ECONOMIC VIEWPOINT

Recessions: We Don't Always Know Them When We See Them

By Randall Bartlett, Senior Director of Canadian Economics

As central banks raise interest rates aggressively to fight inflation, there has been increased attention given to the possibility of an impending recession in the US and Canada. Indeed, a decline in US real GDP in the first quarter of 2022 and the likelihood of another negative print in the second quarter has caused some commentators to all but call a recession already. So, was the US in recession in the first half of 2022? The answer is likely not, at least as defined by the National Bureau of Economic Research – the US recession arbiter. And Canada is even less likely to have been in recession so far in 2022. But what is the likelihood of a recession going forward? Based on healthy economic data so far this year, the odds are pretty low. However, this data doesn't account for the lagged impacts of interest rate hikes on the economy, and therefore underestimates the likelihood of a recession down the road. Instead, based on the forecasts in our most recent Economic and Financial Outlook, we are of the view that the likelihood of a recession in 2023 is elevated but still less than 50% in the US. In contrast, due to its weaker economic outlook, greater sensitivity to interest rates, and higher historical volatility of real GDP growth, the odds of recession in Canada in 2023 are close to being even.

With the recent contraction in headline US real GDP at the start of 2022, some market commentators have concluded that the US is in recession. But is it? And what does this say about Canada, whose economy is so intimately linked with the US? In this note, we answer these questions by outlining what a recession is, whether economic indicators currently meet the threshold to call a recession, and what the likelihood of a recession is going forward.

What is a recession?

Colloquially, most economists and market commentators define recessions as two consecutive quarters of negative real GDP growth. But while generally a reliable proxy in normal times, this falls short of meeting the actual definition. This is important as these are not normal times, and proxies may not work as well as they once did.

US downturn decider

First looking to the US, it is the National Bureau of Economic Research's (NBER's) Business Cycle Dating Committee (the Committee) that "maintains a chronology of US business cycles. The chronology identifies the dates of peaks and troughs that frame economic recessions and expansions… The committee's approach to determining the dates of turning points is retrospective. In making its peak and trough announcements, it waits until sufficient data are available to avoid the need for major revisions to the business cycle chronology." Committee members include some of the most prominent academic economists in the United States.

To date the recession itself, the Committee draws on a swath of available data. It emphasizes "… a range of monthly measures of aggregate real economic activity published by the federal statistical agencies. These include real personal income less transfers, nonfarm payroll employment, employment as measured by the household survey, real personal consumption expenditures, wholesale-retail sales adjusted for price changes, and industrial production. There is no fixed rule about what measures contribute information to the process or how they are weighted in our decisions." However, this monthly data is not all encompassing, as it doesn't include real GDP by both income and expenditure (which most look to as a proxy for a recession). These measures are of course central to determining peaks and troughs in the business cycle.

The Committee has identifed 34 recessions in the United States dating back to 1857. Most recently, these include the Global Financial Crisis (January 2008 to June 2009) and the early part of the COVID-19 pandemic (March 2020 to April 2020). And not surprisingly, with the exception of 2001, every recession since 1980 has been accompanied by two consecutive quarters of negative growth (graph 1 on page 2). The outlier in 2001 is important because the decision was not based on headline quarterly real GDP growth. Instead, it was based on employment,

GRAPH 1
Recessions are often characterized by two quarters of negative growth

Sources : National Bureau of Economic Research and Desjardins, Economic Studies

real personal income less transfer payments, real manufacturing sales volumes and industrial production, and seemingly in that order. As such, just as we should be cautious in ignoring a recession that is not accompanied by two consecutive quarters of negative real GDP growth, we should be just as cautious in calling a recession based on two quarters of negative real GDP growth.

Canada's contraction council

Similar considerations apply in Canada. Here we look to the C.D. Howe Institute Business Cycle Council (the Council), which has the unofficial role as arbiter of business cycle dates in the Great White North. "The Council performs a similar function to the National Bureau of Economic Research (NBER) Business Cycle Dating Committee in the United States. The Council is comprised of Canada's preeminent economists active in the field." And "… [b]usiness cycle dates are determined by consensus."

Much like the NBER, the Council looks to a broad suite of economic indicators to determine if a downturn qualifies as a recession. Broadly speaking, what they are looking for is a "… pronounced, persistent, and pervasive decline in aggregate economic activity." But there are some differences with the NBER. First, the Council states that "… a decline in aggregate economic activity lasting at least one quarter is a necessary minimum for a recession… Second, in terms of amplitude, a 0.1 percent quarterly decline in aggregate economic activity is a necessary but not sufficient condition. Third, determining the minimum scope of a recession similarly requires some judgement. Finally, the practical definition of aggregate economic activity changes over time to allow analysts to use the best available data." Notably, the Council goes one step further than the NBER in categorizing the severity of a recession, with Category 1 being the mildest and Category 5 being the most severe.

Generally, the recession dates posited by the Council are noncontroversial and correspond closely those of the NBER. The one exception in terms of recession dates is 2001, which makes sense given none of the criteria to qualify as a recession laid out by the Council were met here in Canada. However, the most controversial recession call (or lack there of) is related to the two consecutive quarterly contractions in real GDP in the first half of 2015 (graph 2). The decision to not call this a recession divided the Council. Some members arguing that this qualified as a Category 1 recession, "… characterized by only a short, mild, but broad drop in real GDP and no decline in quarterly employment …", while others pointed to the narrow breadth of the downturn being the deciding factor. The 2015 recession naysayers won out at the end of the day, with clear lessons for people calling a US recession in the first half of 2022.

GRAPH 2
Two quarters of negative growth is not sufficient to call a recession

Sources : C.D. Howe Institute and Desjardins, Economic Studies

Are we in a recession now?

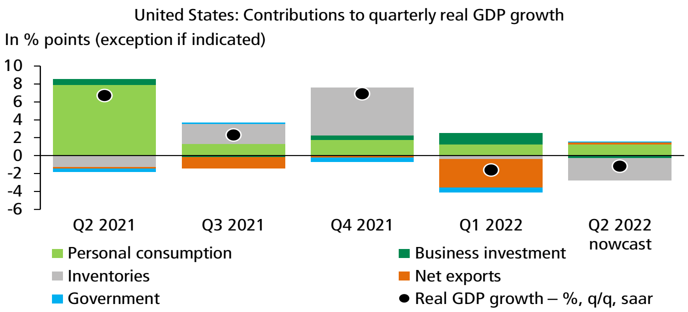
Now that we know how recessions are determined, the more important question is: are we in one now? The answer to that depends crucially on where you are, as the criteria differ somewhat across countries, and what the data are telling us.

Starting with the US, real GDP contracted in the first quarter of 2022 and is on track to decline in the second quarter as well, according to the Atlanta Fed's GDPNow model. If that second consecutive quarterly contraction occurs, this would satisfy the layman definition of a recession.

But would it be enough to persuade the NBER to make the call? Probably not. First, the negative real GDP growth observed in Q1 2022 was largely the result of a sharp increased in imports while exports floundered (graph 3 on page 3). This meant net exports were a massive drag on growth. At the same time, final domestic was up 2.0% in the first quarter of the year. Q2 also looks to be a quirk of GDP accounting, characterized by a drag from inventories as firms stopped accumulating them at the torrid pace we saw in the second half of 2021.

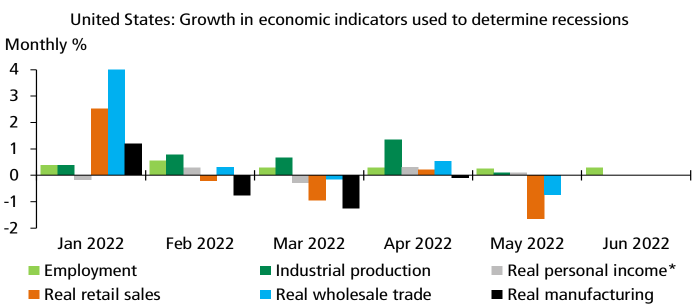
On a monthly basis, economic developments are much less contradictory (graph 4 on page 3).Employment gains remain very elevated, coming in excess of 300,000 in every month of 2022 so far. Industrial production has also increased every month this

GRAPH 3
Trade and inventories have driven the weakness in 2022 real GDP



Sources: Bureau of Economic Analysis, Federal Reserve Bank of Atlanta, and Desjardins, Economic Studies

GRAPH 4
Monthly indicators are mixed but broadly positive so far in 2022



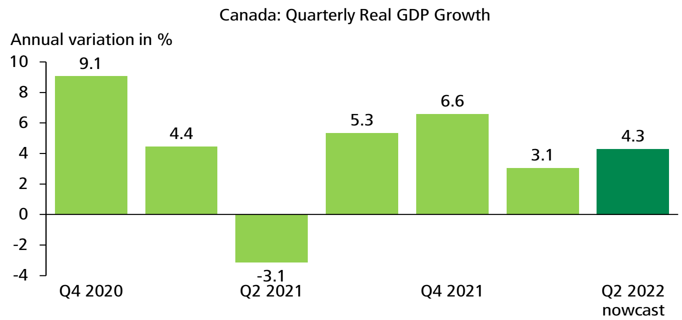
*Excludes current transfer receipts
Sources : Bureau of Economic Analysis, Bureau of Labor Statistics and Desjardins, Economic Studies

year. With the exception of January and March, growth in real personal income less transfer payments has been positive as well. Growth in real retail and wholesale trade has been more mixed, increasing in roughly half of the months for which there is data so far in 2022. One of the few unambiguously weak spots has been real manufacturing sales, which have contracted every month since January 2022. Therefore, taken in totality, it appears as though the US is probably not in recession despite very likely experiencing two consecutive quarters negative real GDP growth to start the year.

What about Canada? We're even less likely to be in a recession currently. Growth advanced at an annualized 3.1% pace in the first quarter of 2022 and is on track to best that in Q2 (graph 5). As a result, the Canadian economy does not yet satisfy the first criterion of C.D. Howe Institute Business Cycle Council methodology for recession dating, let alone any other threshold.

In Canada, we also benefit from having monthly estimates for real GDP by industry, which provides a more up-to-date glimpse at how widespread an economic downturn is across sectors of the economy. With this as a guide, the C.D. Howe Business Cycle Council determined the 2015 downturn didn't make the cut, setting a high bar for calling future recessions. To inform this

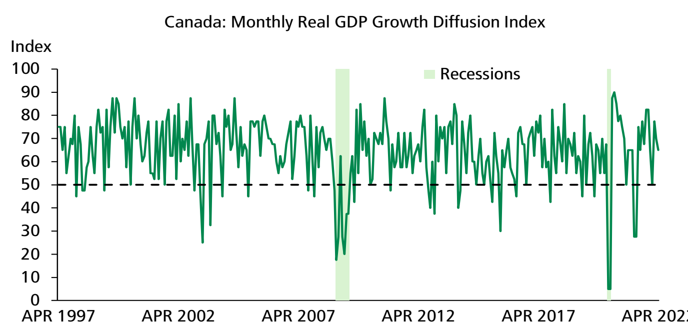
GRAPH 5
Real GDP growth in Canada in no way points to a recession currently



Sources: Statistics Canada and Desjardins, Economic Studies

decision, the Council used two approaches. The first is a diffusion index, where "… a score above 50 indicates more expanding than contracting industries and a score below 50 the opposite." Graph 6 shows a simplified version of the unweighted diffusion index using the 20 main industry groups.[1] This is determined using simple average of each sector's score – 100 if activity in the sector is expanding, 0 if its contracting and 50 if its broadly unchanged. And what the diffusion index tells us is that the Canadian economy is performing well, with a broad-based expansion continuing through April 2022. The second approach is a principal component model, which is not examined in this note for brevity.

GRAPH 6
Is Canada in recession? Not even close



Sources : C.D. Howe Institute and Desjardins, Economic Studies

Are we heading for a recession?

The more important question than "Are we in a recession?' is 'Are we barrelling towards one?'. Aggressive interest rate hikes by central banks globally means that domestic demand is going

[1] The simple unweighted diffusion index presented in this note uses the two-digit NAICS breakdown of chain-weighted sectoral data as opposed to the three-digit NAICS breakdown used by the C.D. Howe Business Cycle Council. This is because the three-digit NAICS breakdown is considered to put too much weight on manufacturing subsectors (of which there are 18 compared to, for example, 4 for construction and 3 for mining, quarrying and oil and gas extraction).

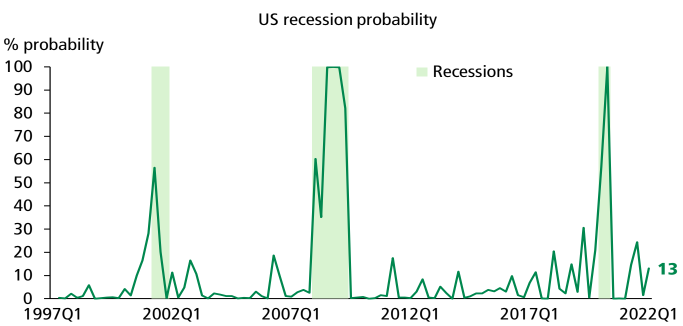
to get squeezed. We're already seeing it in the housing market on both sides of the 49th. And there are valid concerns that consumers and business will be next to get hit as monetary policy tends to be felt most acutely a year or more in the future. Indeed, the principles that define a recession – a pronounced, persistent, and pervasive decline in real economic activity – suggest the building blocks of a future recession could be there in a way they may not have been in, say, 2001 in the US or 2015 in Canada.

What do models tell us?

To determine whether we're heading toward a recession, economists use models that incorporate economic and financial market indicators today that are thought to predict the likelihood of future recessions. These are known as probit models. Research for the US shows that, historically, economic indicators do a better job of predicting future recessions than financial market indicators (Fossati, 2015). Additionally, combining economic indicators into a single macroeconomic factor does an even better job of predicting recessions, as it dampens the impact of data revisions and idiosyncratic sector shocks.

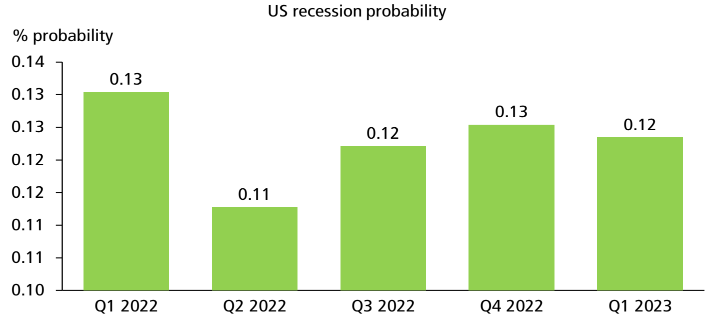
To undertake this analysis, we look to the economic indicators used by the NBER to determine recessions. These include industrial production, real personal income less transfer payments, real manufacturing trade and sales and private employment as well as real retail and wholesale trade. Regressing historical NBER recession dates on a common factor among these economic indicators through the end of 2021 suggests that there is a less than 15% probability that a US recession began in the first quarter of this year (graph 7). Just as importantly, this same data points to an even lower likelihood of a recession in all subsequent quarters through Q1 2023 (graph 8). At a monthly frequency, economic indicators so far in 2022 suggest a recession in the US within the next 12 months is even less likely than in the first quarter. And using these same economic indicators for Canada so far this year point to an even lower likelihood of a recession here than in the US.

GRAPH 7
Economic indicators don't suggest the US economy was in recession in Q1 2022



Sources: National Bureau of Economic Research and Desjardins, Economic Studies

GRAPH 8
Looking head, economic indicators don't yet point to a US recession in the next year

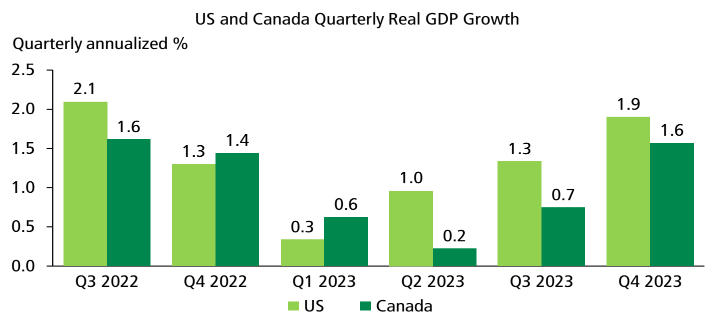


Sources: National Bureau of Economic Research and Desjardins, Economic Studies

What does our forecast say?

However, none of these models account for the future path of interest rates and their economic impacts. So, to better answer the question of whether we are heading toward a recession, we can look to our most recent Economic and Financial Outlook. In it, we projected that 2023 real GDP growth will be 1.2% and 1.1% in the US and Canada, respectively. But looking under the hood, the numbers look much worse. On a quarterly basis, US real GDP growth is expected to dip below one percent annualized in the first quarter of 2023 (graph 9). In Canada, similarly weak real GDP growth is expected to be realized in three quarters next year.

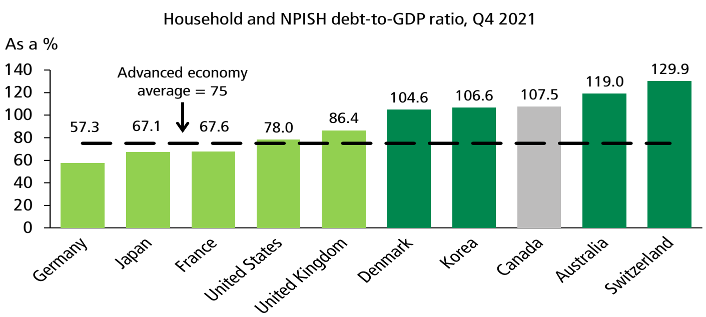
GRAPH 9
Real GDP growth is expected to be extremely weak in H1 2023



Sources: Desjardins, Economic Studies

Now let's put this in the context of the layman definition of a recession – two consecutive quarters of negative real GDP growth. With the standard deviation of quarterly real GDP growth in the decade that preceded the pandemic being 1.4% annualized in the US, the risk of a recession south of the border is real but likely less than 50%. In contrast, real GDP growth in Canada is more volatile as a result of the additional role that the energy sector plays in the economy. As such, the standard deviation of annualized quarterly real GDP growth in the decade prior to the pandemic was 1.8%. When combined with much weaker quarterly real GDP growth in 2023 expected in Canada, we could enter recession more easily than the US. Canada's economy is also much more sensitive to interest rate hikes than the US given its higher level of household indebtedness (graph 10). Consequently, the distribution of possible outcomes around our baseline forecast is tilted to the downside. That includes the risk that the Bank of Canada overestimates the amount of tightening needed to cool domestic demand and inflation. Therefore, it is our view that Canada is pushing up against even odds of a recession in 2023. And of course, if the US economy does go into a recession as defined by the NBER, Canada's economy would almost certainly follow suit.

GRAPH 10
Canadian households are among the most indebted in the world



NPISH: Non-profit institution serving households.
Sources: Bank for International Settlements and Desjardins, Economic Studies

But to make the final recession call, we would need to see a deterioration in a broad suite of economic indicators that capture the totality of real economic activity. The diffusion index examined earlier will be central to this determination in Canada. For the US, this would require a meaningful retrenchment in the labour market at a minimum, which continues to remain extremely tight and keeps beating expectations month after month.

Conclusion

While neither the US nor Canada appear to be in a recession currently, the likelihood continues to increase along with interest rate hikes and the increasingly hawkish stances taken by central banks trying to defend their credibility Canada is at particular risk because of our high level of household indebtedness, and we consider the odds of a recession to be close to even in 2023. The chance of a recession in the US is also elevated, although less acute than it is in Canada. But any recession will be one like no other, as was the case in early 2020 as well as the subsequent post-pandemic recovery. Recession or not, what rapidly rising interest rates will do is sharply lower domestic demand growth. This will help to cool domestically-driven inflation. In turn, we believe that this will ultimately prompt central banks to cut interest rates, likely before the end of 2023.