Labour market uncertainties and monetary policy

Introduction

Good afternoon. It is a great pleasure for me to have the opportunity to speak to CABE again. I'm sorry I could not participate in your summer conference, so I'm thankful we were able to reschedule. I value your keen interest in the Bank of Canada's work and your thoughtful feedback.

In the past, I have tried to speak on issues of current interest to your membership, and I hope today is no different. This afternoon I'll be talking about labour market uncertainties, which have become much more pronounced during the COVID-19 pandemic.

We are paying closer attention to the labour market because COVID-19 has had severe and unprecedented impacts on Canadian workers. Moreover, the pandemic and related control measures had an unusual and uneven impact across sectors of our economy—and especially across workers.

At the same time, labour shortages have become more pervasive. Vacancies have risen as demand has surged for hard-to-distance services.

The pandemic has also accelerated ongoing structural trends, most notably toward digital technologies. This shift has accentuated the shortage of workers with related skill sets that existed before the pandemic.

Earlier this year, Governor Macklem stressed the importance of a complete and inclusive recovery from the pandemic.[1] He argued that a more diverse economy would provide better opportunities and greater prosperity for everyone.

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[1] T. Macklem, "The Benefits of an Inclusive Economy" (speech delivered virtually to the universities of Atlantic Canada, Halifax, Nova Scotia, May 13, 2021).

And so the complicated effects on the labour market of the COVID-19 pandemic and ongoing structural shifts raise an important question: How can monetary policy adapt and best promote this inclusive recovery?

To consider this question, I will begin by exploring two related labour market uncertainties.

The first concerns the level of maximum sustainable employment. This issue is critical because our current forward guidance for holding the policy interest rate at the effective lower bound is conditional on economic slack being absorbed, so that inflation is sustainably at our 2 percent target. For the economy to be operating at its productive capacity, employment should be at its maximum sustainable level.

The second related uncertainty involves the relationship between labour market tightness and inflation. If this relationship—which we generally refer to as the Phillips curve—is less certain, then observed inflation provides less information about the state of the economy and employment.

I will then explain the comprehensive approach we are taking to assess labour market conditions, which should help us better manage these uncertainties and achieve our inflation target.

Labour market impacts and uncertainties

When the pandemic first struck in the spring of 2020 and our economy went into lockdown, about 3 million workers lost their jobs. Many of those who remained employed worked fewer hours.

Women, youth, visible minorities and recent immigrants experienced substantial job losses. This is because many worked in lower-wage, hard-to-distance industries such as hospitality, recreation, retail and personal services. **Chart 1** shows that the lowest-paid occupations have experienced the largest employment losses.

Chart 1: Employment by occupation and wage level
Index, Feb. 2020 = 100, seasonally adjusted
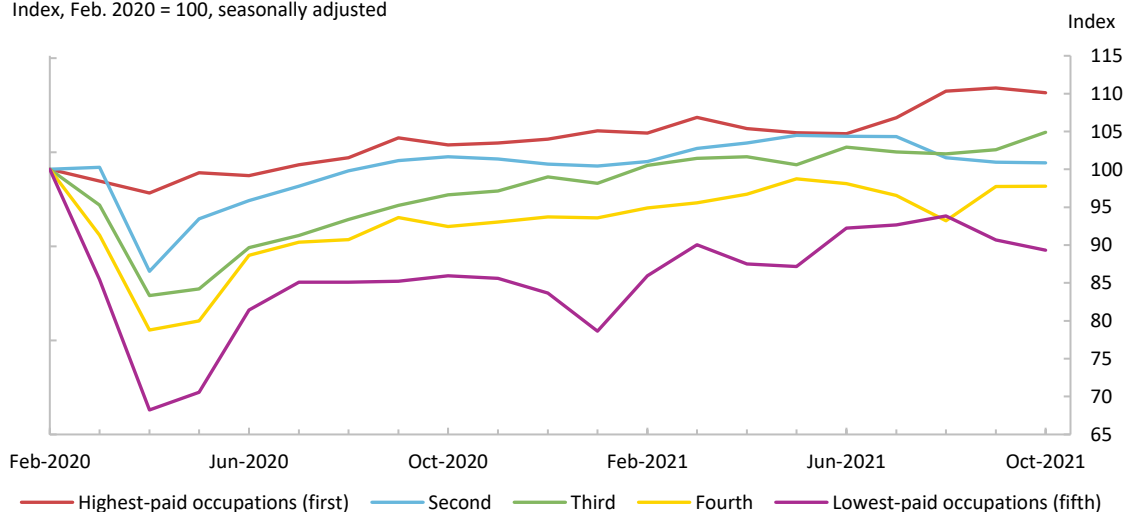
Note: Occupations (2-digit NOCS) are grouped based on 2019 median wages, such that each group accounts for one-fifth of the total number of employees in 2019.

Sources: Statistics Canada and Bank of Canada calculations   Last observation: October 2021

Earlier in the pandemic, the recovery in employment varied across workers, with those in the goods-producing industries returning to work sooner than those engaged in hard-to-distance services.

However, in recent months this pattern has reversed. As the rate of vaccination has increased, health restrictions have eased and employment in service industries has rebounded. At the same time, global supply constraints have dampened economic activity and employment in some goods-producing industries.

Overall, the labour market has recovered the pandemic-induced job losses, but considerable excess capacity remains. The rates of unemployment and underemployment remain elevated, especially for certain groups in the labour force.

The COVID-19 pandemic also compounded the impacts of ongoing structural trends, making it more difficult to assess the health of the labour market and the overall state of employment. Transformative forces like technological change, demographic shifts, globalization and new forms of employment relationships have changed our job market in important ways that are not yet fully understood.

So let's turn now to the question of how these uncertainties affect the conduct of monetary policy.

With an inflation target, our normal practice is to look ahead and adjust the degree of monetary stimulus to affect the level of aggregate demand and close any gap with potential output or aggregate supply. With inflation expectations well anchored at 2 percent, inflation should sustainably come back to target when economic slack is absorbed and the economy returns to maximum employment.

Employment is the most important determinant of our economy's productive capacity. And so it's worth noting that in most circumstances, closing the output gap implies that the economy has reached maximum employment.

But labour market uncertainties pose a challenge to the foundations of this paradigm. Specifically, with these uncertainties, it's harder to know when the economy has reached maximum employment and the output gap has been closed.

It is also more difficult to gauge underlying inflationary pressure when the Phillips curve relationship is uncertain.

Let's explore each issue in more detail to better understand how monetary policy should adapt to these uncertainties.

Maximum sustainable employment

We'll begin with the concept of maximum sustainable employment. By this, I mean the highest level of employment that the economy can sustain without triggering inflationary pressure.

It's an *important* concept. Maximum employment implies an inclusive economy, with ample opportunity for everyone who wants to work.

It's also a *complex* concept because the labour market is not one single market. Rather, it is the sum of many markets, differentiated by a variety of characteristics, including skill, industry and location.

It is also a dynamic market, one in which some workers are transitioning in and out of the labour force, while others are moving between jobs.[2]

Consequently, it's difficult to know whether workers are in jobs that match their skills and are working the number of hours they want. In other words, it's hard to know when we're using all of our available human resources to their greatest potential.

As I mentioned earlier, important structural forces are affecting the labour market. These forces are likely causing the level of maximum sustainable employment to change, thus making it more difficult to identify. While monetary policy cannot undo the impact of these forces on the labour market, it must deal with the resulting uncertainty.

For example, an aging population and higher levels of immigration are having opposing effects on labour supply. In addition, globalization and technological change—especially digitalization—are affecting labour demand. These forces are shifting the demand for, and supply of, different skill sets. They are also contributing to job mismatches—ongoing vacancies while some workers remain unemployed. So their net effect on maximum employment is unclear.

Also, the nature of employment is changing: consider, for example, the rising prevalence of part-time or short-term work, especially among our youth.[3] A related but distinct trend is the increase in gig employment—such as being an Uber driver—where workers are independent contractors, not employees.[4]

Do these trends toward less traditional forms of work reflect the impact of new digital technologies, the higher costs that firms bear with full-time employment, or workers' changing preferences? It is likely some combination of these factors, but we are unsure of the individual effects.

Beyond these longer-term forces, COVID-19 is shaking up an already shifting labour market through its uneven impacts across sectors and by accelerating the adoption of digital technology to facilitate working and shopping from home. As a result, it has become even harder to separate trends from cycles.

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[2] This dynamism implies that even at maximum sustainable employment, frictional unemployment will always exist as workers seek better opportunities and move between jobs.

[3] A recent Statistics Canada study finds that since 1976, part-time work for youth aged 15 to 30 who are not in school has increased substantially and that this increase has largely been involuntary. For more information, refer to R. Morissette, "Chapter 2: Youth Employment in Canada," *Portrait of Youth in Canada: Data Report*, Statistics Canada (July 26, 2021).

[4] More information about the gig economy can be found in O. Kostyshyna and C. Luu, "The Size and Characteristics of Informal ("Gig") Work in Canada," Bank of Canada Staff Analytical Note No. 2019-6 (February 2019) and S.-H. Jeon, H. Liu and Y. Ostrovsky, "Measuring the Gig Economy in Canada Using Administrative Data," Statistics Canada Analytical Studies Branch Research Papers Series 11F0019M No. 437 (December 16, 2019). Also see research on multiple job-holding patterns: O. Kostyshyna and E. Lalé, "On the Evolution of Multiple Jobholding in Canada," Bank of Canada Staff Working Paper No. 2019-49 (December 2019).

And as in other recessions, we expect the pandemic shock will have some scarring effects, and they could be larger given its profound and pervasive impacts. As shown in **Chart 2**, the long-term unemployment rate is currently at an elevated level. We could see the skills of these workers erode and their attachment to the labour market weaken.

Chart 2: **Short-term versus long-term unemployment rate**

Percent, seasonally adjusted
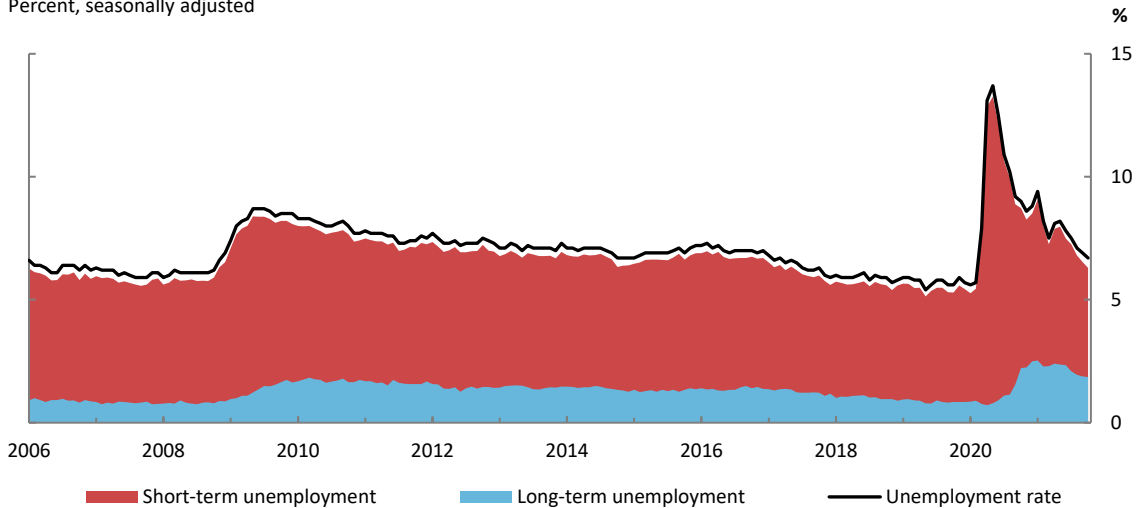
Note: Long-term unemployment refers to those who have been unemployed for 27 weeks or more. The short- and long-term unemployment rates do not sum up to the overall unemployment rate because some people are unemployed for an unknown duration.

Sources: Statistics Canada and Bank of Canada calculations   Last observation: October 2021

So, as you can see, ongoing structural changes and the effects of the pandemic have made it much more difficult to assess the overall state of employment and capacity pressures. This poses an important challenge to monetary policy.

The Phillips curve

Now let me turn to a second, and closely related, aspect of labour market uncertainty: the nature of the Phillips curve.

In its simplest form, the Phillips curve relationship says that inflation is determined primarily by two factors: inflation expectations and economic slack.

Now, what does the Canadian evidence tell us about these two factors?

Inflation expectations have been relatively well anchored in Canada since the mid-1990s. People and businesses expect the Bank to do its job of keeping inflation around 2 percent because we have done so for more than 25 years. Since inflation expectations have been well anchored for some time, this factor has remained largely unchanged.

As for economic slack, we've seen in Canada that when the economy is operating below its potential and unemployment is elevated, inflation tends to be below 2 percent.[5] However, estimates of this Phillips curve relationship are less

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[5] The relationship between inflation and the output gap can most easily be seen using underlying inflation estimated by our core inflation measures. For more information, see H. Lao and

precise when the economy is operating above potential. This is primarily because there have been fewer instances of excess demand over the past 25 years.

In addition, it seems the nature of the Phillips curve relationship changed after central banks adopted inflation targeting. The Canadian evidence suggests that, with firmly anchored inflation expectations, the relationship between inflation and the output gap has weakened. In other words, the Phillips curve has become flatter.[6]

These findings on the flattening of the Phillips curve also generally hold in other advanced economies, so the Canadian evidence is not unusual.[7]

In addition, a recent Bank review of literature on the shape of the Phillips curve in advanced economies finds that while the curve appears to have become flatter, it may be convex. In other words, it steepens as output increases beyond the economy's normal productive capacity.[8] This implies that when the economy is running above its potential, there is an even greater impact on inflation.[9]

To summarize, the evidence for Canada indicates that the relationship between labour market conditions and inflationary pressure has weakened and become difficult to measure—especially in periods of excess demand. This uncertainty is closely related to the ambiguity about the level of maximum sustainable employment. Because the Phillips curve relationship has weakened, observed inflation provides less information about the level of maximum sustainable employment.[10]

C. Steyn, "A Comprehensive Evaluation of Measures of Core Inflation in Canada: An Update," Bank of Canada Staff Discussion Paper No. 2019-9 (September 2019).

[6] For recent evidence, see A. Landry and R. Sekkel, "Has the Canadian Phillips Curve Flattened? Evidence from VARs," Bank of Canada Staff Analytical Note (forthcoming). Earlier evidence can be found in P. Beaudry and M. Doyle, "What Happened to the Phillips Curve in the 1990s in Canada?" (2010) and F. Demers, "The Canadian Phillips Curve and Regime Shifting," Bank of Canada Staff Working Paper No. 2003-32 (October 2003)

[7] For evidence of flattening of the US Phillips curve, see, among others, L. M. Ball and S. Mazumder, "Inflation Dynamics and the Great Recession," *Brookings Papers on Economic Activity* (Spring 2011): 337–381; and M. Del Negro, M. Lenza, G. Primiceri and A. Tambalotti, "What's Up with the Phillips Curve?" *Brookings Papers on Economic Activity: BPEA Conference Drafts* (March 2020): 1–75.

[8] St-Cyr (2018) reviews 35 studies: R. St-Cyr, "Non-linéarité de la courbe de Phillips : un survol de la littérature," Bank of Canada Staff Analytical Note No. 2018-3 (January 2018). See also K. Forbes, J. Gagnon and C. Collins, "Low Inflation Bends the Phillips Curve Around the World: Extended Results," Peterson Institute for International Economics Working Paper No. 21-15 (September 2021).

[9] One likely mechanism driving this result is that as output expands, an increasing number of firms run up against capacity constraints. See T. Macklem, "Capacity Constraints, Price Adjustment, and Monetary Policy" *Bank of Canada Review* (Spring 1997): 39–56; and C. Boehm and N. Pandalai-Nayar, "Convex Supply Curves" National Bureau of Economic Research Working Paper No. 26829 (March 2020).

[10] M. Cacciatore, D. Matveev and R. Sekkel, "Uncertainty and Macroeconomic Experimentation: Empirical Challenges and Insights from the Academic Literature," Bank of Canada Staff Discussion Paper (forthcoming) demonstrates that when the Phillips curve is flatter, it becomes more difficult to use signals from actual inflation to identify maximum sustainable employment.

Taken together, these uncertainties call for a deeper understanding of the labour market in the conduct of monetary policy.

Better assessment of labour market conditions

As we've observed, the pandemic has had an unprecedented and uneven impact on the labour market. To better understand this unusual impact, we took a broad set of labour market indicators, compared their current values against those predicted by historical experience and computed a disagreement index to capture the variation.[11]

As you can see from **Chart 3**, the index spiked at the height of the pandemic and remains above its historical average. This finding suggests that traditional labour market indicators, such as the unemployment rate, did not fully capture the experiences of different workers over the course of the pandemic.

Chart 3: **Level of disagreement among labour market indicators remains elevated**
Measure of disagreement between labour market indicators, monthly data
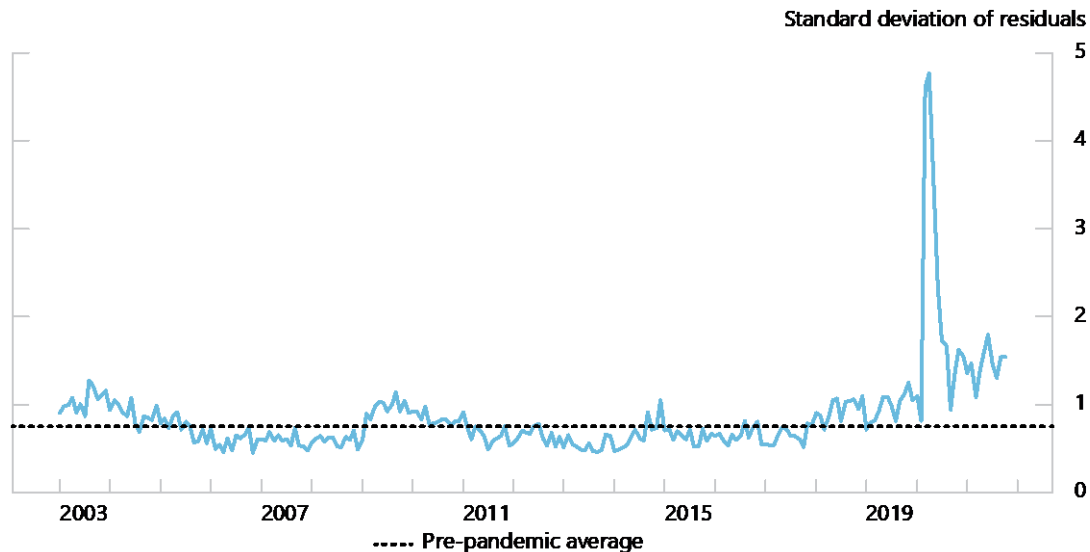
Standard deviation of residuals

----- Pre-pandemic average

Sources: Statistics Canada and Bank of Canada calculations   Last observation: October 2021

The persistence of this uneven impact over the past year and a half has highlighted the need to develop an expanded and integrated set of labour market indicators. This approach would better gauge the health of the labour market as

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[11] This index of disagreement is based on the dispersion of the differences between each indicator's observed value and that predicted by a set of summary statistical measures that capture the common historical co-movements across this set of indicators. For more information on this index, called the Expanded Labour Market Indicator, see E. Ens, L. Savoie-Chabot, K. See and S. L. Wee, "Assessing Labour Market Slack for Monetary Policy" Bank of Canada Staff Discussion Paper No. 2021-15 (October 2021).

the economy recovers from the pandemic.[12] And it would better reflect the complex, diverse and dynamic nature of our labour market.

For this purpose, we developed an expanded three-dimensional approach. In addition to a set of measures of overall labour market conditions, we added a second dimension that consists of indicators of labour market inclusion for different types of workers, by age, gender and education. A third dimension incorporates indicators of job characteristics and matching that are designed to capture situations where Canadians are working fewer hours than they want or are in jobs that do not take full advantage of their skills.

Figure 1 illustrates this approach. The recovery of each indicator is depicted as a progress bar that compares its current value to its lowest point during the crisis (the inside ring). An indicator is viewed as fully recovered when it reaches its 2019 pre-pandemic benchmark value (the outside ring).[13]

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[12] For further details on this approach, see E. Ens, L. Savoie-Chabot, K. See and S. L. Wee (2021) and Bank of Canada, "Labour Market Recovery from COVID-19."

[13] In this case, we use the 2019 monthly or quarterly average as our benchmark. Shortly after the pandemic struck and the economy was in lockdown, most of these measurements would have been at or close to zero, so the bars would have been very small or even absent.

Figure 1: Summary of labour market measures
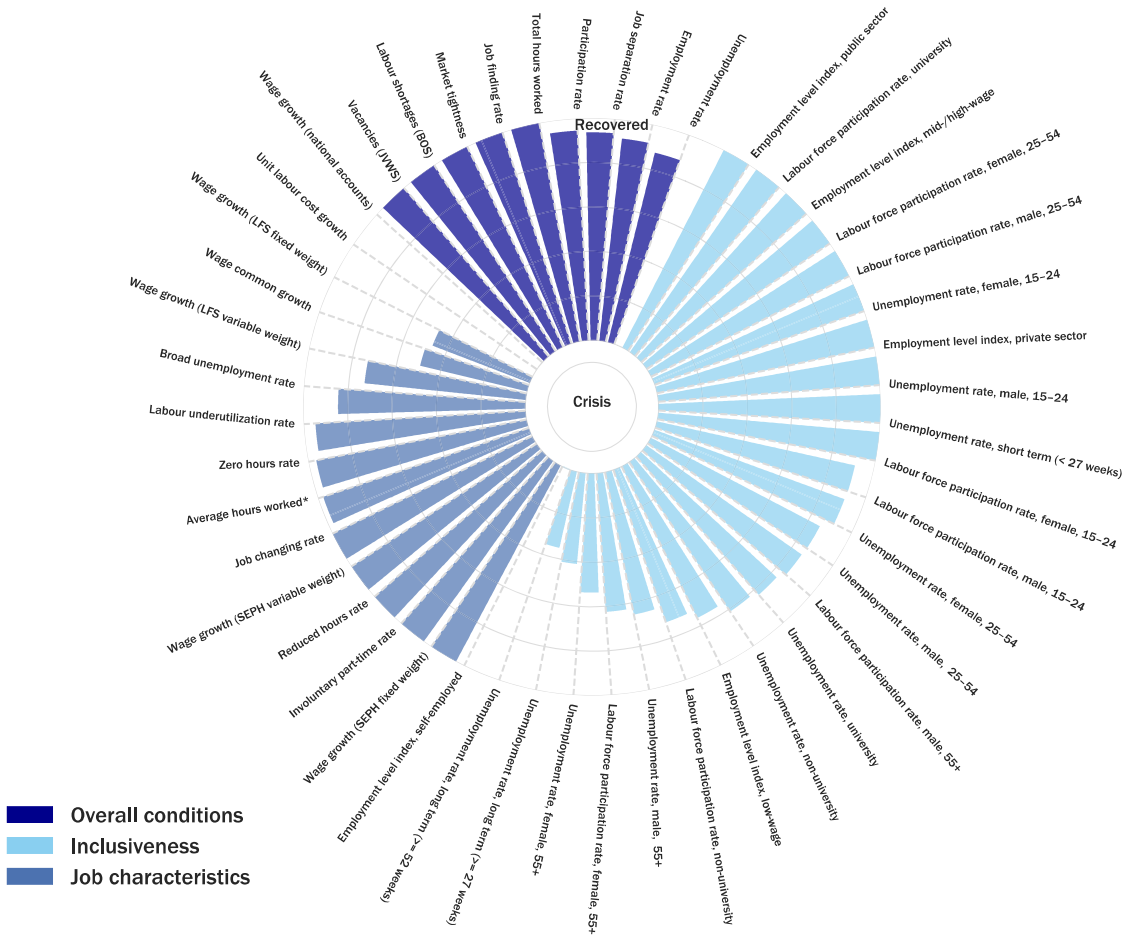
Sources: Statistics Canada, Bank of Canada and Bank of Canada calculations

Last observations: LFS, October 2021; SEPH, August 2021; BOS, 2021Q3; JVWS, 2021Q2; National accounts, 2021Q2

Note: LFS is Labour Force Survey; SEPH is Survey of Employment, Payroll and Hours; BOS is Business Outlook Survey; JVWS is Job Vacancy and Wage Survey

This approach provides some key observations about the current state of the labour market. The most important is that the labour market has improved significantly since the low point of the crisis, which occurred during the first lockdown in the spring of 2020. Groups that suffered the greatest job losses, such as women and youth, have experienced a near-complete recovery. This suggests that much of the unevenness introduced by the pandemic may not be permanent.

But we still see areas of slack, notably the high share of long-term unemployed and the elevated unemployment rates of older workers. Wage growth also continues to lag.

Going forward, a similar granular and integrated approach could be used to evaluate the state of the labour market to help identify and thereby reduce the uncertainty surrounding the level of maximum sustainable employment. The

indicator benchmarks would need to be adjusted to reflect estimates consistent with maximum employment.[14]

In summary, this comprehensive approach for assessing the overall level of employment should have important benefits for monetary policy. It will provide further evidence of underlying capacity and inflation pressures, which we can check against the signals from our other indicators, including our core inflation measures.

Conclusion

It's time for me to conclude.

The ultimate goal of monetary policy is to support strong employment and output growth by keeping inflation low, stable and predictable.

Inflation has risen above our 1 to 3 percent inflation control range in recent months, caused by the transitory effects of rising energy prices and global supply constraints. Medium-term inflation expectations, however, have remained relatively well anchored due to our past success in achieving the inflation objective.

The pandemic has had a significant impact on workers and labour markets. While we have come a long way back, there is still considerable excess capacity. The pandemic has also accelerated the structural forces affecting labour markets, such as digitalization.

As a result, uncertainties in the labour market have risen—specifically, uncertainty about the level of maximum sustainable employment and about the relationship between labour market conditions and inflationary pressure.

Our assessment of labour market conditions and underlying capacity and inflationary pressures is now more difficult. Consequently, more uncertainty exists around the timing of when the output gap will close and inflation will return sustainably to our 2 percent target.

It's our responsibility to meet the challenges posed by these labour market uncertainties. Canadians are counting on us to continue innovating and to strengthen our practice of monetary policy. And we are.

Thank you for your attention. I look forward to your questions.

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[14] These indicator benchmarks for the assessment of maximum sustainable employment could be obtained using empirical or model-based evidence.