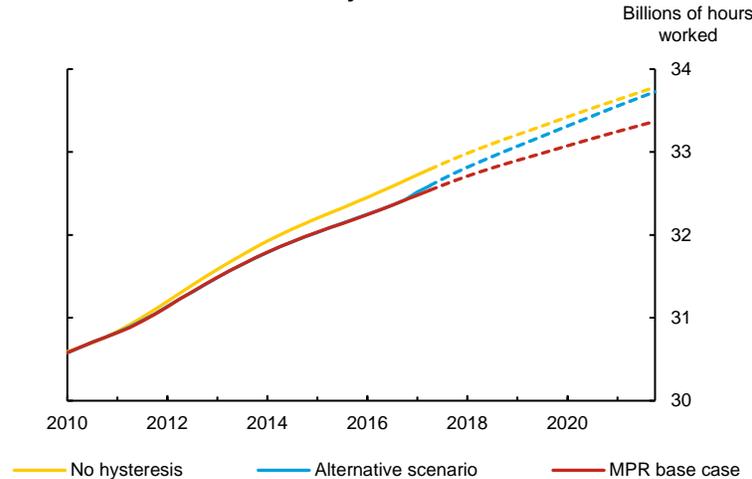
¹ For details on the integrated framework, one model used to estimate the level and growth rate of potential output at the Bank, see Pichette et al. (2015).

² See Agopsowicz et al. (2017) on the annual reassessment of potential output.

data.³ However, in the no-hysteresis scenario, only information up to 2008 is used to estimate the model parameters; these are then used to identify the current and future levels of TLI. In doing so, we assume that the Great Recession had little impact on the fundamental structure of the labour market, and that the level of TLI that existed before the recession (after taking into account population aging) is still achievable without adding to inflationary pressures.⁴

Chart 1 details the current base-case estimate of trend labour input (red line), the no-hysteresis scenario (yellow line) and our alternative scenario (blue line). We believe it is unlikely that all of the hysteresis could disappear in the near term, so the alternative-scenario path assumes that the no-hysteresis path is reached just beyond the projection horizon.⁵ In terms of employment, the alternative scenario implies about 170 thousand more full-time equivalent employed workers by 2020 than in the base-case projection.⁶

Chart 1: Trend labour input in the alternative higher potential-growth scenario returns to a no-hysteresis trend



³ The underlying parameters in the TLI model include cohort and age-group fixed effects, as well as parameters on other macroeconomic variables of importance. For details, see Pichette et al. (2015).

⁴ When the latest data are used to estimate the parameters of the TLI model, persistent weakness in the data—such as low youth participation rates, which have been observed since 2008—affect the parameter estimates and, therefore, TLI. These effects are removed from the estimates by using data only up to 2008 to estimate TLI in the no-hysteresis scenario.

⁵ By the end of 2020, the level of TLI in the alternative scenario has made up nearly 80 per cent of the gap between the base-case and no-hysteresis estimates of trend labour input.

⁶ Full-time equivalent workers are calculated as the number of full-time workers plus part-time workers after their hours have been converted into the equivalent number of full-time hours.

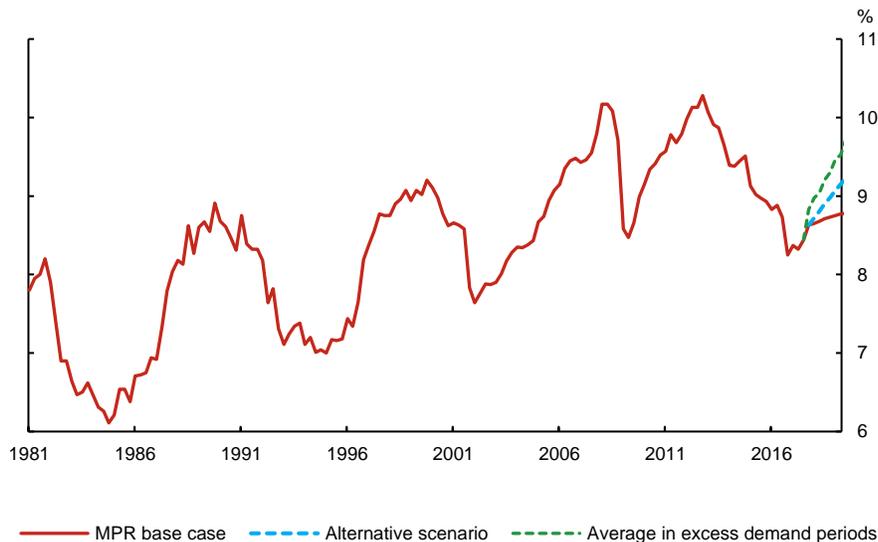
Second, we examine the behaviour of business investment at a stage of the business cycle when the economy is approaching full capacity. The ratio of non-oil and gas investment to GDP has almost always picked up rapidly in episodes where the economy was approaching or exceeding full capacity, averaging 0.7 percentage points over two years (green dotted line in **Chart 2**).⁷ In contrast, this ratio displays only a modest increase in the MPR base case (red line), despite the assessment by Bank staff that the economy is currently close to a state of excess demand and will likely remain in such a state over the projection horizon.⁸ In our alternative scenario, however, we assume that non-oil and gas investment (blue line) will pick up by more than that anticipated in the MPR base case. Nevertheless, the growth is not as strong as that represented by the historical average, reflecting the concern that some losses in competitiveness could have a more structural impact on investment. More precisely, we assume that non-oil and gas investment grows at 6 per cent over the projection horizon, compared with about 3 per cent in the base case.

As a result of the positive shock to investment, trend labour productivity increases. The increases in the capital stock affect the productive capacity of the economy and the efficiency of production (through capital deepening). The assumption of greater TLI growth, described above, could also lead to more robust investment, if that capital is a complementary input to labour. As more jobs are filled, firms will likely need more capital and will therefore need to increase investment.

⁷ We focus on non-oil and gas investment, since oil and gas investment is heavily influenced by fluctuations in oil prices.

⁸ Several structural factors can explain why Bank staff believe investment might not pick up as strongly as in past cycles. For example, population aging, weak productivity growth and the 2014–15 collapse in oil prices could add more weight to business investment. See Barnett and Mendes (2017).

Chart 2: Ratio of real non-oil and gas investment to GDP



3. The Macroeconomic Impact of Higher Potential

When the adjustments to trend labour input and productivity are taken together, the level of potential output in this alternative scenario is approximately 1 per cent higher than in the base-case projection by the end of 2020 (**Table 1**). At the same time, stronger employment feeding into higher household spending, combined with more robust investment, raises the level of output. The level of real output is thus about 1 per cent higher by the end of 2020. This stronger growth does not add much to inflationary pressures, since it is associated with an increase in capacity.

In fact, the effect on inflation is more nuanced in the short run. On one hand, the stronger investment assumption embedded in this scenario is an aggregate demand shock. Given that it takes some time for capital to increase and build more capacity, the stronger investment pushes up the positive output gap in the short term, and hence creates some inflationary pressure. However, the direct impact of stronger investment on the output gap is relatively small, considering the high share of imported content in investment. On the other hand, while higher TLI raises potential output instantly, real output increases after a delay. In the short run, this opens a negative gap, thereby creating downward pressure on prices. On net, the effect from TLI dominates in the short run, leading to a small negative output gap in 2018, but the effect on inflation remains marginal (**Table 1**).

Beyond 2018, this stronger GDP growth should not affect the stance of monetary policy, considering its small implications for the output gap and inflation.⁹

Table 1: Impact on potential output and the level of GDP (difference from the base-case projection in the October 2017 Monetary Policy Report)

	2018	2019	2020
Potential output (level, % diff)	0.3	0.6	0.9
Real GDP (level % diff)	0.2	0.6	0.9
Inflation (p.p. diff)	0.0	0.0	0.0

4. Conclusion

We construct an alternative scenario in which trend labour input and business investment are stronger than that expected in the base-case projection in the October MPR. While the size and timing of these effects are highly uncertain, the level of potential output could be almost 1 per cent higher than expected by the end of 2020. As noted in the MPR, estimates of potential output—an unobserved variable—are subject to a high degree of uncertainty. The same level of caution should be applied to the current analysis of alternative paths for potential output. For this reason, the analysis presented in this note should be considered illustrative of the possible mechanisms at play and broad adjustments rather than as exact estimates.

⁹ In theory, stronger potential output would raise the neutral rate. In this simulation, however, we held the neutral rate constant, since its effect on the neutral rate would be small. See Mendes (2015).

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